

GTE AUTOMATIC ELECTRIC
TYPE 980 STYLELINE TM ROTARY DIAL TELEPHONE SET
DESCRIPTION, INSTALLATION AND MAINTENANCE

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from the binder; replace with Issue 3. New or revised material is indicated by marginal arrows.

2. DESCRIPTION

2.01 The STYLELINE telephone set dial-in-handset is similar in size and shape to the Touch Calling handset version. Both handsets are interchangeable with either desk or wall base without any modification.

2.02 When the STYLELINE telephone set is used as a desk set, a Type 980 (NC 980) handset (see Figure 1) is combined with a Type 981 (NC 981) desk base (see Figure 2). For wall service the Type 980 handset is combined with a Type 982 (NC 982) wall base (see Figure 3). Each module is arranged for plug-in cord connection. A retractile handset cord, separately packaged, is enclosed in the carton with the handset. Similarly, a line cord and connecting block are enclosed with each desk base.

2.03 The STYLELINE telephone set is available in the following nine colors: ebony, beige, avocado, ivory, light green, light yellow, light pink, white, and blue to match or harmonize with the customer's decor.

Optional Equipment

2.04 A receiver amplifier, Proctor and Associates Company P-0446, can be installed into the telephone set to raise the output of the receiver for users with a hearing impairment. The receiver amplifier boosts the hearing level up to 19 dB power gain. The power gain is adjustable externally. The receiver amplifier consists of a printed circuit card and slide bar potentiometer connected electrically, two 4-40 x 5/16 inch screws, two number 4 fiber washers, one 4-40 x 1/4 inch nylon screw and one number 6 x 1/32 fiber washer.

3. PRE-INSTALLATION

Installing Receiver Amplifier

3.01 If the receiver amplifier is to be used, it can be installed either at the repair shop prior to

1. GENERAL

1.01 This section covers the description, installation, and field maintenance of the GTE Automatic Electric Type 980 STYLELINE Telephone Set (Figure 1).

1.02 This section is reissued to incorporate changes and to include information on the optional receiver amplifier kit. Remove Issue 2

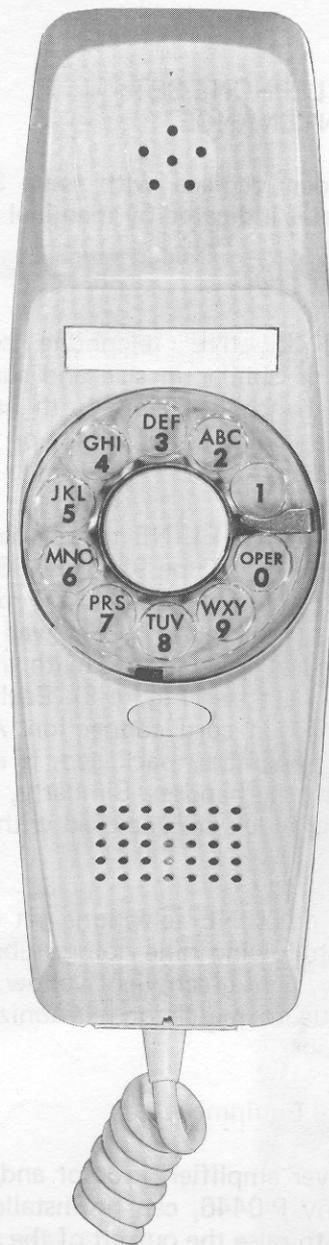


Figure 1. Type 980 Handset.

bringing the telephone set to the customer's premises, or on the customer's premises. Use the following procedures to install the receiver amplifier (Figure 4):

- (1) Remove the handset shell.
- (2) Cut a slot in the receiver end of the lower housing to accommodate the protruding stem of the receiver amplifier slide bar potentiometer. The slot should be 1-9/16 inches wide and one-eighth inch deep.

- (3) Remove the two transmission unit mounting screws and lift the transmission unit up to access the receiver terminal screws.
- (4) Remove the two dial mounting bracket screws. Place the number 4 fiber washers and the printed circuit card of the receiver amplifier on the dial mounting bracket, and fasten with the two 4-40 x 5/16 inch screws as shown in Figure 4.

Location

3.02 In locating the telephone set, be guided by the customer's wishes insofar as installation requirements and other provisions of these practices permit. If the customer's wishes cannot be followed, explain the reason to the customer. Take care to ensure that the location will afford adequate ringer sound intensity throughout the area to be served.

Ringer Selection

3.03 All bases are assembled at the factory with a Type 46 straight line ringer (D-56626), which has four coil terminals for tip party service in ANI offices; however, a base without the ringer can be obtained if the customer desires.

3.04 For frequency ringing stations, use an external ringer box (and a D-284686-C inductor for second party identity in offices requiring 1000 ohm inductive mark).

Wiring

3.05 Run standard inside-outside (GT-4) wire from the protector block to the approximate vicinity of the desired station location. For desk sets, mount the connecting block on a firm supporting surface in a place where the line cord can provide sufficient flexibility of telephone set movement. When making connections to existing wire, make sure the wire conductors are identifiable by the standard colors.

4. INSTALLATION

4.01 Installation of the STYLELINE telephone set consists of stamping the number card, connecting optional ringer wiring, interconnecting

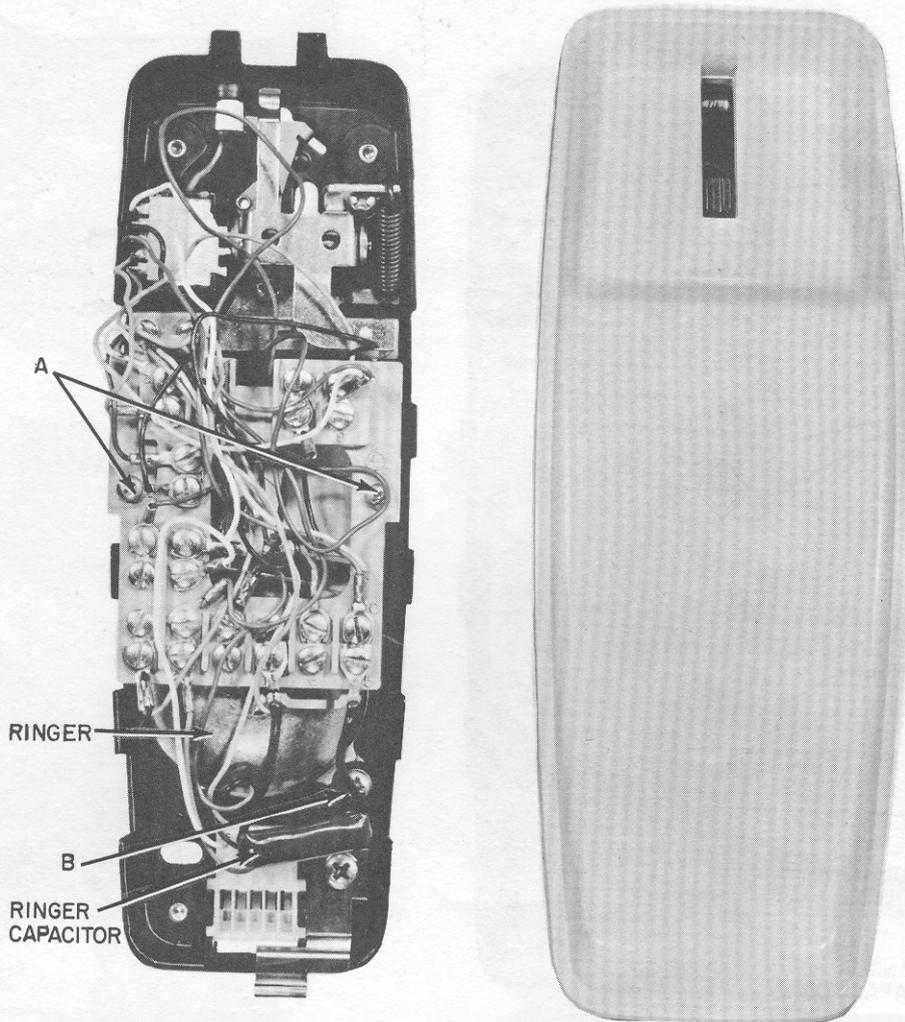


Figure 2. Type 981 Desk Base and Housing.

the handset and base by plugging in the cord, and making the line connection. The following paragraphs present these procedures in detail.

Stamping Number Card

4.02 Perform the following steps to stamp the number card:

- (1) Insert the appropriate finger plate removal tool in the hole in the number card cover.
- (2) Bow the cover upward (only as much as necessary) by applying pressure toward the center.
- (3) Pull the cover up and out.

- (4) Remove and stamp the number card.
- (5) Replace the card and cover.

Ringer Wiring

4.03 The desk or wall bases are wired at the factory as shown in Figure 9. During the base installation make the necessary ringer wiring changes according to Tables A or B in Figure 9 when required.

Handset Cord Connection

- 4.04 To connect the handset cord (Figure 5):
- (1) Insert the forked larger keyed plug of the cord into the keyed receptacle in

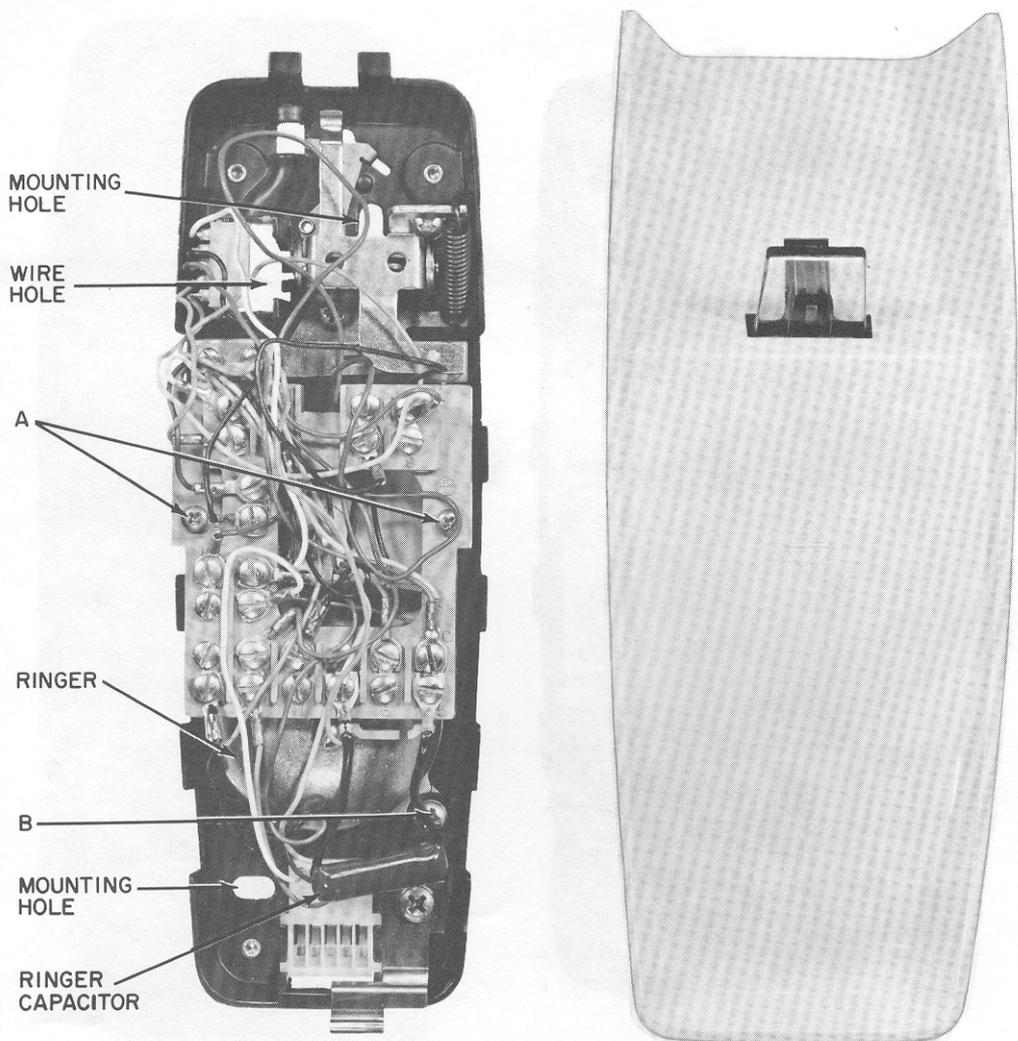


Figure 3. Type 982 Wall Base and Housing.

the handset. Push in until the locking tab snaps locked.

NOTE: To correct the loose fit that in some cases exists between the handset cord connector and the handset, insert pins (HD-370018-A) into the strain relief bushing as shown in Figure 6.

- (2) Insert the smaller keyed plug of the cord into the keyed receptacle in the telephone base. Push in until the locking tab snaps locked.

Line Cord Connection

4.05 A line cord is furnished only with the Type 981 desk base. To connect the line cord to the base, proceed as follows:

- (1) Insert the keyed plug of the line cord into the keyed receptacle on the under side of the telephone base.
- (2) If the line cord retainer tab is across the S type cord retaining slot, insert a suitable tool into the circular portion of the keyhole slot on the under side of the base, press the cord retaining tab up about one-eighth inch, and move it toward the small end of the keyhole slot.
- (3) Slide the cord into the S type cord retaining slot in the under side of base. Push the line cord retaining tab in the direction of the cord retaining slot until it locks the cord in position.

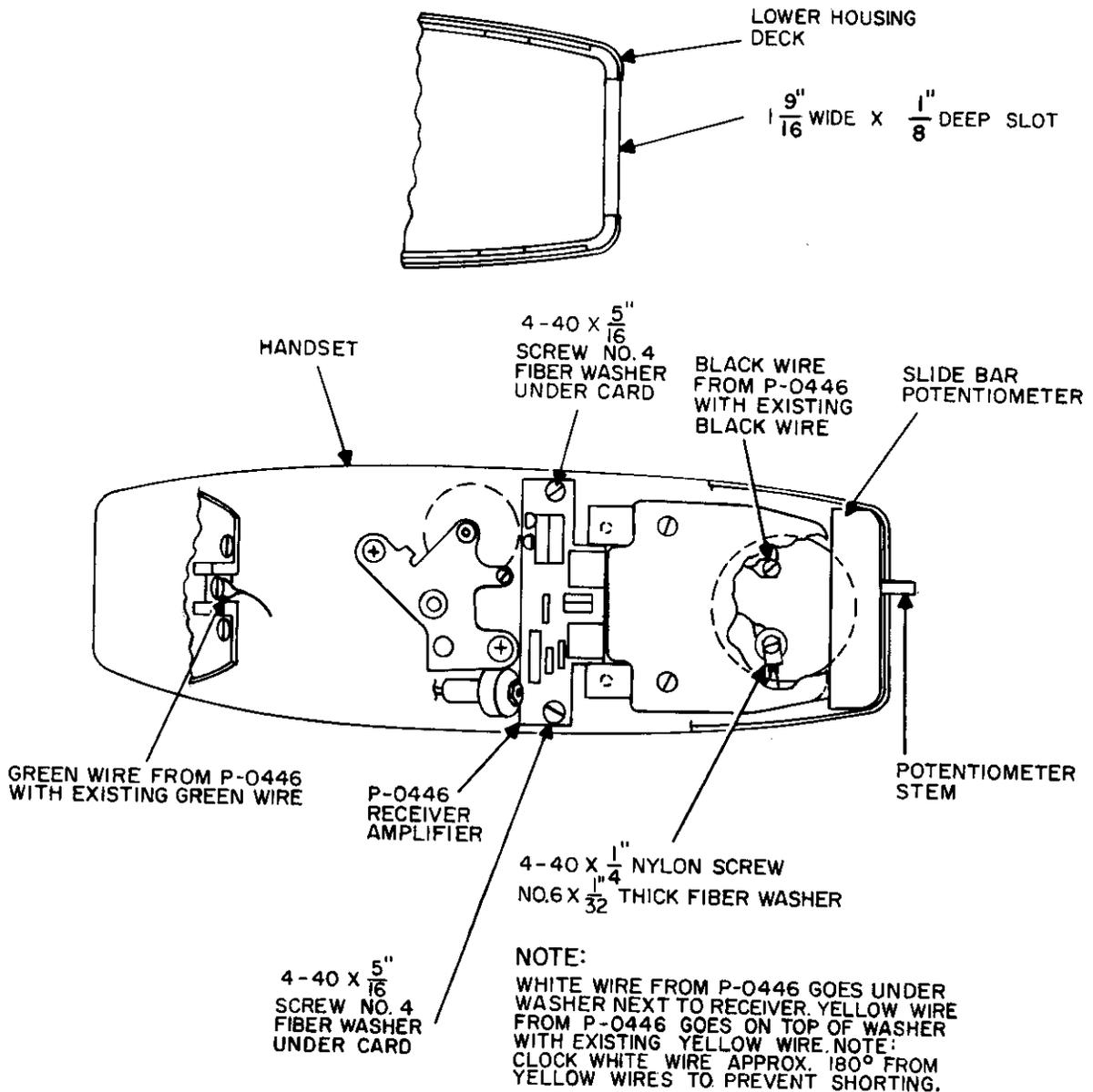


Figure 4. Installation - Receiver Amplifier.

Station Wire Connection

4.06 Perform the following steps to connect the line to the Type 982 wall base:

- (1) After installing concealed line wiring, allow enough slack in the wire to connect to the terminal board.
- (2) Pass the wire through the wire hole in the top left hand side of the base (see Figure 3).

- (3) Mount the base to the wall utilizing the keyhole slot above the hookswitch and the horizontal slot near the handset cord jack (see Figure 3 for mounting holes). Use two number 10 screws.
- (4) Connect the line wire leads to the terminal board screw terminals. See Table A in Figure 9 for wiring connections.

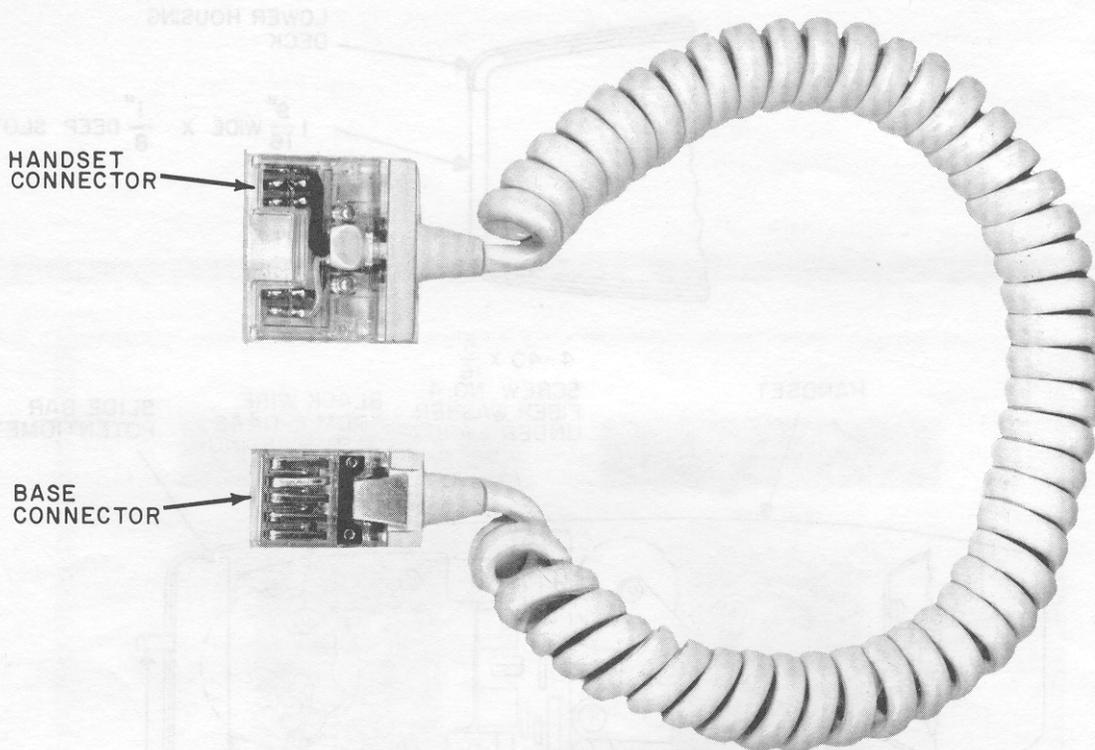


Figure 5. Handset Cord.

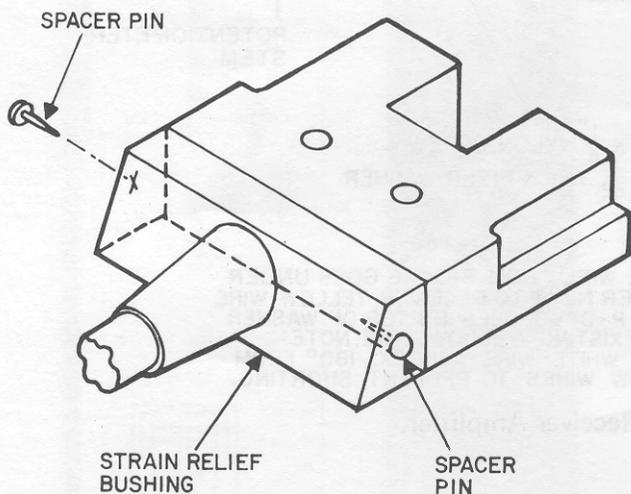


Figure 6. Inserting Spacer Pins into Handset Cord.

4.07 To connect the Type 981 desk base line cord to the Type 15 terminal block, proceed as follows:

- (1) Connect the green, yellow, and red wires per Table B in Figure 9.
- (2) Terminate the white and black wires at terminals 5 and 3, respectively (these leads may be used in the future).

Testing

4.08 Call the test desk operator and note if any gong tap is present when dialing. If gong tap is present, reverse the ringer lead, except when the ringer winding is used for 2650 ohm ANI service.

NOTE: Have the test desk operator ring the installed telephone. Check the reproduced quality of the operator's voice. If everything checks out, the installation is complete. If a problem exists, refer to Part 5 for replacement information and Figure 9 for wiring data.

Operation

4.09 Instruct the customer in the proper operation and use of the instrument. Stress the following points:

- (a) Moving the dial finger stop to the detent point is necessary, not only when dialing 1 but also when dialing any other digit. The fingerwheel must always be rotated until the finger stop covers the letter V on the number plate.

- (b) The recall button is like a hookswitch plunger. If pressed during a conversation, it may cause disconnection. In addition, point out the method of using the upper corners of the Type 982 base as an off-hook handset rest when it is necessary to leave the telephone set during a call.

Cleanup

4.10 Before leaving the customer's premises, make sure that the installation area is free of all wire clippings, cartons, bags, and any other debris resulting from the installation.

5. FIELD MAINTENANCE

5.01 Due to the simplicity of the STYLELINE telephone set, all components can be easily replaced. After troubleshooting and determining the defective component, refer to the following paragraphs for replacement information. Whenever trouble is isolated to the dial-in-handset telephone instrument, replace the handset.

Transmitter

5.02 Perform the following steps to replace the transmitter in the handset:

- (1) Remove the number card cover by performing Steps 1, 2, and 3 of Paragraph 4.02.
- (2) Remove the number card to gain access to the two handset shell retaining screws.
- (3) Remove the two retaining screws.
- (4) Remove the handset shell.
- (5) Remove the four retaining screws (B, in Figure 7) and remove the terminal tie points.
- (6) Pull the transmitter cup up and out, and remove the transmitter.
- (7) Replace the transmitter by reversing the preceding procedure.

Receiver

5.03 Perform the following steps to replace the receiver:

- (1) Perform Steps 1 through 4 of Paragraph 5.02.
- (2) Remove the two screws (A, in Figure 7) and swing the transmission unit over.
- (3) Remove the two retaining screws from the bracket and the two screws retaining the two washers to remove the receiver.
- (4) Disconnect the two receiver wires.
- (5) Replace the receiver by performing the reverse of the preceding procedure.

Type 981 Base Housing

5.04 Perform the following steps to remove or replace the base housing:

- (1) Remove the captive screw on the under side of the base.
- (2) Lift up the housing and push it forward toward the hookswitch.
- (3) Replace the housing by performing the reverse of the above procedures.

Type 982 Base Housing

5.05 Perform the following steps to remove or replace the base housing:

- (1) Push in the spring metal tab in the slit in the bottom on the housing.
- (2) Pull the housing up and out.
- (3) Replace the housing by performing the reverse of the above procedures.

Handset Cord

5.06 Perform the following to replace the handset cord (Figure 8):

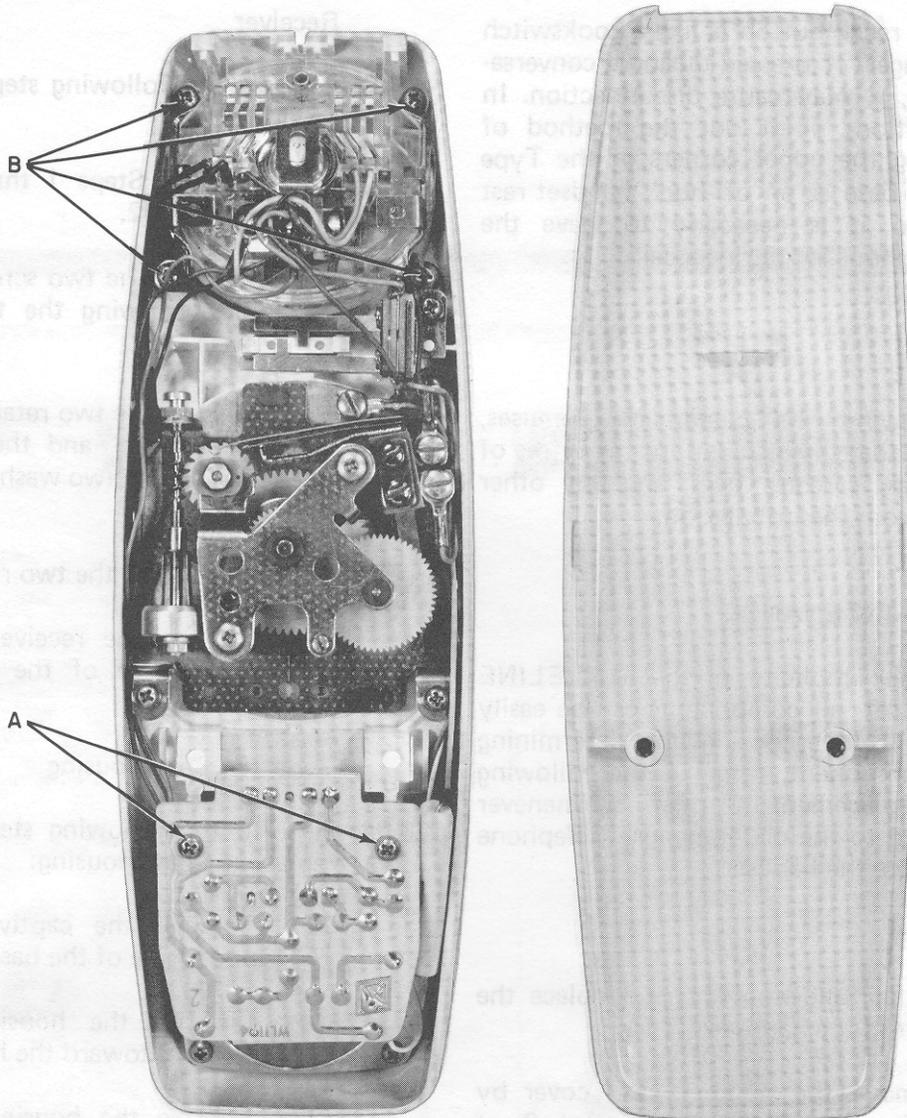


Figure 7. Type 980 Handset with Shell Removed.

- (1) Insert the appropriate finger plate removal tool in the cord slot and push the metal tab down toward the cord.
- (2) Pull the cord out.
- (3) To connect, orientate the new cord plug connecting tabs and push in until the locking tab snaps locked.
- (2) Remove the two screws (A, in Figure 2 for Type 981 or in Figure 3 for Type 982), and swing the terminal board over.
- (3) Remove the ringer retaining screws (B, in Figure 2 or 3, as applicable).
- (4) Place the new ringer with grommets in place in its proper location on the base plate aligning mounting holes and secure with the three screws provided.
- (5) Replace the terminal board and screws.
- (6) Replace the housing.

Type 46 Ringer

5.07 Perform the following to replace the Type 46 ringer:

- (1) Perform the procedure in Paragraph 5.04 or 5.05 as applicable.

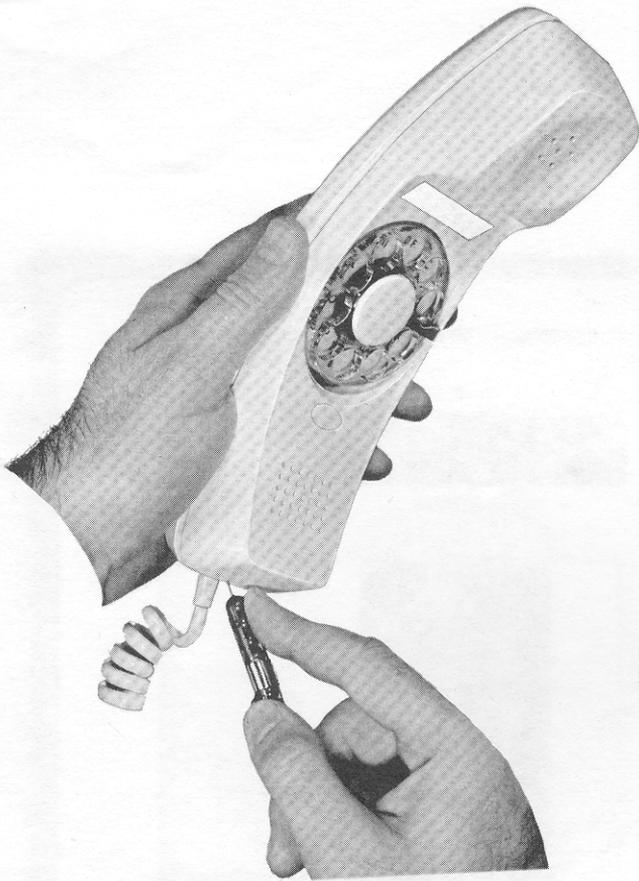


Figure 8. Removal of Handset Cord.

Line Cord

5.08 Perform the following steps to replace the line cord in the Type 981 desk base:

- (1) Place the appropriate finger wheel removal tool or a small screwdriver in the keyhole slot under the base.

- (2) With the finger wheel removal tool, push the line cord retainer tab up about one-eighth inch and push towards the small end of the keyhole slot.
- (3) Using the same tool, push in the metal retaining tab on the plastic connector on the end of the line cord.
- (4) Pull the connector out by the cord.
- (5) Orientate the new cord plug connector tabs and push in until the locking tab snaps locked.
- (6) Hold the line cord shown in the S type slot.
- (7) Push the line cord retaining tab closed with the finger wheel removal tool in the keyhole slot under the base.

Radio Frequency Interference Correction

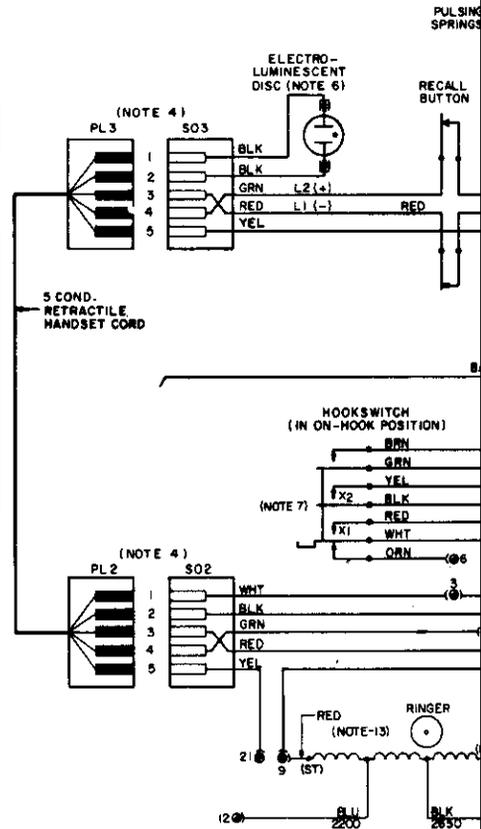
5.09 If the telephone set is installed in the vicinity of a broadcast transmitter, it may be subject to radio frequency interference due to demodulation. The source of RFI may be within any of the telephone set components or in a line connection external to the set. To determine whether the source of RFI is external or internal, refer to Section 471-150-200 and perform the test procedure contained therein. If the RFI source is determined to be external, perform corrective measures contained therein under the part entitled "RFI Corrective Measures - External." If the RFI source is determined to be internal, perform corrective measures contained therein under the part entitled "RFI Corrective Measures - Internal."

TABLE A
FOR WALL TELEPHONE
METALLIC OR GROUND RINGING, PARTY IDENTIFICATION

TYPE OF RINGING OPTION	TYPE OF DIAL	TELEPHONE BASE (TERMINAL BLOCK & LINE CORDS ARE NOT PROVIDED ON WALL TEL.)											TYPE OF IDENT.		
		RINGER LEADS				CAP. LEADS			INTERIOR WIRES					RESISTOR PLUG LEADS	
		BLU	RED	BLK	GRN	H	J	RED	GRN	YEL					
METALLIC (BRIDGED)	STANDARD	12	7	17	16	16	15	(L1) 10	(L2) 8	(L2) 8	3	1	NONE		
GROUND (DIVIDED) RING PTY.	STANDARD	12	9	17	16	16	15	(L1) 10	(L2) 8	9	3	1	NONE		
GROUND (DIVIDED) TIP PARTY NOTE 9	STANDARD	12	9	17	16	16	15	(L2) 8	(L1) 10	9	3	1	NONE		
METALLIC (BRIDGED) 1ST OR 2ND PARTY	STANDARD	12	7	17	16	16	15	(L1) 10	(L2) 8	(L2) 8	3	1	NONE		
METALLIC (BRIDGED) 2ND PARTY NOTE 10	STANDARD	12	7	17	16	16	15	(L1) 10	(L2) 8	9	3	1	1000 OR 2650 OHMS (INDUCTIVE) (NOTE 17)		
METALLIC (BRIDGED) 2ND PARTY NOTE 11	STANDARD	12	7	17	16	16	15	(L1) 10	(L2) 8	9	3	1	3000 OHMS (RESISTIVE)		
GROUND (DIVIDED) TIP PARTY NOTE 11	STANDARD	12	9	17	16	16	7	(L1) 10	(L2) 8	9	3	1	3000 OHMS (RESISTIVE)		
GROUND (DIVIDED) TIP PARTY NOTE 12	STANDARD	21	9	17	16	16	6	(L1) 10	(L2) 8	9	3	1	2650 OHMS (INDUCTIVE) (NOTE 16)		

TABLE B
FOR DESK TELEPHONE
METALLIC OR GROUND RINGING, PARTY IDENTIFICATION

TYPE OF RINGING OPTION	TYPE OF DIAL	TELEPHONE BASE											TYPE OF IDENT.
		TERM. BLOCK NOTE 14			RINGER LEADS				CAP. LEADS				
		LINE CORD LEADS	RED	GRN	YEL	RED	BLK	GRN	BLU	H	J		
METALLIC (BRIDGED)	STANDARD	L1	L2	L2	9	17	16	12	16	15			NONE
GROUND (DIVIDED) RING PTY.	STANDARD	L1	L2	4G	9	17	16	12	16	15			NONE
GROUND (DIVIDED) TIP PARTY NOTE 9	STANDARD	L2	L1	4G	9	17	16	12	16	15			NONE
METALLIC (BRIDGED) 1ST OR 2ND PARTY	STANDARD	L1	L2	L2	9	17	16	12	16	15			NONE
METALLIC (BRIDGED) 2ND PARTY NOTE 10	STANDARD	L1	L2	4G	7	17	16	12	16	15			1000 OR 2650 OHMS (INDUCTIVE) (NOTE 17)
METALLIC (BRIDGED) 2ND PARTY NOTE 11	STANDARD	L1	L2	4G	7	17	16	12	16	15			3000 OHMS (RESISTIVE)
GROUND (DIVIDED) TIP PARTY NOTE 11	STANDARD	L1	L2	4G	9	17	16	12	16	7			3000 OHMS (RESISTIVE)
GROUND (DIVIDED) TIP PARTY NOTE 12	STANDARD	L1	L2	4G	9	17	16	21	16	6			2650 OHMS (INDUCTIVE) (NOTE 16)



- NOTES:
- "X" DIAL CONTACTS TO MAKE FIRST AND BREAK LAST, AND MUST REMAIN CLOSED WHEN PULSING SPRINGS OPERATE.
 - WIRE LINE CORD, OR INTERIOR WIRES, AND RINGER PER TABLE A OR B.
 - PINS OF PL2 CONNECT TO CORRESPONDING PINS OF
 - LEAD-OUT CONNECTIONS ON TRANSMISSION UNIT CA
 - ELECTRO-LUMINESCENT DISC OPERATES FROM 115 V LINE THROUGH CURRENT LIMITING RESISTOR PLUG.
 - HOOKSWITCH X₁ CONTACTS BREAK AFTER X₂ CONTACTS BREAK.
 - IF RINGER TAPS DURING DIALING, REVERSE RED AND GREEN RINGER LEADS, EXCEPT WHERE RINGER WINDING IS USED FOR 2650 OHM ANI SERVICE (SEE NOTE 12).
 - FOR GROUND (DIVIDED) RINGING ON THE *TIP SIDE OF THE LINE, WHEN A STANDARD DIAL IS USED, REVERSE TIP AND RING LEADS OF LINE CORD. (EXCEPT ANI SERVICE).

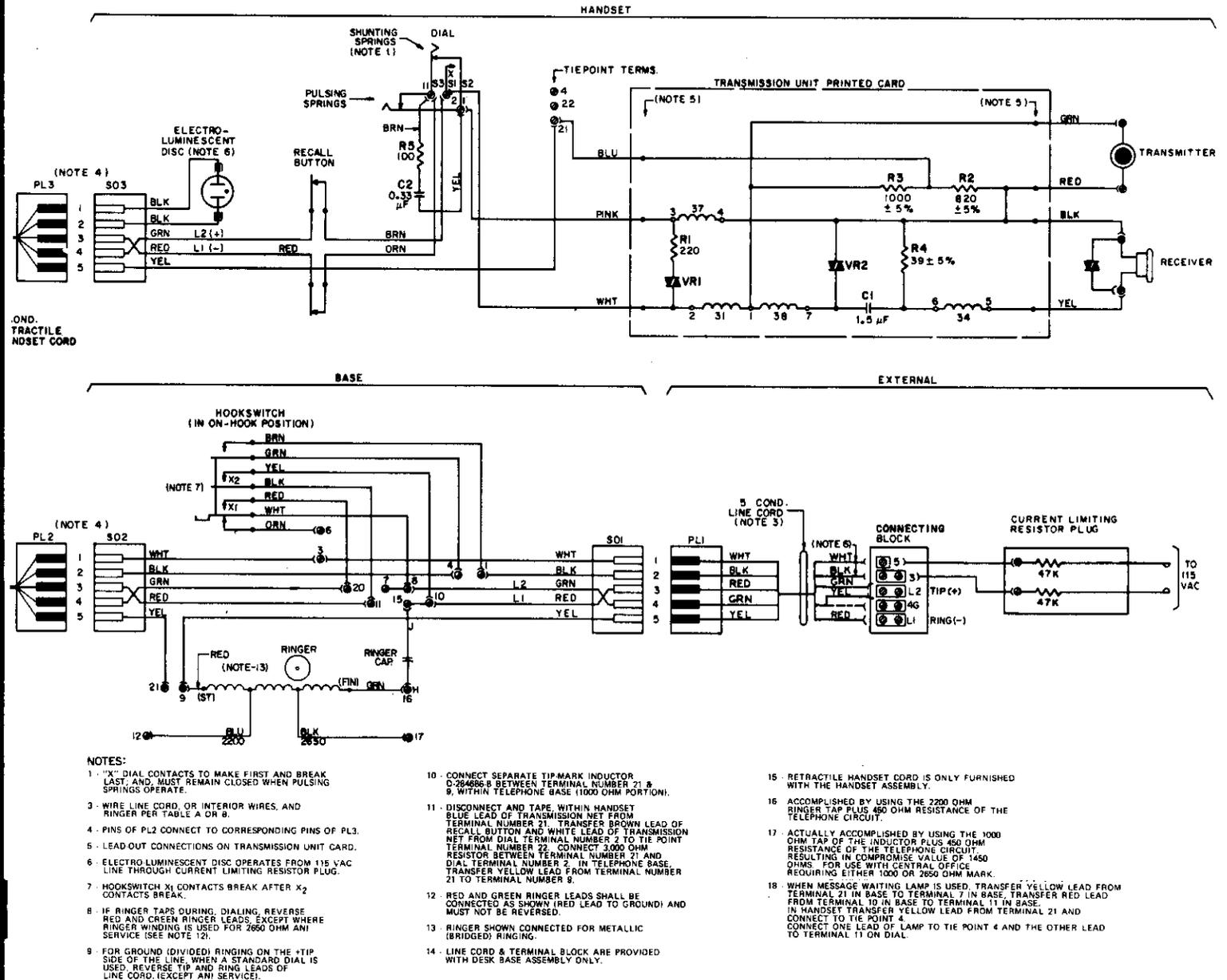


Figure 9. Wiring Diagram for STYLELINE Telephone.