

TYPE 182A AND 192A STARLITE® TELEPHONE SETS
SHOP PROCEDURE

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1. GENERAL

1.01 This section provides the shop procedure for the Type 182A and 192A STARLITE Telephones.

1.02 This section includes telephone identification coding information, disassembly, assembly, and adjustment for the Type 182A and 192A telephones.

1.03 This section is reissued to incorporate the new Integrated Circuit Touch Calling Unit (ICTCU), and to include other miscellaneous changes to the text, tables, and figures. Due to the extensive changes involved, marginal arrows are omitted. Remove the previous issue of this section from the binder or microfiche file and replace it with this issue.

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2. TELEPHONE IDENTIFICATION CODE

2.01 Coding the telephone prior to packaging, requires the formulation of a part number. The coded part number consists of a two-letter prefix, six-digits, and a three-letter suffix. The code is explained in Figures 1 and 2.

2.02 As an example (refer to Figure 2), a carton with the code number NC-820101-MSL is defined as follows:

- (a) NC-820 refers to a Type 182A desk telephone with the NC series.
- (b) The fourth and fifth digits (1 and 0) refer to the color sand beige.
- (c) The sixth digit (1) refers to a telephone without a message waiting lamp.
- (d) The first suffix (M) refers to the ABC lighted rotary dial.
- (e) The second and third suffix (S and L) refer to a straight line ringer.

2.03 Telephones with the prefixes NC and ND differ only in the length of the handset cord.

2.04 Identification and precautions with regard to the ICTCU are as follows:

- (a) The color of the collars around the pushbuttons indicates whether the TCU is an Inductance-Capacitance Touch Calling Unit (LCTCU) or an ICTCU. On the LCTCU, part No. D-840000-A, the color of the collars is doeskin gray. On the ICTCU, part No. D-840000-F, the color of the collars is dark gray. The pushbuttons on both the LCTCU and ICTCU are of the light doeskin gray color.
- (b) The Integrated Circuit (IC) Dual Tone Multifrequency (DTMF) tone generator employed in the ICTCU is fabricated using Metal Oxide Semi-conductor (MOS) technology. This fabrication method produces a device that is susceptible to damage by electrostatic discharge. Even though protective circuitry has been included in the design, the device is still subject to voltage overstressing. To eliminate damage to the IC device, safe grounding and handling procedures must be adhered to when handling the ICTCU.
- (c) When handling ICTCU's, do not handle or touch the frequency spring electrical connections. In addition to damage to the IC device by electrostatic discharge, the frequency springs can be mechanically damaged. The ICTCU should never be connected to or disconnected from the telephone network while power is still applied.

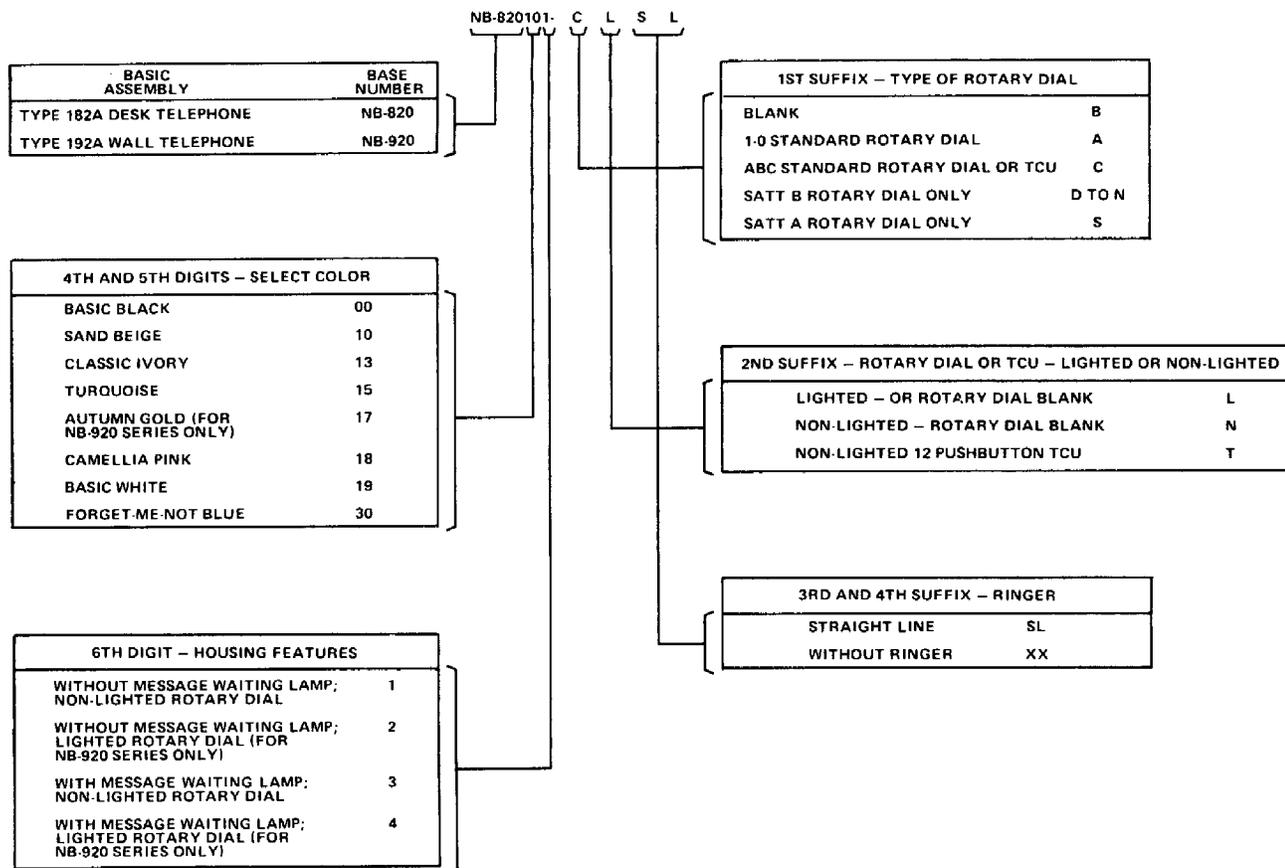


Figure 1. Type 182A and 192A Telephones Series NB Telephone Code Information.

NOTE: Additional information on IC handling procedures and work station setup is available in section 996-100-100.

3. DISASSEMBLY

3.01 There are several major components that make up the Type 182A and 192A telephones. The major components of the telephone are as follows and are shown in Figures 3 and 4:

- (a) Handset.
- (b) Housing.
- (c) Rotary dial.
- (d) Touch Calling Unit (TCU).
- (e) Hookswitch assembly.
- (f) Ringer.
- (g) Transmission Network.

3.02 Some of the major components may be disassembled further than is described in this part. For further disassembly and maintenance procedures of the rotary dial, TCU, and handset, refer to Sections 997-300-500, 997-306-500, and 997-307-500, and the 473-800 sub-division of GTE Practices.

3.03 Refer to Figures 3 and 4 for an exploded view of the Type 182A and 192A telephones, and Tables 1, 2, 3, and 4 for the appropriate item number and replacement part. Also, refer to Figures 5 and 6 for a view of the rotary dial and TCU and a view of the telephone interior, respectively (item numbers also match those listed in Tables 1, 2, 3, and 4).

Housing

3.04 To remove the desk telephone housing (item 1), refer to Figure 3 and proceed as follows:

- (a) Use a screwdriver to loosen the housing screw (item 2) that secures the housing to the baseplate (items 31 and 31a).
- (b) With the telephone resting on its baseplate, depress the hookswitch lever (item 17). Lift up on the right side of the housing and slide it to the left to disengage it from the baseplate.

CAUTION: Use extreme care when removing the housing; the dial (or TCU) leads are still connected to the transmission network (item 28).

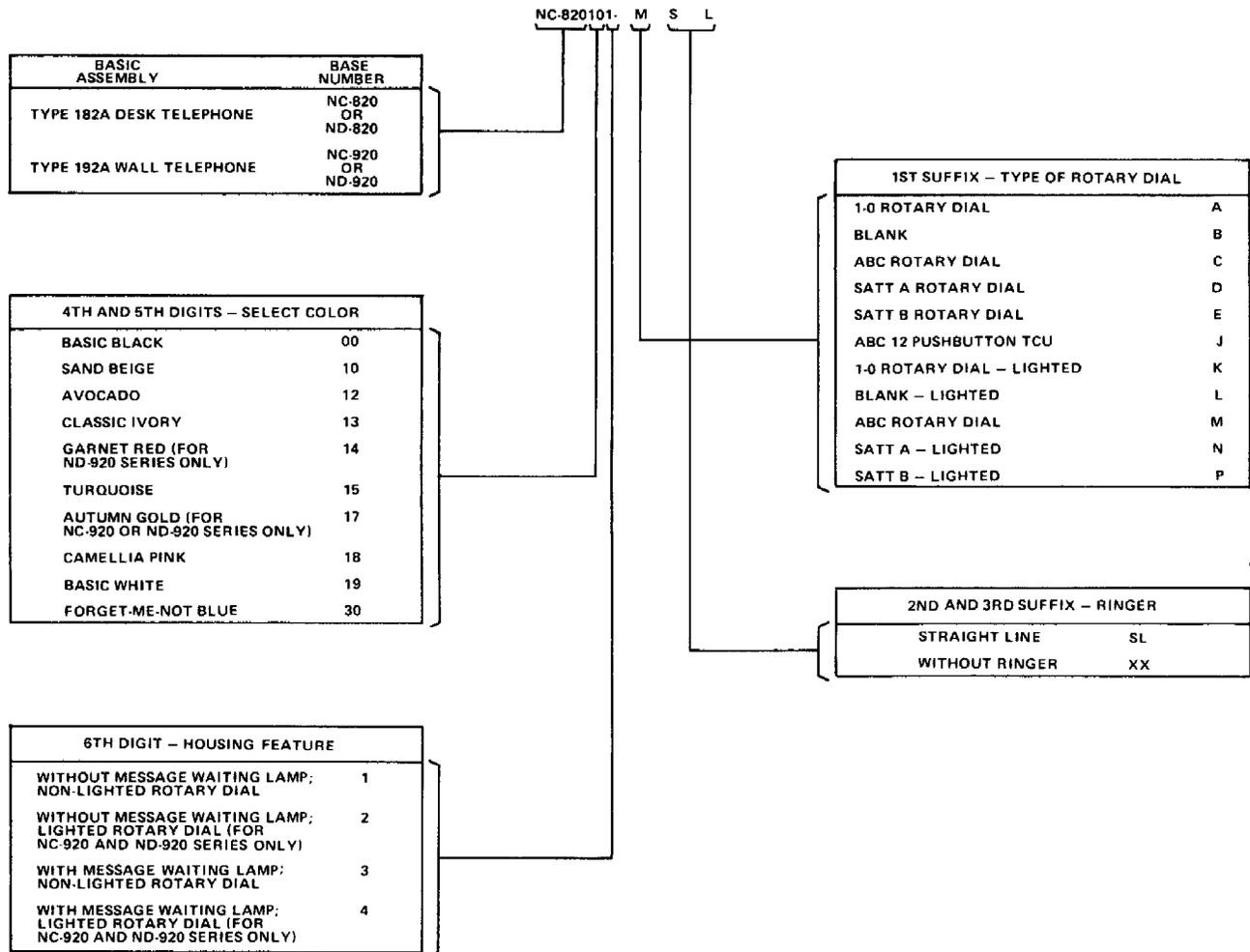


Figure 2. Type 182A and 192A Telephones Series NC and ND Telephone Code Information.

Table 1. Replacement Parts for the Type 182A and 192A Telephones.

ITEM NO. (SEE NOTE 1)	DESCRIPTION	PART NUMBER	FOURTH AND FIFTH DIGIT COLOR NUMBERS										QUANTITY	USED ON (SEE NOTE 2)	SERIES TELEPHONE			
			00	10	12	13	14	15	18	19	29	30			NB	NC	ND	
			BASIC BLACK	SAND BEIGE	AVOCADO	CLASSIC IVORY	RED	TURQUOISE	CAMELLIA PINK	BASIC WHITE	AUTUMN GOLD	FORGET-ME-NOT BLUE						
1	Desk telephone housing																	
	Without message waiting lamp kit (less TCU brackets)	HD-490211-	A	B	T	E			G	L	M		K	1	D	X	X	X
	With message waiting lamp kit (H-884686-1) (less TCU brackets)	D-490211-	AL	BL	TL	EL			GL	LL	ML		KL	1	D	X	X	X
2	Screw	HD-764005-K												1	D	X	X	X
3	Wall telephone housing																	
	Without message waiting lamp kit (non-lighted rotary dial)	HD-480034-*	A	B	T	E	F	G	L	M	AG		K	1	W	X	X	X
	Without message waiting lamp kit (lighted rotary dial)	HD-480034-*	AB	BB	TB	EB	FB	GB	LB	MB	AGB		KB	1	W	X	X	X
	With message waiting lamp kit (H-884686-1) (non-lighted rotary dial)	HD-480034-*	AL	BL	TL	EL	FL	GL	LL	ML	AGL		KL	1	W	X	X	X
	With message waiting lamp kit (H-884686-1) (lighted rotary dial)	HD-480034-*	AC	BC	TC	EC	FC	GC	LC	MC	AGC		KC	1	W	X	X	X
	For type 12C TCU without message waiting lamp kit (less TCU brackets)	HD-480034-*	A	B	T	E	F	G	L	M	AG		K	1	W	X	X	X
	For type 12C TCU with message waiting lamp kit (H-884686-1) (less TCU brackets)	HD-480034-*	AL	BL	TL	EL	FL	GL	LL	ML	AGL		KL	1	W	X	X	X

*HD-480034-X consists of part no. D-490212-X housing, part no. D-37728-A pin, and part no. D-67684-A plunger.

- NOTES: 1. The item numbers in Table 1 refer to the item numbers shown in Figures 3, 4, 5, and 6.
2. Under the USED ON column, the D stands for the Type 182A desk telephone, and the W stands for the Type 192A wall telephone.

Table 1. Replacement Parts for the Type 182A and 192A Telephones (Continued).

ITEM NO. (SEE NOTE 1)	DESCRIPTION	PART NUMBER	FOURTH AND FIFTH DIGIT COLOR NUMBERS										QUANTITY	USED ON (SEE NOTE 2)	SERIES TELEPHONE		
			00	10	12	13	14	15	18	19	29	30			NB	NC	ND
			BASIC BLACK	SAND BEIGE	AVOCADO	CLASSIC IVORY	RED	TURQUOISE	CAMELLIA PINK	BASIC WHITE	AUTUMN GOLD	FORGET-ME-NOT BLUE					
4	Hook lock	D-58086-1											1	W	X	X	X
5	Rotary dial	Refer to Table 4 and 5											1		X	X	X
6	Screw	D-761052-D											2		X	X	X
7**	Rotary dial and mounting bracket	D-732232-A											1		X	X	X
8	Rotary dial blank	Refer to Table 4 and 5											1		X	X	X
9	Touch calling unit (TCU)	Refer to Table 4 and 5											1		X	X	X
10	Screw	HD-760003-F											2		X	X	X
11	Adapter plate																
	10-pushbutton 12-pushbutton	D-780982- D-780988-	A A	B B	T T	E E		G G	L L	M M	AG AG	K K	1 1		X X	X X	X X
12**	Mounting bar (required for old TCU only)	HD-580036-A											2	D	X	X	X
13	Handset assembly	L-9053- L-9054-	CA	CB	T	CE	CF	CG	CL	CM	CAG	CK	1		X X	X X	X X
14	Cord clamp	D-73261-C											1		X	X	X
15	Line cord (5-conductor)	D-543476-	A	B	T	E		G	L	M		K	1	D	X	X	X
15A	Line cord (3-conductor)	HD-540033-	A	B	T	E		G	L	M		K	1	D			
16	Hookswitch coil spring	D-110002-A D-109962-A											1		X		
													1			X	X
17	Hookswitch lever	D-16395-A											1		X	X	X

**Included in universal conversion kit for new STARLITE® telephone housing.

- NOTES: 1. The item numbers in Table 1 refer to the item numbers shown in Figures 3, 4, 5, and 6.
2. Under the USED ON column, the D means the Type 182A desk telephone, and the W means the Type 192A wall telephone.

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Table 1. Replacement Parts for the Type 182A and 192A Telephones (Continued).

ITEM NO. (SEE NOTE 1)	DESCRIPTION	PART NUMBER	FOURTH AND FIFTH DIGIT COLOR NUMBERS										QUANTITY	USED ON (SEE NOTE 2)	SERIES TELEPHONE			
			00	10	12	13	14	15	18	19	29	30			NB	NC	ND	
			BASIC BLACK	SAND BEIGE	AVOCADO	CLASSIC IVORY	RED	TURQUOISE	CAMELLIA PINK	BASIC WHITE	AUTUMN GOLD	FORGET-ME-NOT BLUE						
18	Screw	D-761022-A												1		X	X	X
19	Hookswitch spring and bracket assembly	Refer to Table 6												1		X	X	X
20	Bearing pin	D-37727-A												2		X	X	X
20A	Bearing pin	HD-370020-A												2			X	X
21	Plunger	D-67643-B												2	D	X	X	X
22	Buffer	D-750316-A												1		X	X	X
23**	Plunger	D-67684-A												1	W	X	X	X
24**	Bearing pin	D-37728-A												1	W	X	X	X
25	Ringer assembly (complete with items 26 and 27)	D-56600-ASLR D-56626-ASLR												1 1		X		X
26	Screw	D-761023-A												2		X	X	X
27	Capacitor 0.47 uF	D-68837-A												1		X	X	X
28	Card assembly, transmission network	Refer to Table 6												1		X	X	X
29	Screw	D-761023-A												2		X	X	X
30	Slide switch assembly	Refer to Table 6												1		X	X	X
31	Baseplate	D-470394-C												1		X	X	X
31A	Baseplate	HD-470008-C													W		X	X
32	Terminal	D-150289-A												4		X	X	X

**Included in universal conversion kit for new STARLITE telephone housing.

NOTES: 1. The item numbers in Table 1 refer to the item numbers shown in Figures 3, 4, 5, and 6.

2. Under the USED ON column, the D means the Type 182A desk telephone, and the W means the Type 192A wall telephone.

Table 1. Replacement Parts for the Type 182A and 192A Telephones (Continued).

ITEM NO. (SEE NOTE 1)	DESCRIPTION	PART NUMBER	FOURTH AND FIFTH DIGIT COLOR NUMBERS										QUANTITY	USED ON (SEE NOTE 2)	SERIES TELEPHONE			
			00	10	12	13	14	15	18	19	29	30			NB	NC	ND	
			BASIC BLACK	SAND BEIGE	AVOCADO	CLASSIC IVORY	RED	TURQUOISE	CAMELLIA PINK	BASIC WHITE	AUTUMN GOLD	FORGET-ME-NOT BLUE						
33	Spring clip	D-731960-A												1		X	X	X
34	Cork pad	D-67683-A												2	D	X	X	X
35	Screw	D-761067-E												1	W	X	X	X
36	Cover plate	Refer to Table 6												1		X	X	X
37	Connecting block (5-conductor)	D-150290-A												1	D	X	X	X
38	Connecting block (3-conductor)	D-150206-A												1	W	X	X	X
39	Current limiting plug	Refer to Table 6												1		X	X	X
40	Designation cover (for TCU's only)	D-530381-A												1		X	X	X
41	Designation strip (for TCU's only)	D-530386-A												1		X	X	X
42	Wire lead (for manual telephones only). Not shown	Refer to Table 4												1		X	X	X
43	Mounting brackets (for 12C TCU). Not shown	D-732231-A												2		X	X	X
44	Wire clip	FD-1032-BR												1		X	X	X

- NOTES: 1. The item numbers in Table 1 refer to the item numbers shown in Figures 3, 4, 5, and 6.
 2. Under the USED ON column, the D means the Type 182A telephone, and the W means the Type 192A telephone.

Table 2. NB Series Telephone for a Rotary Dial or TCU.

ITEM NO. (SEE NOTE 1)	DESCRIPTION	1ST SUFFIX	A				B				C				D				E				F				G				H				J				K				L				M				N				S				QUANTITY																																							
		2ND SUFFIX	L	N	S	T	L	N	L	N	S	T	L	N	L	N	L	N	L	N	L	N	L	N	L	N	L	N	L	N	L	N	L	N	L	N	L	N	L	N	L	N	L	N	L	N	L	N																																																		
		PART NUMBER																																																																																																
9	TCU 10-pushbutton	1-0	D-84969- (See Note 2)																																																B																																															1
		ABC																																																	A																																															1
	12-pushbutton	1-0	D-84971- (See Note 2)																																																B																																															1
		ABC																																																	A																																															1
5	Rotary dial 1-0 ABC SATT A SATT B	D-84942-																																																A X																																															1	
		D-84935-																																																A X																																															1	
		D-84936-																																																																																															A3 X3	1
		D-84937-																																																A1 X1	A2 X2	A3 X3	A4 X4	A5 X5	A6 X6	A7 X7	A8 X8	A9 X9	A0 X0																																					1		
8	Rotary dial blank	D-490124-																																																A X																																															1	
42	Wire lead (not shown; for manual telephones only)	D-543069-																																																F F																																															1	

- NOTES: 1. The item numbers in Table 2 refer to the numbers shown in Figure 5.
2. These part numbers are manufactured discontinued. For replacement, substitute the Type 12C TCU. When replacing old 10 and 12 pushbutton TCU's with the Type 12C TCU, a new housing is required, and can be ordered from Table 3.

Table 3. NC and ND Series Telephone for a Rotary Dial or TCU.

ITEM NO. (SEE NOTE 1)	DESCRIPTION	PART NUMBER	1ST SUFFIX													
			A	B	C	D	E	F	G	H	J	K	L	M	N	P
9	TCU															
	10-pushbutton	1-0	D-84969- (See Note 2)						B							
		ABC							A							
	12-pushbutton	1-0	D-84971- (See Note 2)							B						
		ABC									A					
	LC Type 12C	ABC	D-840000- (See Note 3)						A	A	A	A				
IC Type 12C	ABC	D-840000- (See Note 3)						F	F	F	F					
5	Rotary dial															
	1-0	D-84942-	X									A				
	ABC	D-84935-			X								A			
	SATT A	D-84936-				X3								A3		
	SATT B	D-84937-					X1								A1	
8	Rotary dial blank	D-490124-		X								AR				

- NOTES: 1. The item numbers in Table 3 refer to the item numbers shown in Figure 5.
2. These part numbers are manufacture discontinued. For replacement, substitute the Type 12C TCU. (See Note 3).
3. When replacing old 10 and 12 pushbutton TCU's with the Type 12C TCU, a new housing is required, and can be ordered from Table 3.

Table 4. Optional Replacement Parts for the Type 182A and 192A Telephones.

ITEM NO. (SEE NOTE 1)	DESCRIPTION	PART NUMBER	QUANTITY	USED ON (SEE NOTE 2)	SERIES TELEPHONE		
					NB	NC	ND
19	Hookswitch spring and assembly bracket						
	For rotary dial	D-735514-A	1		X		
	For TCU	D-735514-B	1		X		
	For rotary dial and TCU	D-735514-C	1			X	X
30	Slide switch assembly (for lighted rotary dial)	D-72226-A	1	D	X	X	X
36	Cover plate	D-780932-A	1	D	X	X	X
28	Card assembly, transmission network						
	For rotary dial	WA-1120-A	1		X		
	For TCU	WA-1124-A	1		X		
	For rotary dial	WA-1154-A	1			X	X
	For TCU	WA-1155-A	1			X	X
39	Current limiting plug (for lighted rotary dial)	D-57157-A	1		X		
		D-57165-A	1			X	X

- NOTES: 1. The item numbers in Table 4 refer to the item numbers shown in Figures 3 and 4.
2. In the USED ON column, the D means the Type 182A Desk Telephone.

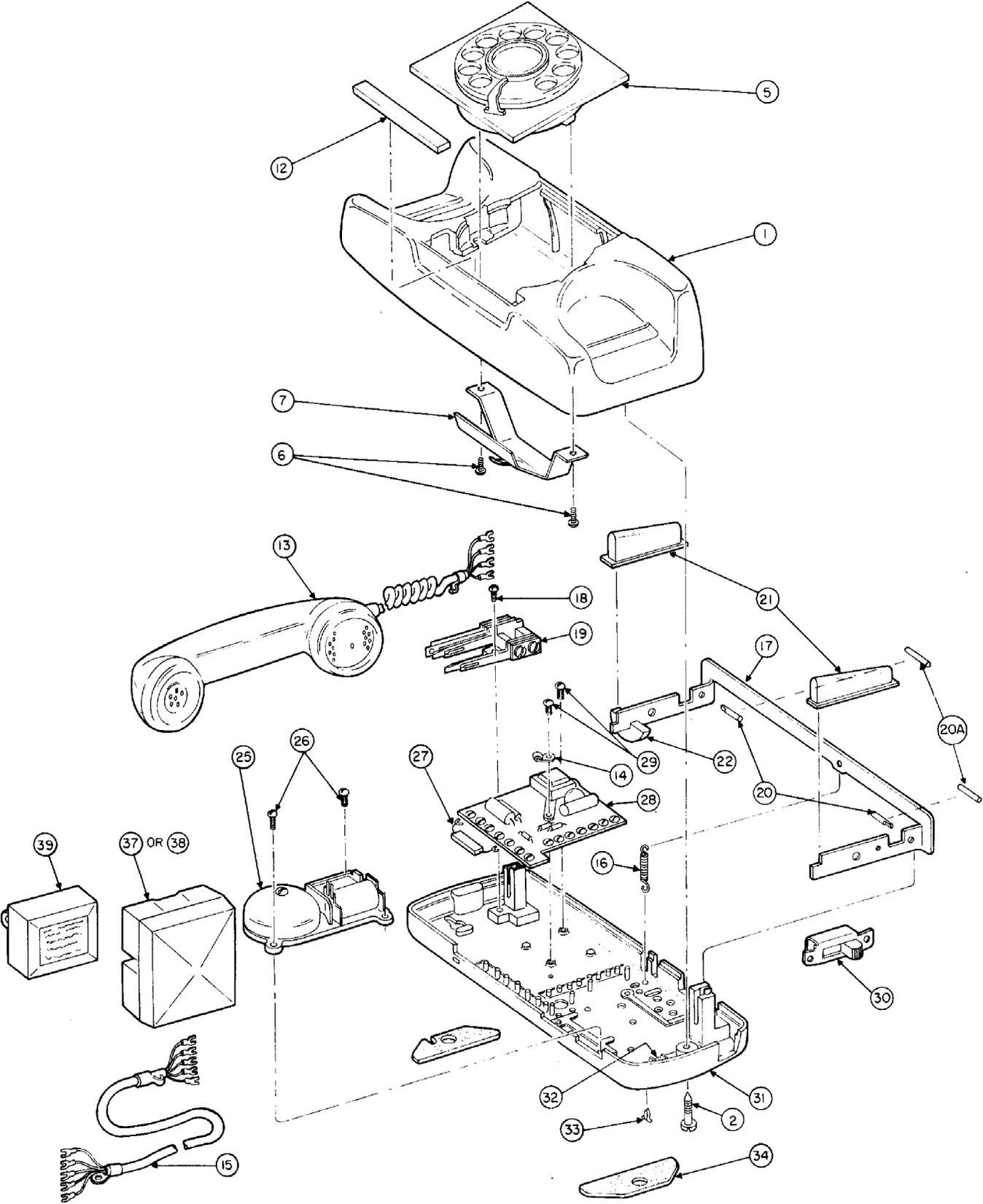


Figure 3. Exploded View of the Type 182A Desk Telephone.

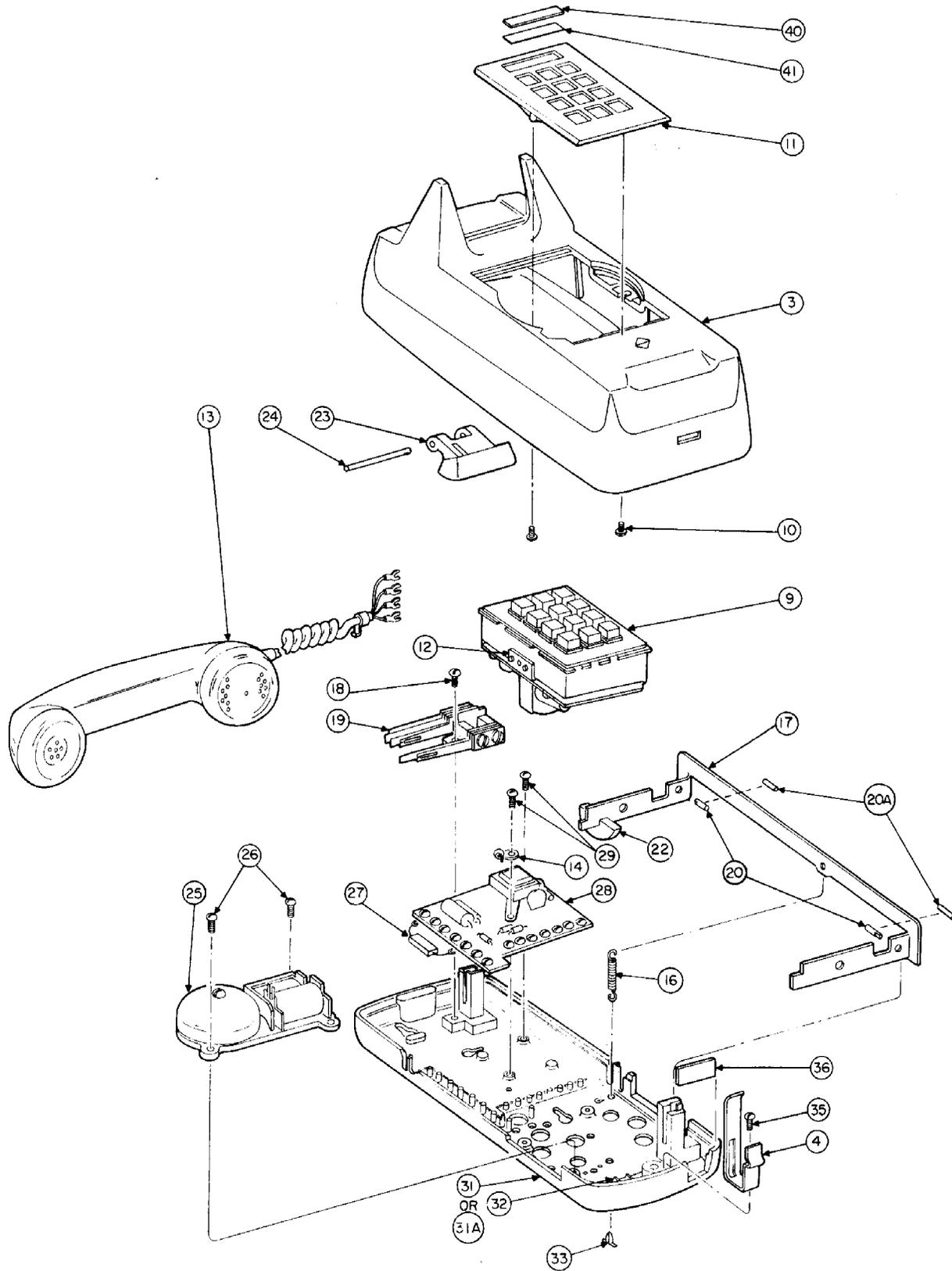


Figure 4. Exploded View of the Type 192A Wall Telephone.

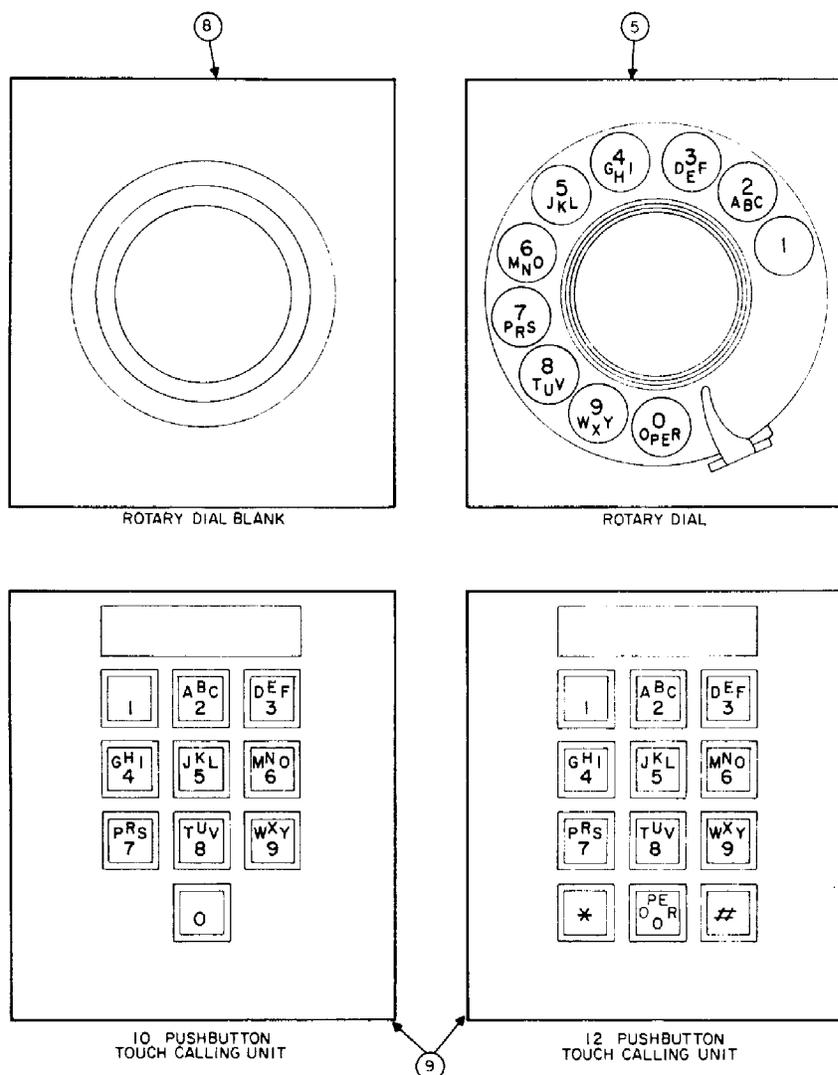


Figure 5. Rotary Dial and TCU Options.

- (c) Swing the housing upward to clear it from the telephone mechanism while leaving the dial (or TCU) leads connected.
- (d) Remove the wire clip (item 44) that bundles the TCU leads together as shown in Figure 6.

3.05 To remove the wall telephone housing (item 3), refer to Figure 4, and proceed as follows:

- (a) Press in on the hook lock (item 4) located in the slot along the bottom surface of the telephone housing.
- (b) Swing the bottom of the housing far enough outward to clear it from the telephone mechanism.
- (c) Lift the housing upward to disengage the tab located at the upper end of the housing from the slot in the baseplate (item 31 or 31a).

CAUTION: Use extreme care when removing the housing; the dial (or TCU) leads are still connected to the transmission network (item 28).

- (d) Remove the wire clip (item 44) that bundles the TCU leads together as shown in Figure 6.

Rotary Dial

3.06 To remove the rotary dial (item 5), refer to Figures 3 and 7 and Table 2 and 3 and proceed as follows:

- (a) Disconnect the dial leads from the transmission network (item 28) terminals and baseplate terminals.
- (b) Remove the two dial mounting screws (item 6) and the rotary dial guard and mounting bracket (item 7).
- (c) Lift the dial up and out through the front of the housing.

3.07 To further disassemble the dial, refer to Section 997-300-500 of GTE Practices.

Touch Calling Unit

3.08 To remove an old-style TCU (item 9), refer to Figure 4 and proceed as follows:

- (a) Disconnect the TCU leads from the transmission network (item 28) terminals.
- (b) Remove the TCU mounting screws (item 10), and lift the TCU adapter plate (item 11) off the telephone housing.
- (c) Lift the TCU up and out of the opening in the telephone housing.

NOTE: The TCU support bar (item 12) is removed when the TCU is removed.

3.09 To remove a Type 12C TCU (item 9), refer to Figure 4 and proceed as follows:

- (a) Disconnect the TCU leads from the transmission network (item 28) terminals and the baseplate terminals.
- (b) Remove the two TCU mounting screws (item 10). Lift the TCU adapter plate (item 11) and telephone housing off the TCU.

3.10 To further disassemble the TCU, refer to Sections 997-306-500 or 997-307-500 of GTE Practices.

Handset

3.11 To remove the handset (item 13), refer to Figures 3 and 4 and proceed as follows:

- (a) Remove the handset cord from under the cord clamp (item 14).
- (b) Disconnect the handset cord leads from the transmission network terminals.

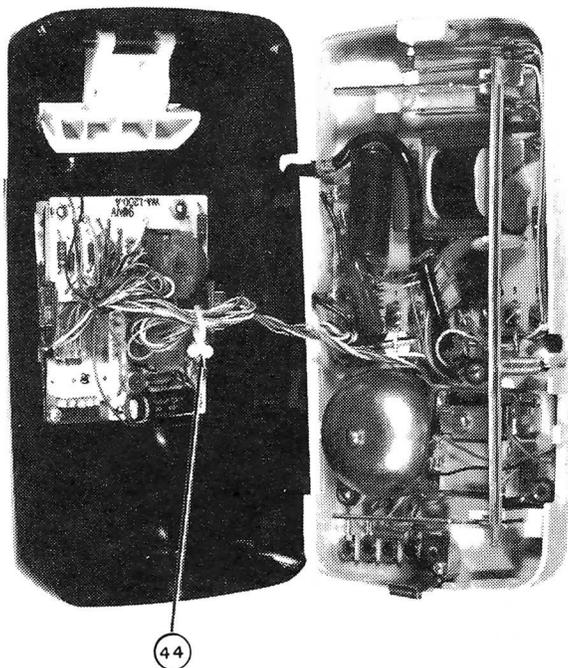


Figure 6. Interior View of the Type 192A Telephone.

- (c) Remove the handset cord strain relief hook from the baseplate, and pull out the handset cord.

Line Cord

3.12 To remove the line cord (item 15), refer to Figure 3 and proceed as follows:

- (a) Disconnect the line cord leads from the transmission network terminals and baseplate terminals.
- (b) Remove the cord strain relief hook from the baseplate and pull the line cord out.

Hookswitch Assembly

3.13 To remove the hookswitch assembly (items 16 through 19), refer to Figures 3 and 4 and proceed as follows:

- (a) Unhook the hookswitch coil spring (item 16) from the hookswitch lever (item 17).
- (b) Lift the hookswitch lever up and away from its mounting posts.
- (c) Disconnect the hookswitch leads from the transmission network.
- (d) Remove the screw (item 18) and lift the hookswitch spring and bracket assembly (item 19) from the mounting post.

3.14 To further disassemble the hookswitch assembly, refer to Figures 3 and 4 and proceed as follows:

- (a) Slip the ends of the bearing pins (items 20 and 20a) out of the holes in the hookswitch lever (item 17).
- (b) For the Type 182A telephone, lift the plungers (item 21) and the buffer (item 22) off the hookswitch lever.
- (c) For the Type 192A telephone, lift the plunger (item 23) and bearing pin (item 14) off of the telephone housing.

Ringer

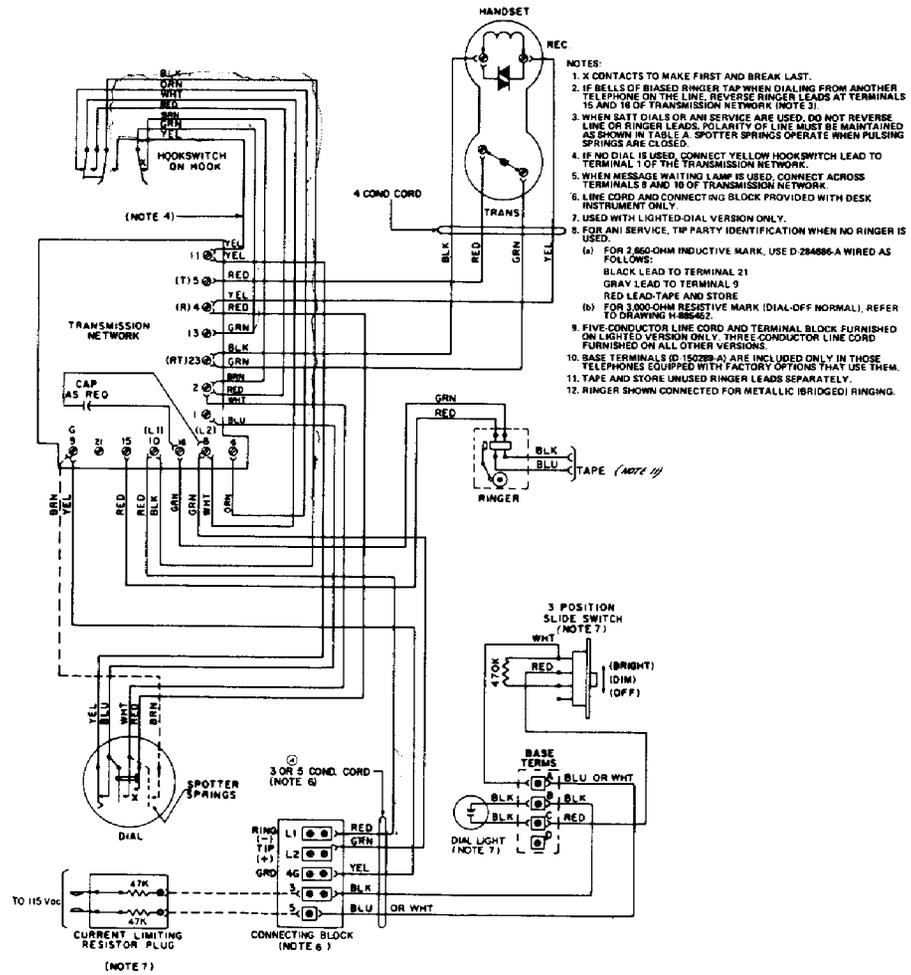
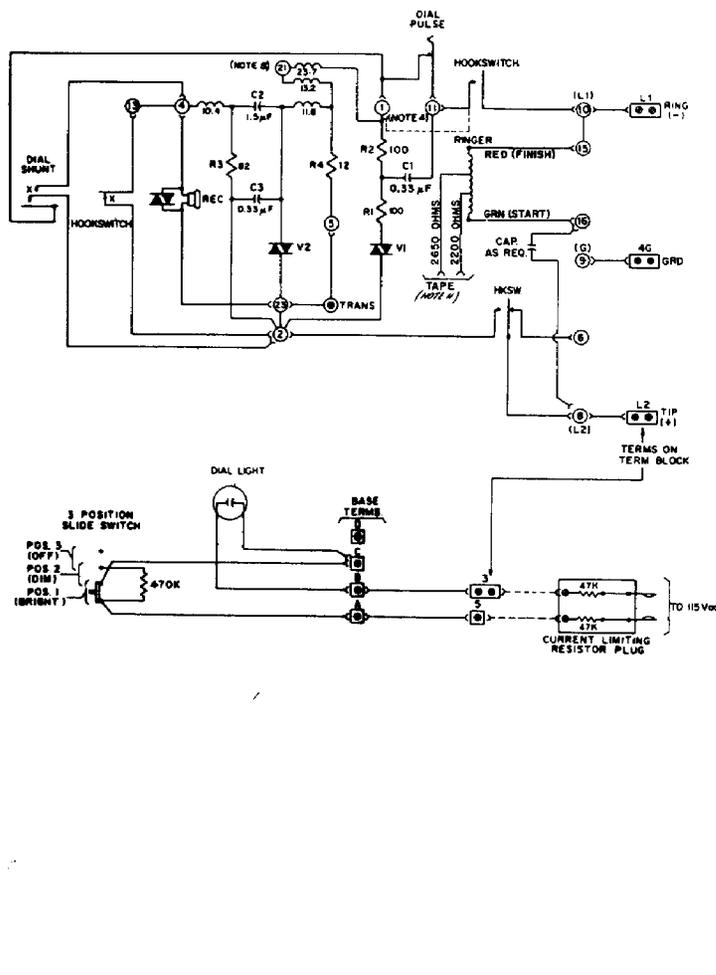
3.15 To remove the ringer (item 25), disconnect the ringer leads from the transmission network and remove the screws (item 26) and washers (item 26a) that secure the ringer to the baseplate. Remove the capacitor (item 27) from the transmission network.

Transmission Network

3.16 Remove the transmission network (item 28) from the baseplate (items 31 or 31a) by removing the screws (item 29) and washers (item 26a) that go through the feet of the inductor coil on the transmission network.

Rotary Dial Light Switch

3.17 To remove the optional dial light switch (item 30), disconnect the leads from the baseplate terminals, and lift the switch up and out of the mounting slots in the baseplate.



- NOTES:
1. X CONTACTS TO MAKE FIRST AND BREAK LAST.
 2. IF BELLS OF BIASED RINGER TAP WHEN DIALING FROM ANOTHER TELEPHONE ON THE LINE, REVERSE RINGER LEADS AT TERMINALS 15 AND 16 OF TRANSMISSION NETWORK (NOTE 3).
 3. WHEN SATY DIALS OR ANY SERVICE ARE USED, DO NOT REVERSE LINE OR RINGER LEADS, POLARITY OF LINE MUST BE MAINTAINED AS SHOWN IN TABLE A. SPOTTER SPRINGS OPERATE WHEN PULSING SPRINGS ARE CLOSED.
 4. IF NO DIAL IS USED, CONNECT YELLOW HOOKSWITCH LEAD TO TERMINAL 10 OF THE TRANSMISSION NETWORK.
 5. WHEN MESSAGE WAITING LAMP IS USED, CONNECT ACROSS TERMINALS 8 AND 10 OF TRANSMISSION NETWORK.
 6. LINE CORD AND CONNECTING BLOCK PROVIDED WITH DESK INSTRUMENT ONLY.
 7. USED WITH LIGHTED-DIAL VERSION ONLY.
 8. FOR ANY SERVICE, TIP PARTY IDENTIFICATION WHEN NO RINGER IS USED.
 - (a) FOR 2,800-OHM INDUCTIVE MARK, USE D-284886-A WIRED AS FOLLOWS:
BLACK LEAD TO TERMINAL 21
GRAY LEAD TO TERMINAL 9
RED LEAD-TAPE AND STORE
 - (b) FOR 3,000-OHM RESISTIVE MARK (DIAL-OFF NORMAL), REFER TO DRAWING H-885452.
 9. FIVE-CONDUCTOR LINE CORD AND TERMINAL BLOCK FURNISHED ON LIGHTED VERSION ONLY. THREE-CONDUCTOR LINE CORD FURNISHED ON ALL OTHER VERSIONS.
 10. BASE TERMINALS ID 15028-A) ARE INCLUDED ONLY IN THOSE TELEPHONES EQUIPPED WITH FACTORY OPTIONS THAT USE THEM.
 11. TAPE AND STORE UNUSED RINGER LEADS SEPARATELY.
 12. RINGER SHOWN CONNECTED FOR METALLIC (BRIDGED) RINGING.

Figure 7. Schematic Wiring Diagram of the Type 182A and 192A Telephones Equipped with a Rotary Dial.

Baseplate

3.18 The baseplate (item 31) may be completely disassembled by removing the four baseplate terminals (item 32) and the spring clip (item 33), and peeling off the cork pads (item 34) on the Type 182A telephone. The captive screw (item 2) on the Type 182A telephone and the hook lock (item 4) and screw (item 36) on the Type 192A telephone can also be removed. The cover plate (item 36) may be lifted out.

4. ASSEMBLY

Baseplate

4.01 A completely disassembled baseplate (item 31), Part No. D-470394-C, may be used for either the Type 182A or 192A telephones. A completely disassembled baseplate (item 31a), Part No. HD-470008-C, may be used only for the Type 192A telephone. To assemble the baseplate for the Type 182A telephone, proceed as follows:

- (a) Insert the spring clip (item 33).
- (b) Insert the four baseplate terminals (item 32) (for use only with the TCU, lighted rotary dial, and message waiting lamp versions).
- (c) Insert the captive housing screw (item 2)
- (d) Install the adhesive-backed cork pads (item 34).

4.02 To assemble the baseplate for the Type 192A telephone, proceed as follows:

- (a) Insert the spring clip (item 33).
- (b) Insert the four baseplate terminals (item 32) (for use only with the TCU, lighted rotary dial, and message waiting lamp versions).
- (c) Attach the hook lock (item 4) with the screw (item 35).

Rotary Dial Light Switch

4.03 To install the optional dial light switch (item 30), proceed as follows:

- (a) Slide the switch into the slots provided in the baseplate.
- (b) Connect the leads according to Figure 7 and Table 5.

Transmission Network

4.04 To install the transmission network (item 28), place it inside the baseplate (item 31 or 31a). Secure it to the baseplate using the two mounting screws (item 29).

Ringer

4.05 To install the ringer (item 25), proceed as follows:

- (a) Fold the ringer leads under the ringer base.

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- (b) Place the ringer in the vacant area near the bottom of the telephone. Orient the ringer over the ringer mounting holes with the gong near the left side (for the Type 192A telephone) or the bottom (for the Type 182A telephone) of the telephone.
- (c) Secure the ringer with the two self-tapping screws (item 26) and washers (item 26a).

NOTE: The Type 46 replacement ringers are shipped with two sets of screws. One set of screws is for use with the STYLELINE® telephone; the other set of screws is for use with the STARLITE telephone. Use the No. 6 x 7/16-inch pan head plastite screws (HD-765600-PP07) when installing the ringer in a STARLITE telephone.

- (d) Connect the ringer leads to the telephone circuitry according to Figure 7 or 8 and Table 5 or 6.
- (e) Connect the capacitor (item 27) to the transmission network.

Hookswitch Assembly

4.06 To install the hookswitch assembly, refer to Figures 3, 4, 7, 8, and 9 and Tables 5 and 6 and proceed as follows:

- (a) Position the buffer (item 22) under the left side or upper arm of the hookswitch lever (item 17).
- (b) On the Type 182A telephone only, place the plungers (item 21) on the upper side of the arms of the hookswitch lever.
- (c) Position the hookswitch spring and bracket assembly (item 19) over the retaining post and secure it with the screw.
- (d) Connect the hookswitch leads to the transmission network.
- (e) Insert the pins (items 20 or 20a) in the pivot hole of the hookswitch lever.
- (f) Position the hookswitch lever assembly in the slots in the retaining posts.
- (g) Hook the coil spring (item 16) between the spring clip and the hookswitch lever.

Line Cord

4.07 To install the line cord (item 15 or 15a) on the Type 182A telephone, proceed as follows:

- (a) Connect the leads to the transmission network and baseplate terminals according to Figures 7 or 8 and Tables 5 or 6 (depending on the type of service required).
- (b) Attach the line cord to the cord strain relief hook, and attach it to the baseplate.

Table 5. Ringing Options for the Type 182A and 192A Telephones, Equipped with a Rotary Dial.

	TYPE OF RINGING OPTION	TERMINAL BLOCK CONNECTIONS (NOTE 1)										TRANSMISSION UNIT TERMINALS						
		LINE CORD					INTERIOR WIRES			RESISTOR PLUG LEADS (NOTE 2)		RINGER LEADS				CAPACITOR LEADS		
		RED	GRN	YEL	BLK	BLU	RED	GRN	YEL			RED	GRN	BLK	BLU 2200 OHMS			
Desk Telephone	Standard Dial	Metallic (bridged) ringing	L1	L2	4G	3	5	L1	L2	4G	3	5	15	16	NC	NC	8	16
		Grounded (divided) ringing L2 (+ tip) to ground	L1	L2	4G	3	5	L1	L2	4G	3	5	16	9	NC	NC	8	16
		Grounded (divided) ringing L1 (- ring) to ground	L1	L2	4G	3	5	L1	L2	4G	3	5	15	16	NC	NC	9	16
	SATT Dial	Metallic (bridged) ringing	L1	L2	4G	3	5	L1	L2	4G	3	5	15	16	NC	NC	8	16
		Grounded (divided) ringing L2 (+ tip) to ground	L1	L2	4G	3	5	L1	L2	4G	3	5	8	16	NC	NC	9	16
ANI Service Tip Party (Note 3)	Desk	L1	L2	4G	3	5	L1	L2	4G	3	5	16	9	21	NC	6	16	
	Wall						(L1) 10	(L2) 8	(G) 9	B	A	16	9	21	NC	6	16	
Wall Telephone	Standard Dial	Metallic (bridged) ringing	Terminal blocks and line cords are not provided on wall telephones					(L1) 10	(L2) 8		B	A	15	16	NC	NC	8	16
		Grounded (divided) ringing L2 (+ tip) to ground						(L1) 10	(L2) 8	(G) 9	B	A	16	9	NC	NC	8	16
		Grounded (divided) ringing L1 (- ring) to ground						(L1) 10	(L2) 8	(G) 9	B	A	15	16	NC	NC	9	16
	SATT Dial	Metallic (bridged) ringing						(L1) 10	(L2) 8	(G) 9	B	A	15	16	NC	NC	8	16
		Grounded (divided) ringing L2 (+ tip) to ground						(L1) 10	(L2) 8	(G) 9	B	A	8	16	NC	NC	9	16
						Transmission Unit Terminals	Telephone Base Terminals	Transmission Unit Terminals										

- NOTES: 1. The Line cord and terminal block are provided with the desk version only.
2. Used with the lighted rotary dial version only.
3. For ANI service, tip party identification when no ringer is used, proceed as follows:
- (a) For 2,650-ohm inductive mark, use drawing D-284686-A, wired as follows:
 - (1) Black lead to terminal 21.
 - (2) Gray lead to terminal 9.
 - (3) Red lead tape and store.
 - (b) For 3,000-ohm resistive mark (dial off normal), refer to drawing H-885452.

Table 6. Ringing Options for the Type 182A and 192A Telephones, Equipped with 12C TCU.

TYPE OF RINGING OPTION		TYPE OF TELEPHONE	TERMINAL BLOCK CONNECTIONS									TRANSMISSION NETWORK TERMINALS						
			TRANSMISSION NETWORK TERMINALS					WALL TELEPHONE				RINGER LEADS					CAPACITOR LEADS	
			LINE CORD					INTERIOR WIRES										
			RED	GRN	YEL	BLK	BLU	RED	GRN	YEL	RED	GRN	BLK	BLU (2200 OHMS)				
	Metallic (bridged) ringing	Desk	L1	L2	4G	NC	NC	L1	L2	4G	15	16	NC	NC	8	16		
		Wall	See Note 1					10	8	9	15	16	NC	NC	8	16		
	Grounded (divided) ringing to L1 (- ring) ground	Desk	L1	L2	4G	NC	NC	L1	L2	4G	15	16	NC	NC	9	16		
		Wall	See Note 1					10	8	9	15	16	NC	NC	9	16		
	Grounded (divided) ringing to L2 (+ tip) ground	Desk	L1	L2	4G	NC	NC	L1	L2	4G	16	9	NC	NC	8	16		
		Wall	See Note 1					10	8	9	16	9	NC	NC	8	16		
ANI Service Tip Party See Note 2	Grounded (divided) ringing 2650-ohm identity	Desk	L1	L2	4G	NC	NC	L1	L2	4G	16	9	21	NC	6	16		
		Wall	See Note 1					10	8	9	16	9	21	NC	6	16		

- NOTES: 1. Line cord and terminal block provided with desk telephone only.
2. For ANI service – tip party. If no ringer is used, the D-284686-A inductor is required. Connect the black and gray leads of the inductor to terminals 21 and 9 of the transmission network.

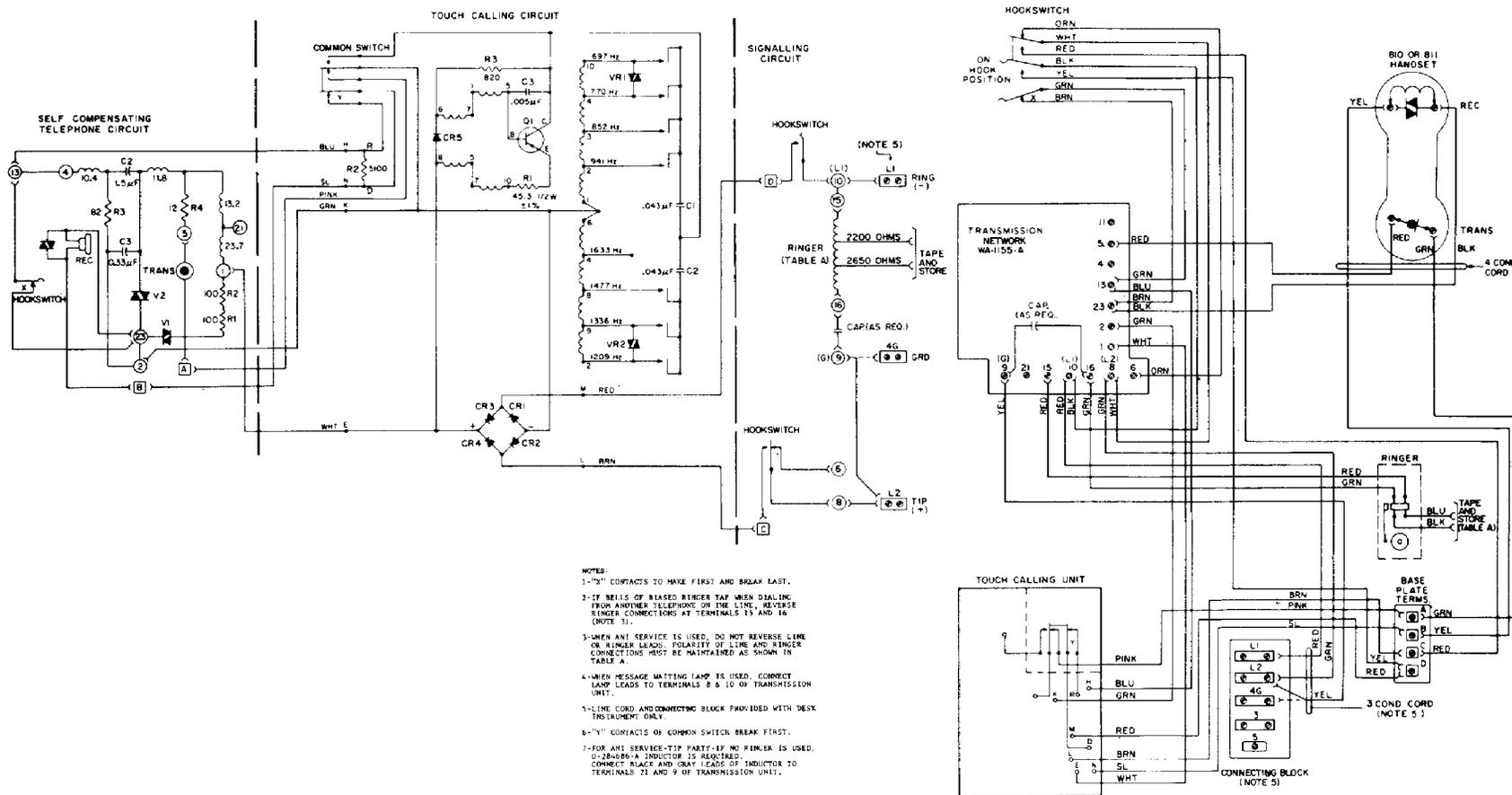


Figure 8. Schematic Wiring Diagram of the Type 182A and 192A Telephones Equipped with an LC Touch Calling Unit (TCU).

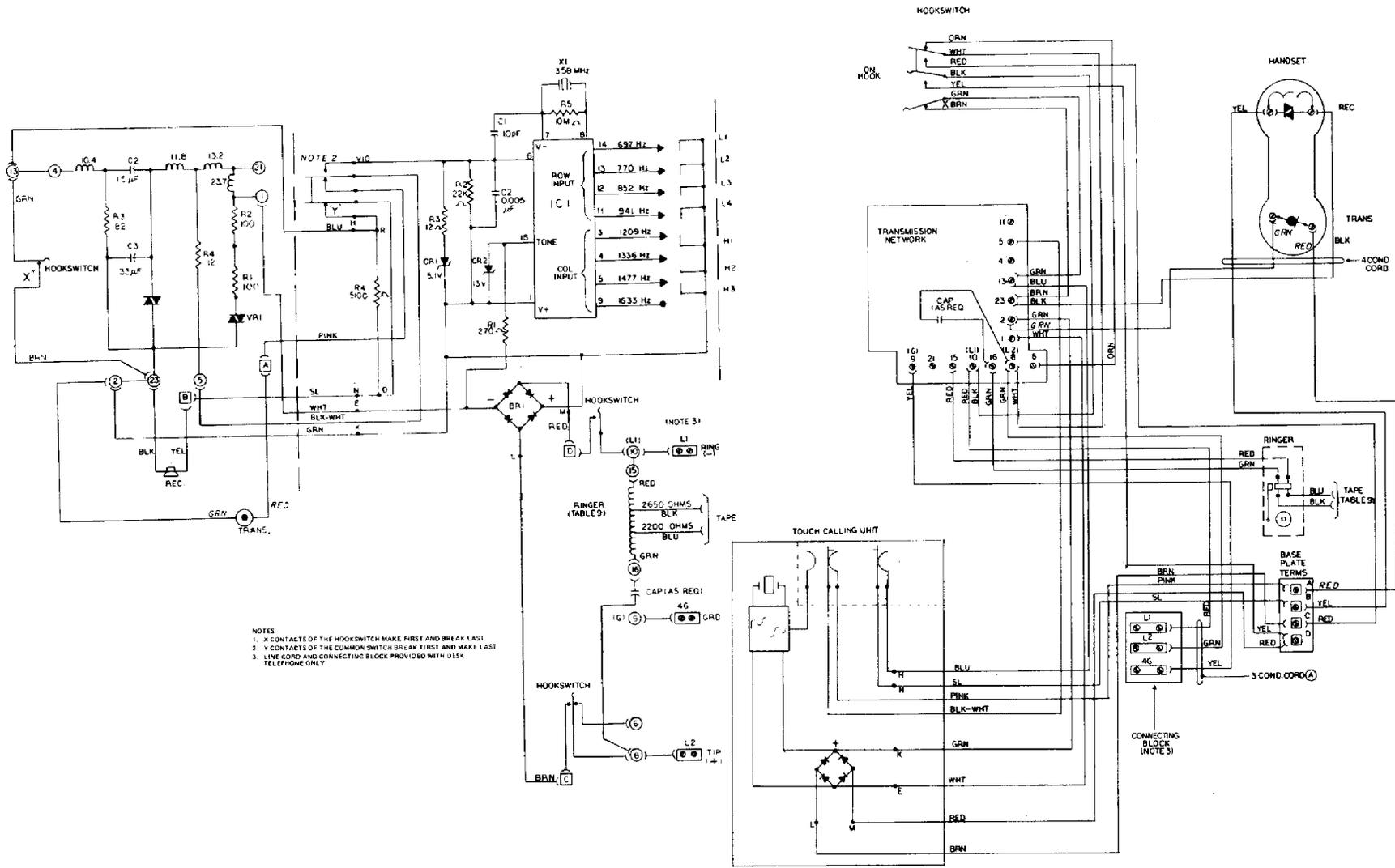


Figure 9. Schematic Wiring Diagram of the Type 182A and 192A Telephones Equipped with an Integrated Circuit TCU.

Handset

4.08 To install the handset (item 13), proceed as follows:

- (a) Connect the handset cord leads to the transmission network according to Figures 7, 8, or 9 and Tables 5 or 6 (depending on the type of service required).
- (b) Attach the strain relief hook to the baseplate.
- (c) Clamp the cord under the cord clamp (item 14).

Touch Calling Unit

4.09 To install the old-style TCU (item 9), proceed as follows:

- (a) Position the TCU through the opening in the housing from the inside.
- (b) Install the two mounting bars (item 12) as shown in Figure 10 (for the Type 182A telephone) or Figure 11 (for the Type 192A telephone). Note that the mounting bars have raised numbers on them. These bars are to be inserted so that the "1" indicating the top side of the bar is positioned at the top of the TCU, and that the "2" indicating the bottom side of the bar is positioned at the bottom of the TCU. The numbers should be visible when the adapter plate (item 11 of Figure 4) is removed.
- (c) Place the adapter plate into position over the TCU. Secure it as shown in Figure 12, using the panhead screws included in the housing kit. Install washers under the heads of the screws.

4.10 To install the Type 12C TCU (item 9), proceed as follows:

- (a) Position the TCU by passing it up through the rear of the housing.
- (b) Place the TCU adapter plate (item 11) into position on the housing as shown in Figure 4.
- (c) Install the mounting screws (item 10) as shown in Figure 4.
- (d) Connect the LCTCU leads according to Figure 8 and Table 6.
- (e) Connect the ICTCU leads as shown in Figure 9 and Table 6.

Rotary Dial

4.11 To install the rotary dial (item 5), refer to Figure 3 and proceed as follows:

- (a) Place the dial into position in the front opening in the housing.

- (b) Place the dial guard and mounting bracket (item 7) into position on the underside of the telephone housing, and install the two dial mounting screws (item 6).
- (c) Connect the dial leads to the telephone transmission network terminals according to Figure 7 and Table 5.

Housing

4.12 To install the housing (item 1) on the Type 182A telephone, refer to Figure 3 and proceed as follows:

- (a) Refer to Figure 6 and attach the wire clip (item 44) onto the TCU leads.
- (b) Depress the hookswitch lever and hold it down.
- (c) Slide the tab located on the left side of the housing onto the notch in the baseplate.
- (d) Lower the right side of the housing, and release the hookswitch lever.
- (e) Tighten the housing screw (item 2).

4.13 To install the housing (item 3) onto the Type 192A telephone, refer to Figure 4 and proceed as follows:

- (a) Refer to Figure 6 and attach the wire clip (item 44) on the TCU leads.
- (b) Place the hookswitch plunger up through the slot provided in the housing and hold it.
- (c) Slide the tab located on the top of the housing into the slot in the baseplate.
- (d) Lower the housing down until the hook lock (item 4) snaps into the notch in the bottom of the housing.

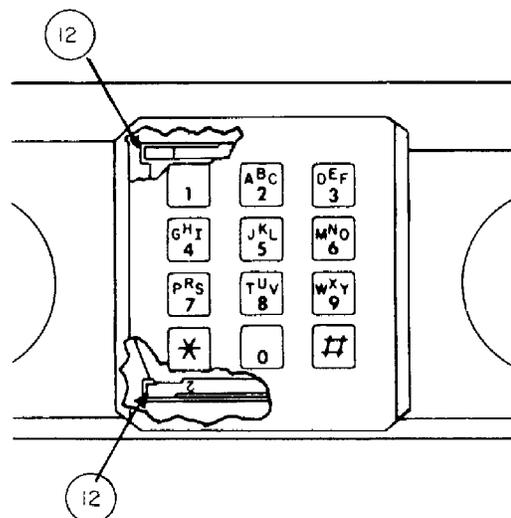


Figure 10. Type 182A Telephone Installation of the Old-Style TCU.

5. ADJUSTMENTS

5.01 This part applies only to the hookswitch assembly. For adjustment of telephones equipped with a rotary dial, refer to Section 997-300-500. For adjustment of telephones equipped with a TCU, refer to Sections 997-306-500 and 997-307-500.

5.02 Unless otherwise specified, all tension and clearance values are gauge-visually requirements.

Hookswitch Lever

5.03 The hookswitch lever must meet the following requirements:

- (a) The hookswitch lever must not bind at any point against the mounting posts in the baseplate or on the bearing pins.
- (b) The hookswitch lever arms must be approximately parallel to each other in all planes.

Hookswitch Springs

5.04 The hookswitch spring assembly must be adjusted to meet the following requirements:

- (a) Twin contacts of a spring combination must make or break within 0.002 inch of each other, as gauged visually.
- (b) Make springs, of single-make combination, must have a minimum follow of 0.012 inch with the

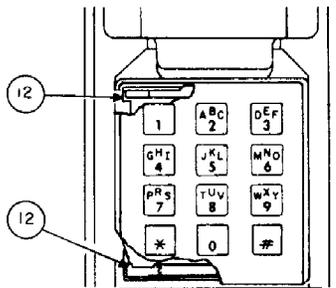


Figure 11. Type 192A Telephone Installation of the Old-Style TCU.

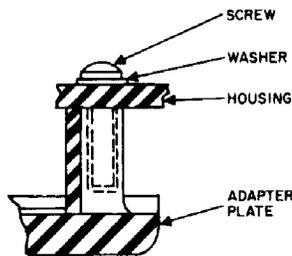


Figure 12. Installation of the Old-Style TCU Adapter Plate to the Housing.

- (c) The make spring of the break-before-make combination must have a minimum follow of 0.006 inch with the hookswitch in the ring position. Contact gap in the talk position must be a minimum of 0.015 inch.
- (d) Make springs must have a minimum follow of 0.012 inch with the hookswitch in the ring position. Contact gap in the talk position must be a minimum of 0.015 inch.
- (e) With the hookswitch in the talk position, there must be minimum perceptible clearance between the actuating cam and the formed lever spring. Clearance between the first armature spring and No. 2 lever spring buffer with the hookswitch in the talk position must be a minimum of perceptible and a maximum 0.015 inch.
- (f) The break spring of the break-make combination must break last. This requirement is considered met if not less than 0.002 inch of contact separation is visible between the first pair of break contacts when the other pair has just opened.
- (g) All breaks must make before the single-make combination breaks.
- (h) With the hookswitch in either the talk or ring position, there must be a minimum clearance of 0.010 inch between springs not intended to make contact.
- (i) In traversing from the talk to the ring position, the last make contact must have been made when the actuating cam is 0.125 inch above the baseplate stop.

NOTE: For purposes of definition, break springs are closed with the hookswitch in the talk (off-hook) position, and make springs are closed with the hookswitch in the ring (on-hook) position.

Restoring Spring

5.05 The restoring (coil) spring is to be adjusted so that the following requirements are met:

- (a) With the hookswitch in the talk position, the restoring spring causes the hookswitch lever to rest against its stop. The top of the step in the lever arm at the spring assembly side should be 0.940 inch maximum above the baseplate inner surface.
- (b) The tension in the restoring spring is to be such that the lever does not deflect from the talk position sufficiently to make the first make contact when 30 grams are applied to the top of the step of either lever arm, but deflects sufficiently to make the first make contact when 70 grams are applied.
- (c) With the housing of the Type 182A telephone in place, the plungers must not strike the housing.

5.06 When the handset is placed on-hook, the handset does not float free.