TYPE 80E TELEPHONE SET
FOUR-WIRE AND SUPERVISED-LINE SERVICE VERSIONS

CONTENTS PAGE

1. GENERAL

1.01 This section describes and provides installation and field maintenance information for the Type 80E Telephone Sets for four-wire and supervised-line services (HC-813 and HC-818, respectively). These telephones are similar in appearance and construction to the standard Type 80E telephones.

1.02 This section is reissued to update the text to current standards. Marginal arrows are used to identify new material. Remove the previous issue of this section from the binder or microfiche file and replace it with this issue.

2. DESCRIPTION

2.01 These telephones are furnished with a retractile cord and a spade-terminated line cord. The four-wire version uses a four-conductor silver-satin line cord and the supervised-line-service version uses a three-conductor transparent aluminum line cord. Both versions of the telephone use the Type 48 straight-line ringer.

2.02 The telephone (Figure 1) is approximately 9-1/4 inches long, 8-1/2 inches wide, and 5 inches high with the handset in the cradle. The HC-813 telephone is available in black and the HC-818 telephone is available in five standard colors.

2.03 The telephone can easily be converted from rotary dial usage to Touch Calling Unit (TCU) usage but only for the four-wire service (HC-813 telephone), or vice versa, by means of a common mounting bracket and transmission network. The housing is constructed of high-strength plastic and offers one-screw mounting. Figure 2 shows the telephone with the housing removed.

2.04 The rotary-dial version of the telephone is equipped with a regular Type 52 dial or a dial blank. A clear faceplate and either a standard-colored facemat with standard lettering and 1 to 0 numbering or a clear facemat with dial nomenclature and a customer-supplied decorator matting can be used. There are five standard facemats supplied, one for each of the five housing colors, and eight optional colored facemats. Two clear facemats are also available. Refer to part 5 for information on the less-dial conversion.

2.05 The telephone for four-wire service (HC-813) is used for remote extensions, WATS lines, and where service is provided from a central office other than the central office that normally serves that location. The telephone is available with either ring-on-transmit pair or ring-on-receive pair.

2.06 The telephone for supervised line service (HC-818) is used in military installations to provide communication within an area to which access is highly restrictive and in other applications such as law enforcement agencies, industries, and banks.

2.07 When the TCU (D-840001) is used, a clear plastic faceplate snaps over it along with a Touch Calling facemat. The same facemat color choices available for the rotary dial versions are available for the TCU. Both the rotary dial and TCU are bayonet-mounted into their shock absorbers for quick installation and removal.

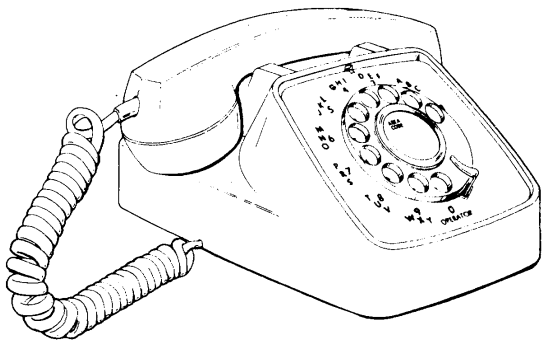
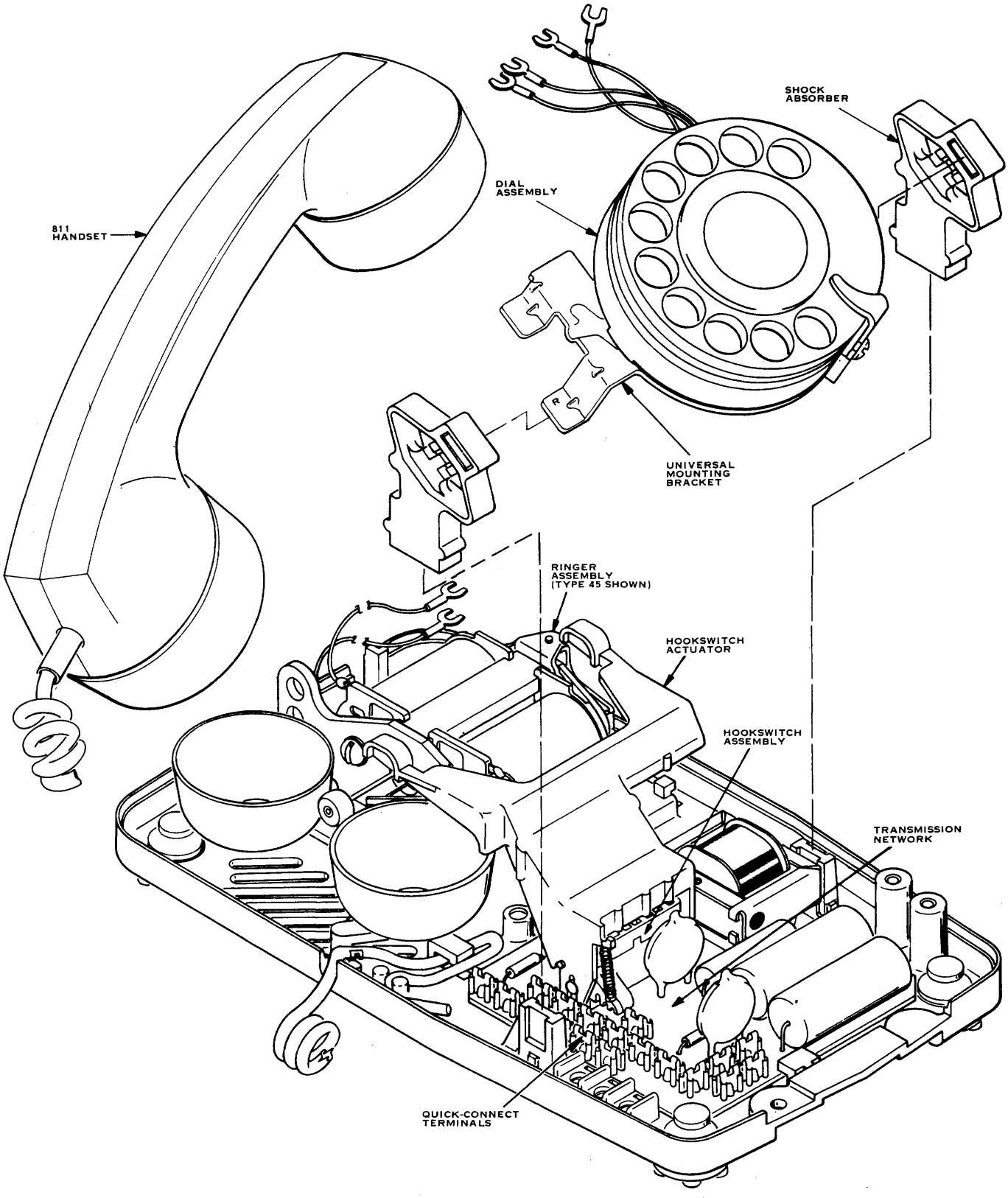


Figure 1. Type 80E Telephone.



→ Figure 2. Type 80E Telephone with Housing Removed.

2.08 The new transmission network (HB-1017-A) is standard with all HC-813 and HC-818 series telephones. This transmission network has quick-connect terminals for fast connection and disconnection of electrical components. The telephone sets can be converted from TCU to rotary dial usage or vice versa by addition or removal of straps and minor rewiring. The hookswitch assembly is an integral part of the transmission network.

3. INSTALLATION

3.01 Place the telephone on a table or desk as specified by the customer. Mount the terminal block in an inconspicuous location on a wall or desk within 5 feet of the telephone set to allow connection of the line cord. Slip the cord holder over the center post of the terminal block. Check the polarity of the line wires before making any electrical connections. When inserting spade-terminated leads into their receptacles, caution must be exercised. The receptacles are manufactured for spade tips 0.016 inch in thickness. Refer to Section 997-014-810 when necessary for the tool and method used for reforming these receptacles.

3.02 Connect the telephone line cord and interior wires referring to Figure 3 through 7 as applicable.

4. FIELD MAINTENANCE

4.01 Maintenance of the telephone is normally limited to the cleaning and replacing of components. The components that are normally replaceable on the customer's premises are the TCU, the dial assembly, the ringer, the handset, and the line cord. Certain conversions can be done on the customer's premises but should normally be done in the shop. The following paragraphs provide the procedure for performing this maintenance.

NOTE: When inserting the spade-terminated leads into the quick-connect terminals, use terminal insertion tool BT-900493-SP (Figure 8). If a receptacle requires resizing, use receptacle adjusting tool CT-900514-SP. (refer to Section 997-014-810).

Faceplate and Facemat Removal

4.02 To remove the dial or Touch Calling faceplate and/or facemat, proceed in the following sequence:

(a) Push the faceplate holding clip up with the left thumb and hold it.
(b) With a paper clip or other similar object, lift the faceplate and facemat up and out.
(c) Replace the faceplate and facemat by snapping them into the housing slot and under the faceplate holding clip.

NOTE: The faceplate and facemat should be removed before housing removal to ensure that the facemat will not be torn.

Housing Removal

4.03 To remove the housing, carefully proceed as follows:

(a) Remove the faceplate and facemat.
(b) Loosen the rear lockup screw.
(c) Place the front of the telephone set approximately 2 inches over the edge of a desk or table.
(d) Lift the rear of the housing to an angle of approximately 25 or 30 degrees (about 2 inches) (Figure 9).
(e) Rotate the housing clockwise, dropping the right front corner and raising the left front corner.
(f) Continue rotating the housing while pulling it forward and off the telephone set.

Replacement of Rotary Dial Assembly

4.04 To replace the rotary dial assembly in the telephone, proceed in the following sequence:

(a) Remove the faceplate, facemat, and housing.
(b) Disengage the dial-assembly shock absorbers from their mounting posts.
(c) Disconnect the dial leads from the transmission unit.
(d) Remove the two dial mounting bracket screws and remove the dial assembly from the bracket.
(e) Attach the new dial assembly to the U-shaped mounting bracket with the two mounting bracket screws.
(f) Connect the dial leads to their respective terminals.
(g) Snap the shock absorbers, with the dial attached, in place over the mounting posts.
(h) Dress the wires clear of the actuator spring and the dial pileup springs.
(i) Replace the housing, facemat, and faceplate.

Replacement of Touch Calling Unit

4.05 To replace the TCU in the telephone, proceed in the following sequence:

(a) Remove the faceplate, facemat, and housing.
(b) Disengage the TCU shock absorbers from their mounting posts.
(c) Disconnect the TCU leads from the transmission network.
(d) Remove the two TCU mounting bracket screws and remove the TCU assembly from the bracket.
(e) Attach the new TCU to the U-shaped mounting bracket with the two mounting bracket screws.
(f) Connect the TCU leads to their respective terminals.
(g) Snap the shock absorbers, with the TCU attached, in place over the mounting posts.
(h) Dress TCU wires clear of the hookswitch actuator and spring.
(i) Replace housing, facemat, and faceplate.

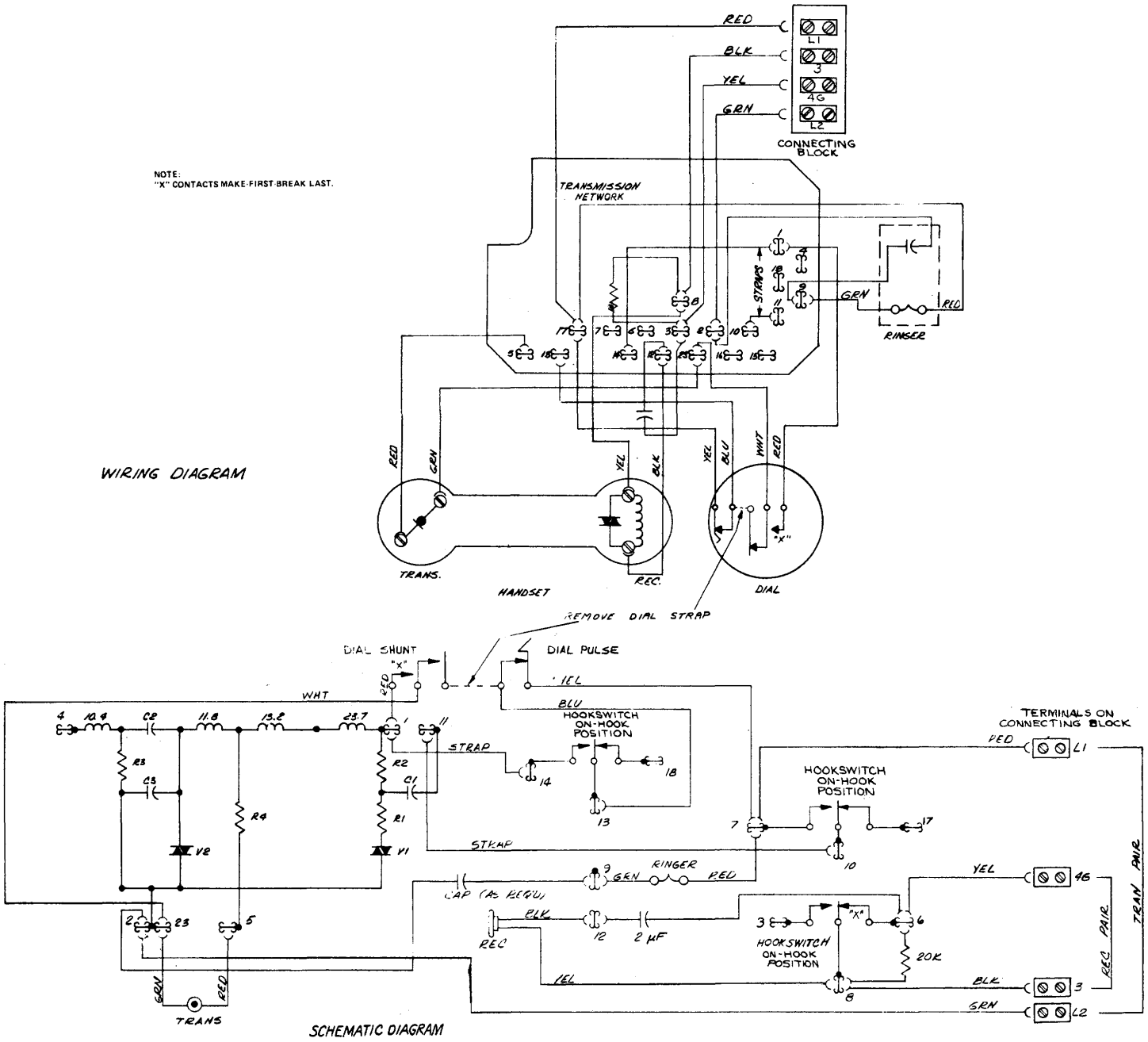


Figure 3. Typical Schematic and Wiring Diagram for Rotary Dial Telephone with Four-Wire Ring on Transmit.

Line Cord Replacement

4.06 To replace the line cord, perform the following procedure in sequential order and refer to Figures 3 through 7 as applicable:

(a) Open the connecting block and disconnect the line cord leads from their respective terminals.

(b) Disengage the rotary dial assembly or TCU and shock abosorbers from the baseplate assembly.

(c) Disconnect the line cord leads from the transmission network terminal. On HC-813 telephones, remove the cord clamp and screw.

(d) Disengage the line cord from the mounting posts in the baseplate.

(e) Pass the end of the new cord through the opening in the baseplate and engage the line cord into its mounting posts. On HC-813 telephones, secure the cord with the cord clamp and screw.

(f) Connect the line cord leads to the transmission network.

(g) Connect the line cord leads to their respective terminals.

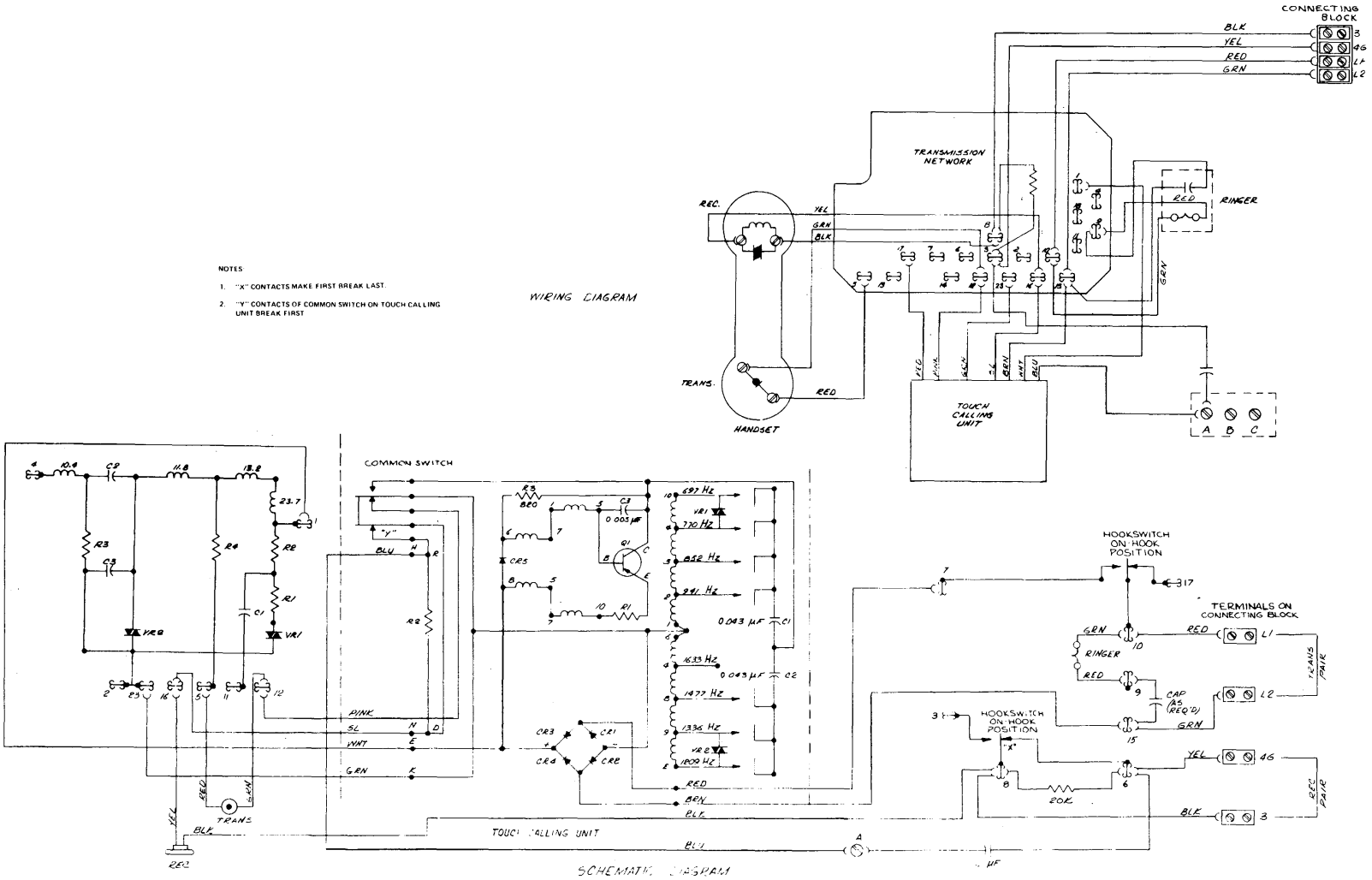


Figure 4. Typical Schematic and Wiring Diagram for Touch Calling Telephone with Four-Wire Ring on Transmit.

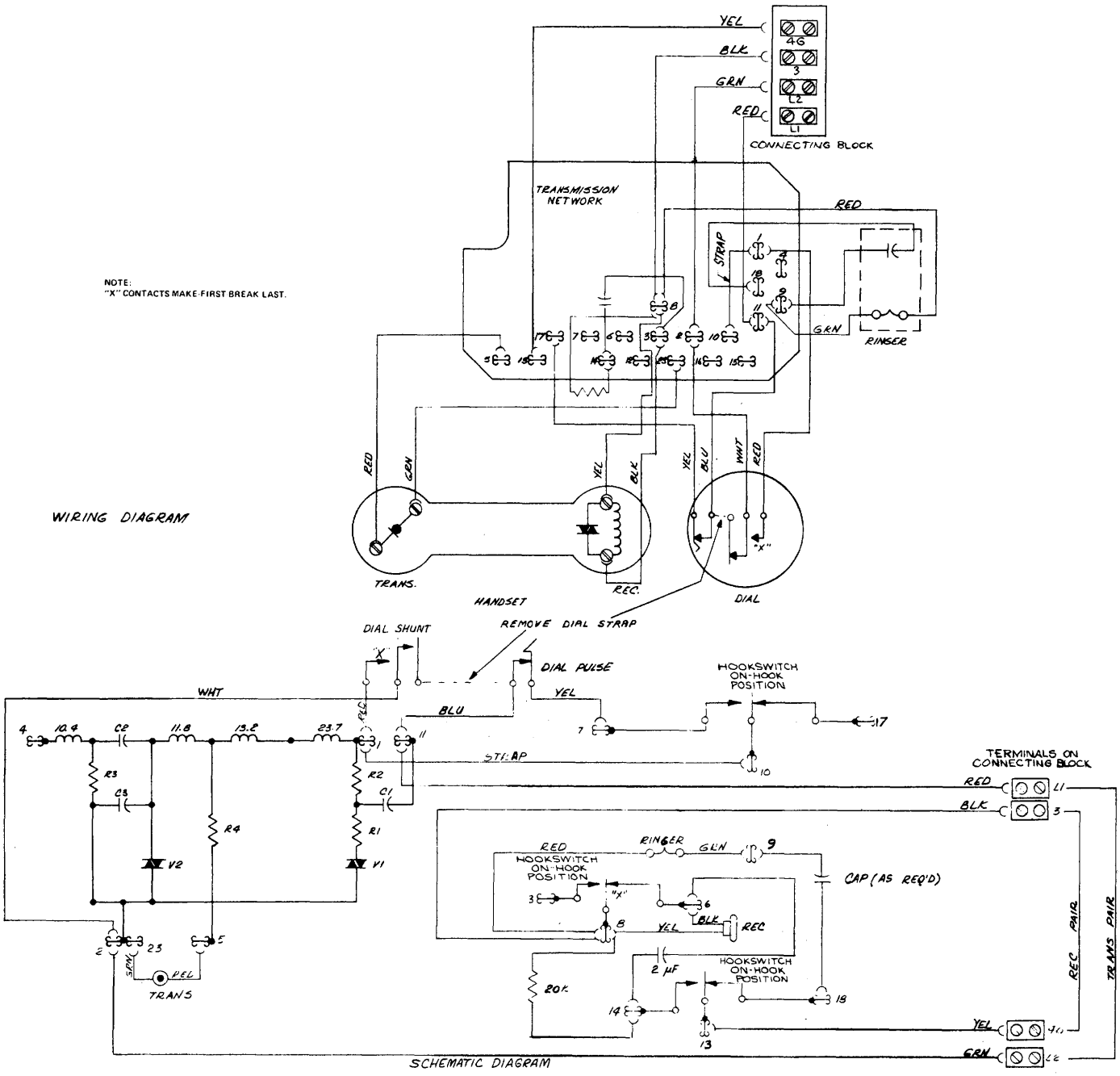


Figure 5. Typical Schematic and Wiring Diagram for Rotary Dial Telephone with Four-Wire Ring on Receive.

(h) Replace the rotary dial assembly or TCU on its mounting posts on the baseplate assembly and dress the leads clear of the hookswitch actuator and spring.

NOTE: Proper routing of the line cord must be followed to avoid jamming the hookswitch actuator.

Handset Replacement

4.07 To replace the handset on the telephone, proceed as follows:

(a) Remove the rotary dial assembly or TCU and its shock absorbers from the baseplate assembly.

(b) Disconnect the handset leads from the transmission network.

(c) Disengage the handset-cord J-hook clamp from the telephone set baseplate and remove the old cord from the mounting tab.

(d) Insert the new handset cord through the U-shaped slot in the side of the baseplate and route the handset cord through its mounting tab and around its mounting boss as shown in Figure 10.

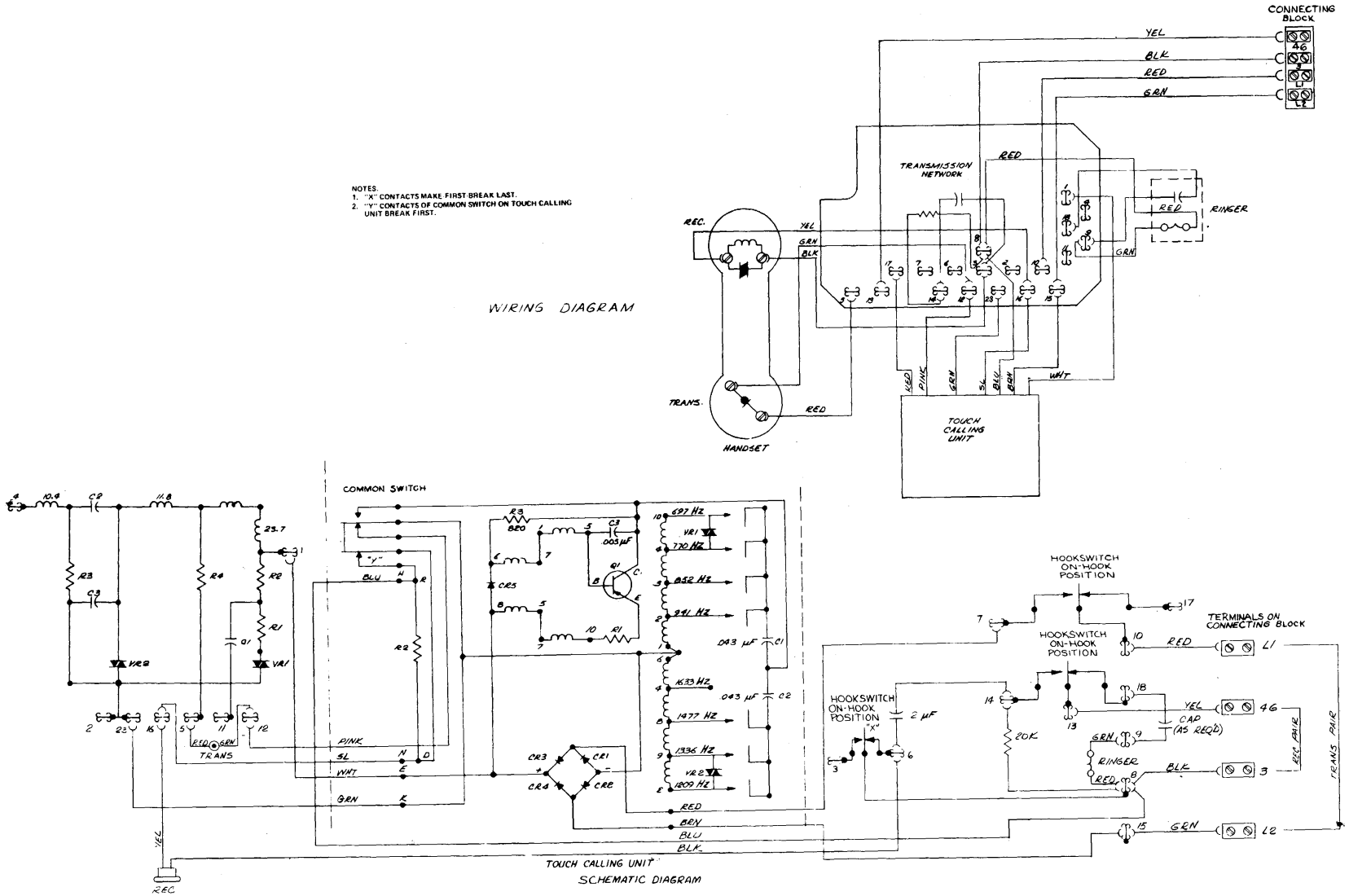


Figure 6. Typical Schematic and Wiring Diagram for Touch Calling Telephone with Four-Wire Ring on Receive.

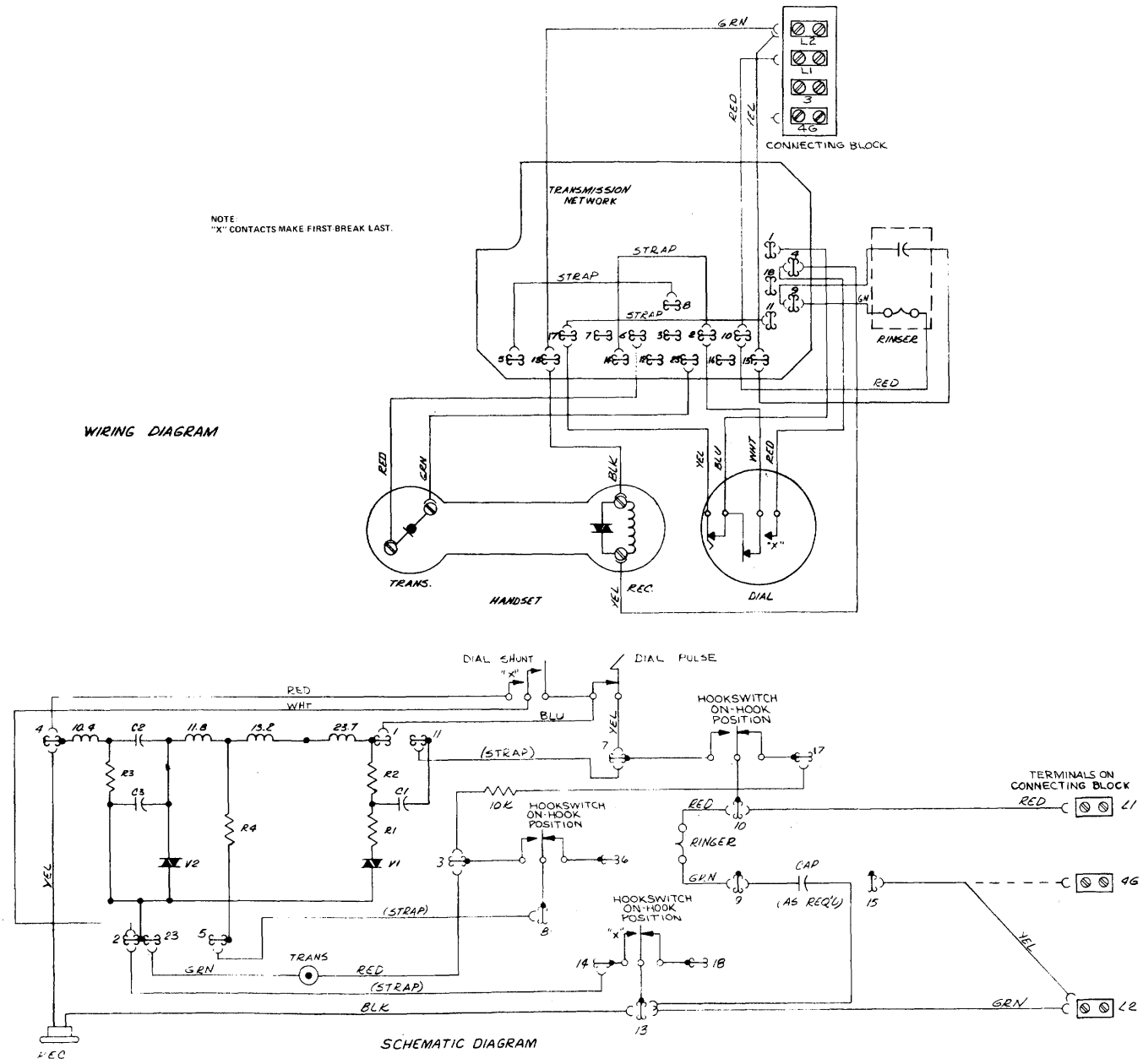


Figure 7. Typical Schematic and Wiring Diagram for Rotary Dial Telephone for Supervised Service.

(e) Connect the handset cord J-hook clamp in place.
(f) Connect the handset cord leads to the proper transmission network terminals.
(g) Replace the rotary dial assembly or TCU onto the mounting posts of the baseplate assembly. Dress the wires clear of the hookswitch actuator and spring.

Ringer Replacement

4.08 To replace the Type 48 ringer assembly, proceed in the following sequence (refer to Figures 3 through 7 as applicable):

(a) Remove the ringer mounting screw and ringer.
(b) Detach the rotary dial assembly or TCU.
(c) Disconnect the ringer capacitor leads if required.
(d) Disconnect the red and green ringer leads from the transmission network terminals.
(e) Place the new ringer over the ringer mounting hole (Figure 2) in the telephone base.
(f) Insert and tighten the ringer-mounting screw.
(g) Connect the ringer capacitor if required.
(h) Connect the red and green ringer leads to the transmission network terminals.
(i) Replace the rotary dial assembly onto the mounting posts of the baseplate assembly. Dress the wires clear of the hookswitch actuator and spring.

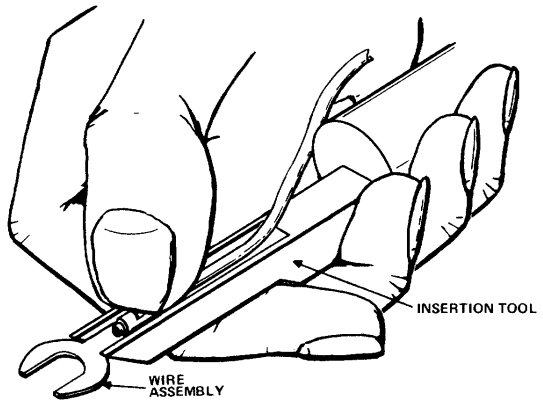


Figure 8. Insertion of Wire Assembly.

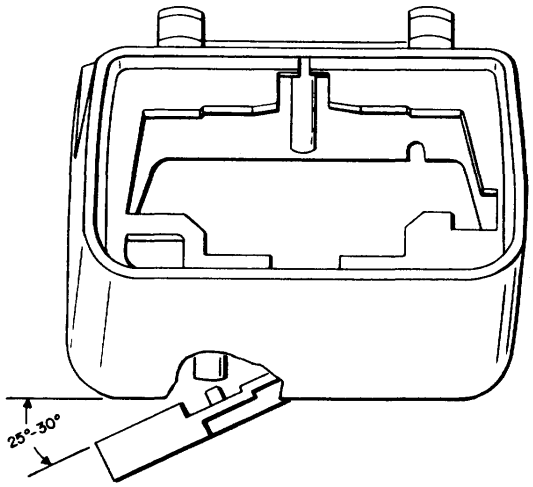


Figure 9. Housing Removal.

→ Conversion from Rotary Dial Operation to Touch Calling Unit Operation (Four-Wire Telephone Only)

4.09 To change from rotary dial operation to TCU operation, proceed as follows:

(a) Perform the procedure in paragraphs 4.04(a) through (d).
(b) Remove the shock absorbers from their mounting bracket.
(c) Turn the mounting bracket over so the T's on the mounting tables are facing up and place the shock absorbers over these mounting tabs.
(d) Attach the TCU to the mounting bracket.
(e) Rewire in accordance with the appropriate wiring diagram.
(f) Place the TCU with its shock absorbers over the mounting post and dress the leads clear of the hook switch actuator and spring.
(g) Replace the housing.
(h) Install the proper Touch Calling facemat and faceplate.

→ Conversion from Touch Calling Unit Operation to Rotary Dial Operation (Four-Wire Telephone Only)

4.10 To change from TCU operation to rotary dial use, proceed as follows:

(a) Perform the procedure in paragraphs 4.05 (a) through (d).
(b) Disconnect the green and yellow handset leads from transmission network terminals. Reconnect them to the appropriate terminals as shown in Figures 3 through 7 as applicable.
(c) Remove the shock absorbers from their mounting bracket.
(d) Turn the mounting brackets over so that the R's on the mounting tabs are facing up, and place the shock absorbers over the mounting tabs.
(e) Attach the dial to the mounting bracket.
(f) Connect the dial assembly leads to the appropriate transmission network terminals (refer to the appropriate wiring diagram).
(g) Place the rotary dial assembly, with its shock absorbers, over the mounting posts in the baseplate assembly and dress the leads clear of the hookswitch actuator and spring.
(h) Replace the housing.
(i) Install the proper facemat and faceplate.

5. CONVERSION TO LESS-DIAL CONFIGURATION

5.01 To convert Type 80E telephones to a less-dial configuration, conversion kit HH-880030 is required. First, remove the dial assembly or TCU as specified in part 4. Then, rewire as specified in paragraph 5.02 or 5.03, as appropriate.

5.02 A rotary dial telephone is rewired by connecting a blue strapping wire (D-543069) between terminals 1 and 11.

5.03 A TCU telephone is rewired as follows:

(a) Rewire the instrument per the appropriate rotary version.
(b) Connect a blue strapping wire (D-543069) between terminals 1 and 11.

5.04 Complete the conversion for both rotary dial and TCU telephones as follows:

(a) Replace the housing.
(b) Install the blank facemat and faceplate. Using a straightened paper clip or other sharp object, pry the arm of the faceplate clip upward while exerting a small downward pressure on the faceplate. When the faceplate has seated against the housing, remove the paper clip and allow the arm of the faceplate clip to snap into the rectangular recess of the faceplate.

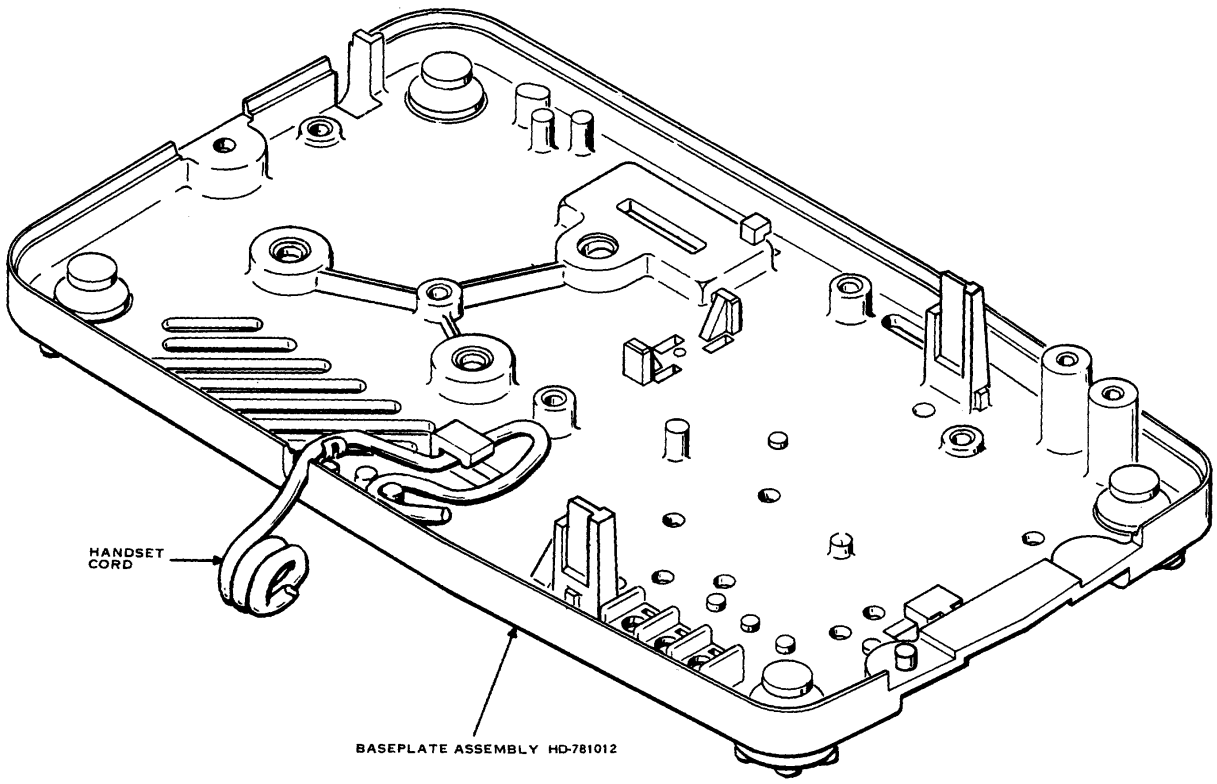


Figure 10. Proper Placement of Handset Cord in Baseplate (HD-781012).