

QSK100 AND 2100 TYPE CONTEMPRA TELEPHONE SET INSTALLATION AND MAINTENANCE

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1. GENERAL

1.01 This practice provides the description, installation, and maintenance information for the QSK100 and 2100 Type Contempra telephone sets.

1.02 This practice is reissued to update information on the Contempra sets. Because of the extensive additions, the location of these additions is not noted throughout this practice. **Remove from the file and destroy all copies of CTSP 480-101-401, Issue 1, 1969.**

2. DESCRIPTION

2.01 The Contempra is a two-piece telephone set (Figure 1) consisting of base and handset, and is a combined desk-wall-type telephone. When used as a desk-type telephone, it rests on the feet provided in the base of the set. When used as a wall-type set, it is mounted by using the mounting holes in the baseplate.

2.02 When the Contempra telephone set is used as a desk set, and the handset is in place, it rests in the recess provided in the base of the set. When the Contempra telephone is used as a wall set and the handset is in place, the lower edge of that portion of the handset that houses the receiver unit engages a projection provided as part of the handset recess.

2.03 The transmission circuit is the same as for a 500 type telephone set.

2.04 The QSK100 type telephone sets are equipped with a NE-10QA rotary dial (except QSK100C which has no dial), while the QSK2100 type telephone sets are equipped with a QDC1A Digitone dial.

2.05 The QSK100A and 2100A telephone sets are single-line telephone sets equipped with rotary and Digitone dials respectively (Figures 1 and 2).

2.06 The QSK100B and 2100B are the rotary and Digitone dial versions of the "Message Waiting" telephone sets (Figure 3).

2.07 The QSK100C is the "manual" version of the QSK100A and no dial is required (Figure 4).

2.08 The QSK191A and 219A telephone sets are similar to the QSK100A and 2100A single-line sets except that they are not equipped with a ringer; instead, they have a mounting bracket mounted in place of the ringer, which may be used to mount a frequency selective type ringer.

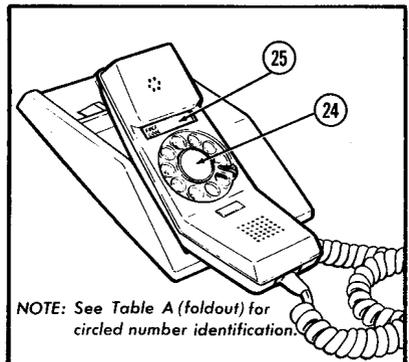


FIGURE 1. Desk Mounted "Off-Hook" Position



FIGURE 2. Desk Mounted "Off-Hook" Position

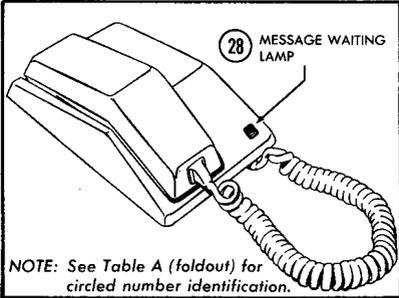


FIGURE 3. QSK100B Message Waiting Telephone

2.09 The QSK110A and 2110A are two-line telephone sets, equipped with a nonlocking press-to-operate key which provides a signaling or grounding feature.

2.10 Telephone sets coded with a letter (A, B, etc.) are for telephone company use only, and have "Telephone Company Property—Not for Sale" marked permanently on the underside of the baseplate.

2.11 A three-conductor cord is supplied with all codes of the Contempra (except the QSK110A and 2110A) which are equipped with a six-conductor cord. Other mounting cords, if required, may be ordered separately.

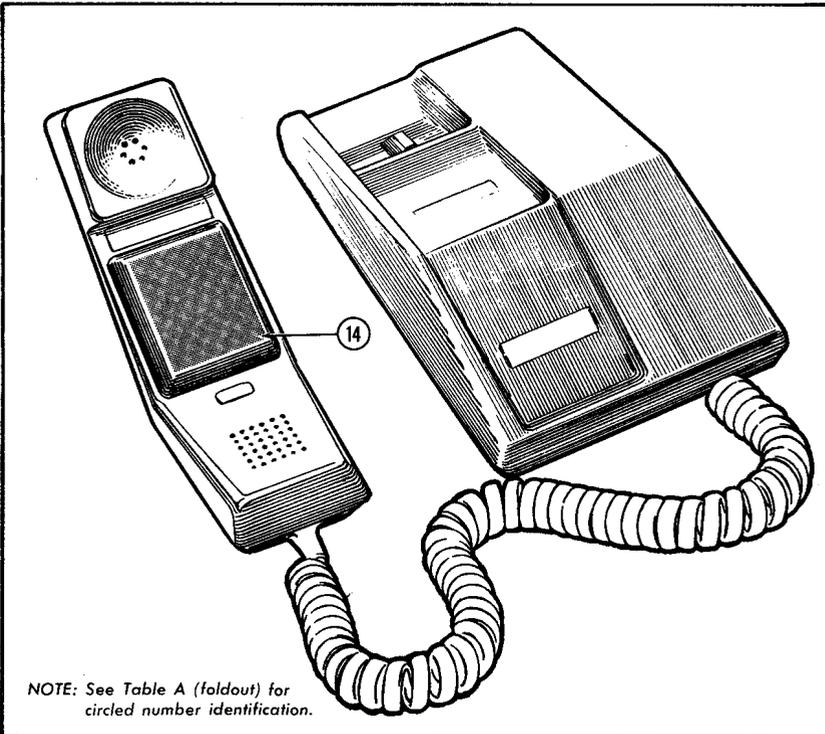


FIGURE 4. QSK100C Manual Telephone

3. IDENTIFICATION

3.01 All single-line Contempra telephone sets are furnished wired for individual service. Wiring changes can be made to allow their use for the following services:

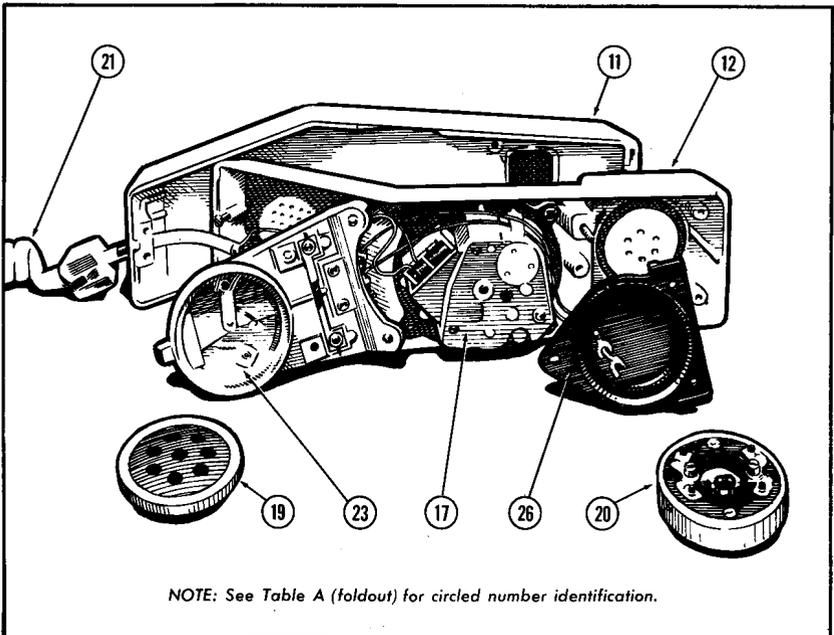
- a. Tip party flat rate.
- b. Ring party flat rate.
- c. 1A1 Key Systems.
- d. Tip party dial message rate.
- e. Tip party automatic message identification.

- a. Warm White—20.
- b. Deep Turquoise—21.
- c. Mauve—22.
- d. Bright Red—23.
- e. Pale Yellow—24.
- f. Deep Blue—25.
- g. Ivory—50.
- h. Green—51.
- i. Beige—60.

3.02 Figures 1 through 8 show component parts of the Contempra. The circled numbers in Figures 1 through 8 are identified in Table A. The wiring options for the QSK110A and 2110A two-line Contempra sets are shown in Tables B and C.

3.03 All Contempra telephone sets are available in the following colors:

3.04 The QSK110 and 2110 sets are equipped with a dual purpose switch on the right-hand side of the baseplate (Figure 7) in front of the ringer volume control. The switch located closest to the front of the set is a two-position slide switch. The position towards the front of the set is referred to as "Line 1", while the position towards the volume control is referred to as "Line 2". The movement of this switch transfers the



NOTE: See Table A (foldout) for circled number identification.

FIGURE 5. Parts of Handset Assembly NE-H1Q Type

TABLE B. QSK100A Connections Single-Line Telephone, Rotary Dial

CLASS OF SERVICE	CONNECTIONS AT CONNECTING BLOCK DESK TYPE ONLY										CONNECTIONS AT NETWORK & TERM STRIP DESK AND WALL											
	LINE					MTG. CORD					BASE CORD OR STATION WIRE					RINGER LEADS*			SWITCH LEADS			
	Ring	Tip	GND (A1)	A	LK	R	G	Y	BK	W	R	G	Y	BK	W	R	BK	S	S-R	S	S-Y	S-BR
Bridged	R	G	Y	-	-	R	G	G	-	-	L2	L1	G	-	-	L2	L1	K	A	L3	L2	C
Ring Party (See Note 3)	R	G	Y	-	-	R	G	Y	-	-	L2	L1	G	-	-	L2	G	K	A	L3	L2	C
Tip Party Except Dial Message Rate (See Note 3)	R	G	Y	-	-	G	R	Y	-	-	(L1)	(L2)	G	-	-	L2	G	K	A	L3	L2	C
Tip Party Dial Message Rate (See Note 1)	R	G	Y	-	-	G	R	Y	-	-	(L1)	(L2)	G	-	-	K	A	G	L2	L3	L2	C
Tip Party Automatic Number Identification (See Note 1)	R	G	Y	-	-	G	R	Y	-	-	(L1)	(L2)	G	-	-	G	L2	K	A	L3	L2	C
1A1 Key System (See Note 2)	R	G	Y	BK	-	R	G	Y	BK	-	<input type="checkbox"/> C	L1	G	L2	-	C	L1	K	A	L3	G	L2

Circled letters (L1) indicate terminals on wall set. All other other terminals are common.

For wall mounted set, connect ring (red) incoming line to Y on terminal strip and strap Y to C of network using an NE-M1W cord.

NOTE 1: For these connections, the NE-H1QBX Handset and H6QA-cord are necessary for proper operation of recall switch and central office equipment. (See Table C.)

NOTE 2: For 1A1 key systems, the NE-D4QC line cord is necessary.

NOTE 3: To help reduce induced line noise, the red ringer lead may be changed from L2 to L3. This will disconnect the ringer from the line when the handset is off-hook; however, the ringer will not operate when the recall switch is depressed.

* Ringer not supplied with QSK191C.

TABLE C. QSK2100A Connections Single-Line Telephone, Digitone Dial

CLASS OF SERVICE	CONNECTIONS AT CONNECTING BLOCK DESK TYPE ONLY										CONNECTIONS AT NETWORK & TERM STRIP DESK AND WALL														
	LINE					MTG. CORD					BASE CORD OR STATION WIRE					RINGER LEADS*					SWITCH LEADS				
	Ring	Tip	GND (A1)	A	LK	R	G	Y	BK	W	R	G	Y	BK	W	R	BK	S	S-R	S	S-Y	S-BR			
Bridged	R	G	Y	-	-	R	G	G	-	-	L2	L1	G	-	-	L2	L1	K	A	L3	L2	X			
Ring Party (See Note 3)	R	G	Y	-	-	R	G	Y	-	-	L2	L1	G	-	-	L2	G	K	A	L3	L2	X			
Tip Party Except Dial Message Rate (See Note 3)	R	G	Y	-	-	R	G	Y	-	-	L2	L1	G	-	-	G	L1	K	A	L3	L2	X			
Tip Party Dial Message Rate (See Note 1)	R	G	Y	-	-	R	G	Y	-	-	L2	L1	G	-	-	L1	A	G	K	A	L2	X			
Tip Party Automatic Number Identification (See Note 1)	R	G	Y	-	-	R	G	Y	-	-	L2	L1	G	-	-	G	L1	K	A	L3	L2	X			
1A1 Key System (See Note 2)	R	G	Y	BK	-	R	G	Y	BK	-	X	L1	G	L2	-	X	L1	K	A	L3	G	L2			

NOTE 1: For these connections, the NE-H2QBX Handset and H6QA-cord are necessary for proper operation of recall switch and central office equipment. (See Table E.)

NOTE 2: For 1A1 key system, the NE-D4QC line cord is necessary.

NOTE 3: To help reduce induced line noise, the red ringer lead may be changed from L2 to L3. This will disconnect the ringer from the line when the handset is off-hook; however, the ringer will not operate when the recall switch is depressed.

* Ringer not supplied with QSK2191.

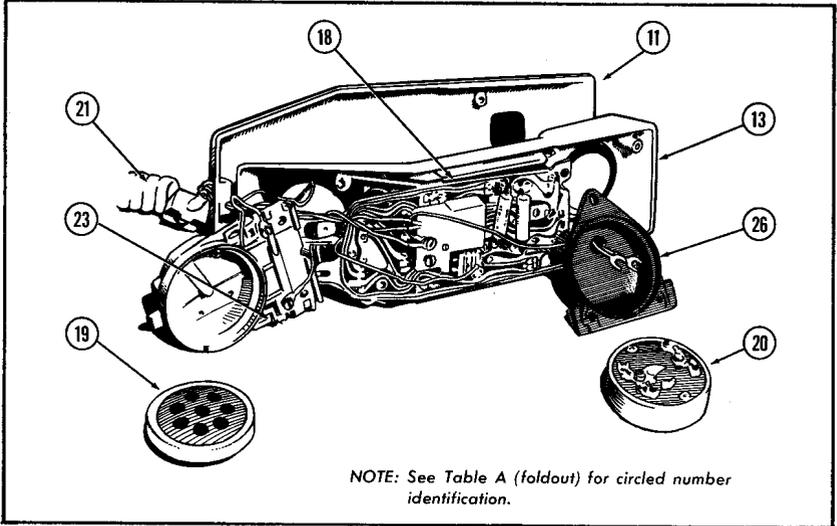


FIGURE 6. Parts of Handset Assembly NE-H2Q Type

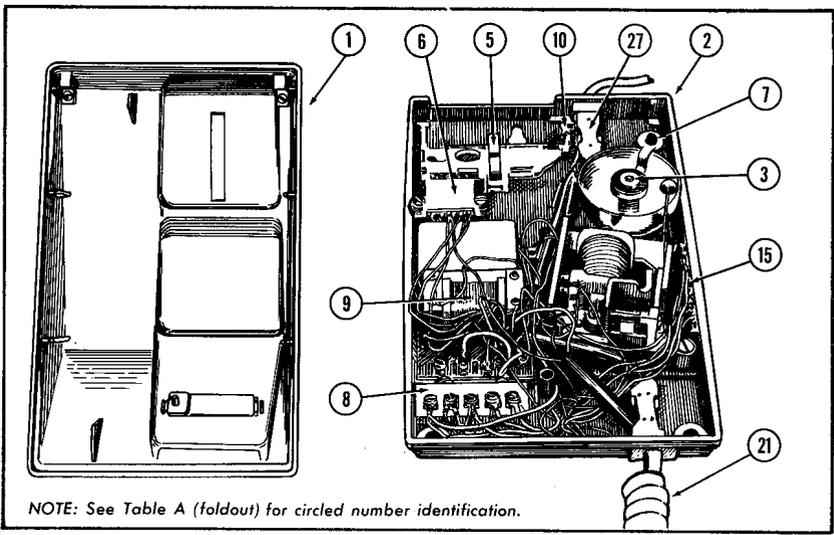


FIGURE 7. Components of Base Assembly

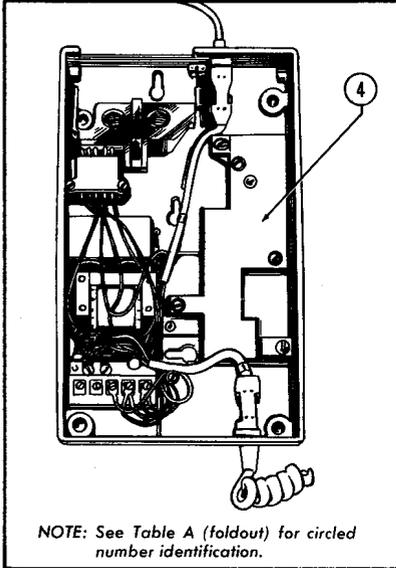


FIGURE 8. QSK191 Base Assembly—Showing Ringer Mounting Bracket

talking circuit of the telephone set to either of the two lines. The switch immediately behind the two-line slide switch and nearest to the ringer volume control is a "press-to-operate" switch which may be used as a grounding or signaling switch. The ringer is factory wired across Line 1.

3.05 The Contempra telephone sets contain a printed circuit type network of the QNB18 type, which is equipped with quick connect type terminals. Connections are made by pushing the spade tips into spring clips on either side of the terminal. (Each terminal holds two spade tips.) To avoid damage to the leads, use long-nose pliers to grasp the spade tip and use a slight sideways rocking motion while inserting or removing a spade tip. Use caution to ensure that the shank of the clip is not bent.

3.06 A recall button is located on the handset which can be used to disconnect for redialing, thus eliminating the need to operate the switchhook on each call. However, as the ringer is disconnected by the switchhook, incoming calls will not be received unless the receiver is on-hook (sets manufactured before January, 1970). **For sets manufactured after January, 1970, the ringer is not disconnected by switchhook when the receiver is off-hook.**

3.07 To adjust the ringer volume, a wheel that protrudes through the baseplate at the side of the set has been provided. (See Figure 9.) Moving a screw will allow this wheel to completely silence the

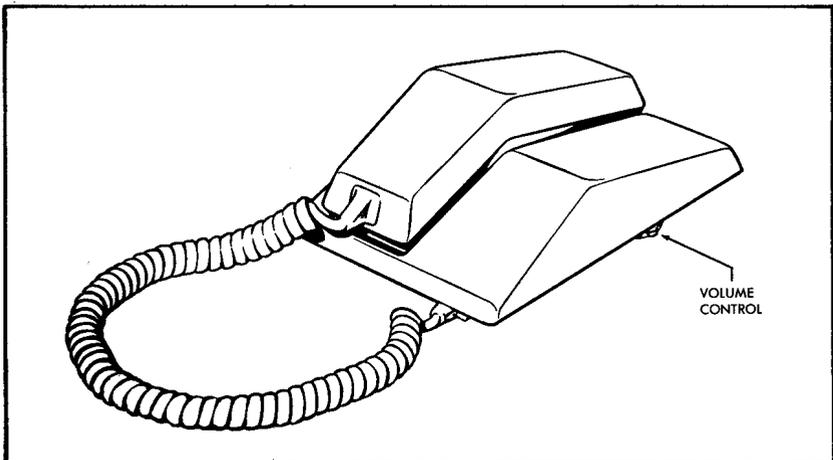


FIGURE 9: Location of Ringer Volume Control Wheel

ringer. However, ringer cut-off must not be provided unless authorized.

4. INSTALLATION

4.01 Disassembly:

a. To remove the molded housing from the base:

(1) Remove card retainer (or window) located near the front of the housing. To remove card retainer, insert the tip of the NS167050 List 3 releaser tool into the small slotted hole at the edge of transparent window. Ensure that the tip does not enter the hole by more than one-eighth of an inch as an underlying screw may hinder the lateral movement of the tool. Apply a slight pressure to the handle of the tool. (See Figure 10.) The housing projection provides a fulcrum. This will bow the window upward so that its edges may be grasped with the fingertips of the other hand to spring it out.

(2) Remove the number card, if present.

(3) Loosen the exposed captive screw sufficiently so that the front of the housing may be lifted free of the base.

(4) Continued lifting of the cover enables the housing latches to disengage and free the cover.

b. To open the handset:

(1) Remove the card retainer and the number card located above the dial.

(2) Remove the handset grommet by holding the handset with the back or smooth section in the palm of the hand. Insert about 1/16-inch of the tip of the NS16750 List 3 releaser tool into the small slot adjacent to the grommet. (See Figure 11.) Press the handle of the tool towards the grommet and push the shank into the slot as far as it will go. Push the handle of the releaser tool away from the grommet to release the returning spring and gently ease the grommet out of the handset shell.

(3) Once the grommet has been withdrawn, two screws are exposed. Loosen these two screws by about 3/16-inch only, as it is not desirable or necessary to remove them.

(4) Free (do not remove) the captive screws in the cord retainer well. Loosen sufficiently to separate the handset sections at the receiver end; then slide the smooth or back half of the handset housing towards the cord grommet to release this section from the slotted screw holes at the grommet.

c. Installation of base mounting cord (NE-D3Q5A):

(1) Enter the spade tipped leads at the grommeted end of the line cord through the square hole in the edge of the base.

(2) Push the grommet through the opening so that the narrow section aligns with the square projections directly in front of the grommet entry.

(3) Push the grommet down firmly to engage between projections.

(4) Press the jacketed portion of the cord into the channel beside the NE-DIQA ringer and between the projections located about midpoint on the base. Dress the leads under the existing wiring; loop them around the right side of the housing screw stud and connect to the terminal block in accordance with Table B or D.

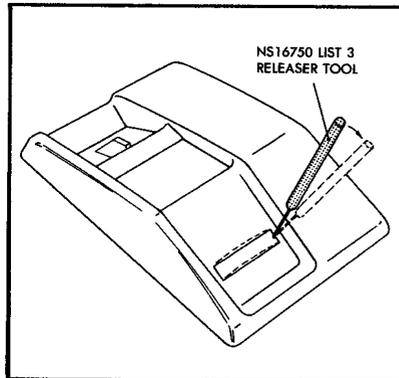


FIGURE 10. Removal of Card Retainer

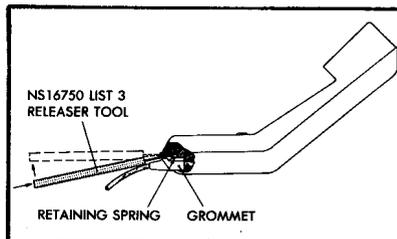


FIGURE 11. Removal of Handset Grommet

TABLE D. Base Cord Connections Single-Line Telephone

COLOR	NE-H5QE-Cord	
	BASE	HANDSET
G	F	GN
Y	RR	Y
BL	GN	BL
BK	B	BK
R	B	R
W*	A*	W*

* For Tip Party ANI Use NE-H1QBX Handset with NE-H6QA Cord

4.02 Wall Mounted (Figure 12):

a. Remove line cord. The center key opening in the base is normally used for the entry of the station wiring. The slots at the hookswitch end of the set and the one just below the ringer are used for normal wall mounting. For mounting on an outlet box, the key at the center of the set and the one just below the ringer are used. Additional space may be opened for the entrance of wire from the outlet box, when necessary, by placing the set on a flat surface, placing a screwdriver in the detent adjacent to the center key and giving the screwdriver a sharp knock downward. This action will shear out an additional opening leading into the center key. If a mounting screw fails to hold, knockouts can be made near the handset cord or under the switch plunger, as necessary, for the addition of another screw without having to move the complete installation. These knockouts should not be opened unnecessarily. If it is necessary to bring the station wire up the wall from the baseboard, an opening can be uncovered for wire entry by removing the handset cord grommet from the base, rotating it 180° and replacing it.

b. To provide the ringer cut-off feature (when authorized), change the position of the lever associated with the ringer volume control wheel. With housing of the base off, remove the screw that holds the lever in contact with the wheel, shift the lever to the opposite end of the slot, place the screw in the hole that was under the lever and tighten.

4.03 Reassembly:

a. Base:

(1) Dress line cord leads and other wiring away from the housing retaining screw post on the base of the telephone set.

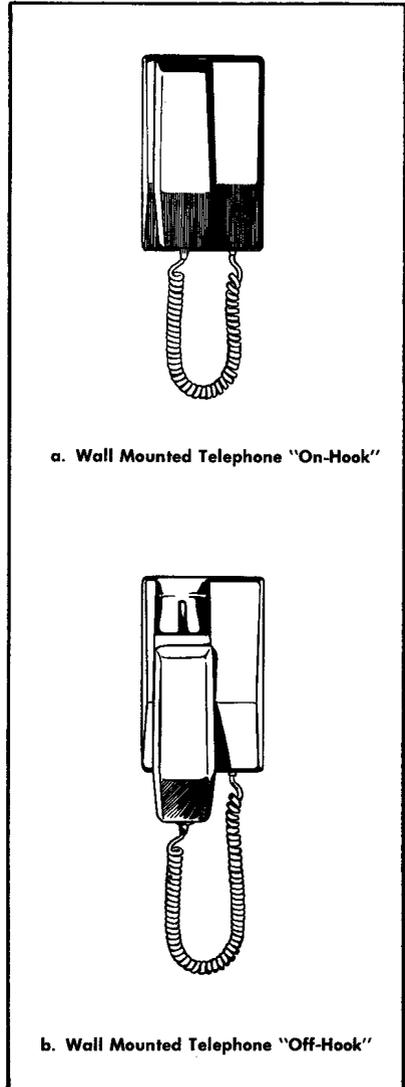


FIGURE 12.

(2) Locate housing at an angle to the base as shown in Figure 13.

(3) Press rear of housing down and toward the back of the base to engage the housing latches with the notches in the base.

(4) Push front of housing down, ensuring that latches remain in notches, so that the retaining screw enters the tapped post in the base.

(5) **Carefully tighten the screw snugly, without undue force.**

(6) Insert a station card number and the retainer window in the well in the base.

b. Handset:

(1) Align the jacketed portion of the handset cord which projects beyond the grommet and

into the handset, so that it will fit the channel in the transmitter cup assembly.

(2) Dress receiver leads through clip or dial cover wire retainer of rotary dials.

(3) Slide the two handset sections together so that the two slots at the grommet end slide under the heads of the screws in the apparatus section.

(4) Carefully align sections so that the two screws in the number plate slot will engage the tapped post holes in the other section.

(5) Tighten screws; two in the grommet cutout and two in the number plate well. Tighten the screws snugly without undue force.

(6) Slide the grommet into the square hole in the end of the handset housing with the

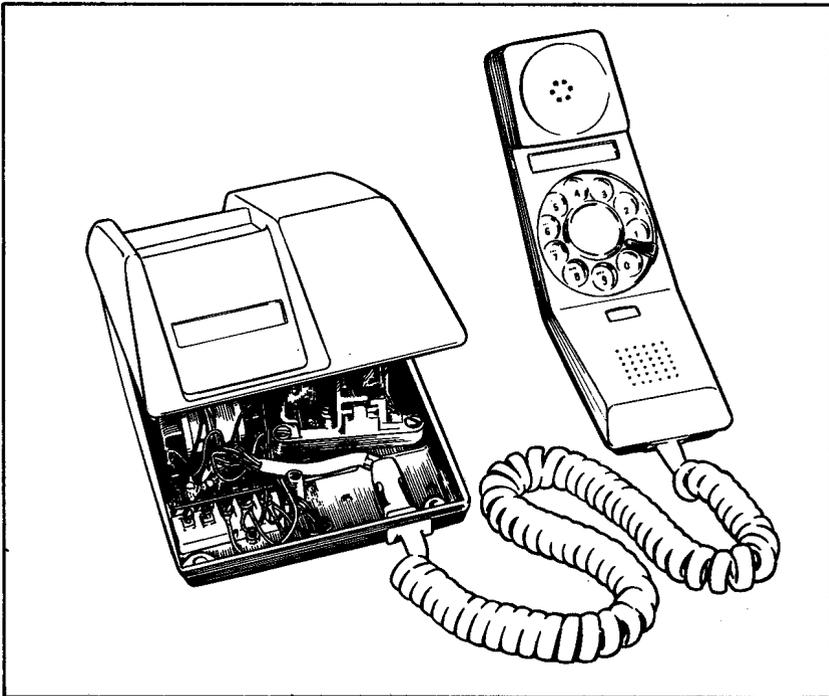


FIGURE 13. Reassembly of Housing

retaining clip facing the instrument section of the handset. Fully seat the grommet so that the clip will engage. The grommet shoulder should be flush with the surface of the housing.

(7) Insert a station number card and card holder window into the well on the handset.

5. MAINTENANCE

5.01 Normal maintenance may involve replacement of the following parts (see Table A, foldout, for identification of parts):

- a. Dial.
- b. Cords.
- c. Transmitter.
- d. Receiver.
- e. Ringer.
- f. Feet.
- g. Switchhook.
- h. Transmitter Cup.

NOTE: In case of a defective dial, replace; do not attempt repair in the field.

5.02 To replace Digitone dial:

- a. See paragraph 4.01 for instructions on opening of the handset.
- b. Loosen two screws and remove one screw attaching the circuit board to the transmitter cup.

c. Remove two mounting screws attaching dial and transmitter cup to instrument section.

d. Remove leads from terminal strip on back of dial.

e. Replace dial and assemble two mounting screws.

f. Reconnect lead colors to agree with terminal designations. (See Figure 14 for lead dressing.)

g. See paragraph 4.02 for instructions on reassembly of handset.

5.03 To replace transmitter, Digitone set:

- a. Open handset (see paragraph 4.01).
- b. Loosen two screws attaching dial and transmitter cup to the instrument section.
- c. Lift the dial and transmitter cup as a unit.
- d. Replace transmitter.
- e. Reassemble screws.
- f. Close handset (see paragraph 4.03).

5.04 To replace rotary dial:

- a. See paragraph 4.01 for instructions on opening handset.
- b. Remove dial leads from terminals located on transmitter cup.
- c. Remove four (4) mounting screws.
- d. Replace dial.

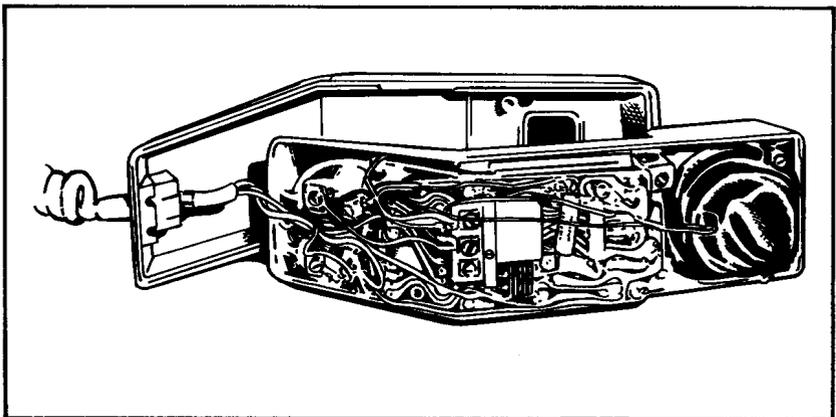


FIGURE 14. Digitone Handset Showing Lead Dressing

e. See paragraph 4.03 for reassembly instructions.

5.05 To replace transmitter, rotary set:

- a. Open handset (see paragraph 4.01).
- b. Loosen two (2) screws holding transmitter cup.
- c. Lift transmitter cup and replace transmitter.
- d. Close handset (see paragraph 4.03).

5.06 To replace receiver:

- a. Open handset (see paragraph 4.01).
- b. Loosen completely the three screws holding the receiver cup and remove the two end screws.
- c. Lift slightly by leads so that cup and receiver may be grasped as a unit and move back and upward.
- d. Slide cup along leads.
- e. Disconnect and replace receiver.
- f. Slide cup back along leads.
- g. Line up front screw (still in cup) with hole in post and run down.
- h. Replace two end screws.
- i. Reassemble handset (see paragraph 4.03).

5.07 Handset cord replacement:

- a. **Rotary:** See paragraphs 4.01 and 4.03.
- b. **Digitone:** The outer sheath of the handset cord must be cut back to within 1 inch of the handset grommet. (See Figures 15 and 16.) See Tables D and E for base and handset connections.

5.08 Rotary Dial Center Disc: Insert the NS16750 L3 releaser tool in the small hole adjacent to the number 5 hole and pry off disc.

5.09 Rotary Dial Fingerwheel: If replacement is necessary, replace complete dial.

5.10 Line cord replacement is covered in paragraphs 4.01 and 4.03.

5.11 Ringer:

- a. Open base (see paragraph 4.01).
- b. Loosen screw in volume control and mounting screws of ringer.
- c. Remove ringer leads.
- d. Replace ringer.
- e. Close base (see paragraph 4.03).

6. CONNECTIONS

6.01 The connections for single-line sets are shown in Tables B, D and E and Figure 17, 18 and 19 for

TABLE E. Digitone Handset Cord Connections

COLOR	NE-H5QE-Cord	
	BASE	HANDSET
G	X	GN
T	C	Y
BL	BN	BL
BK	R	BK
R	B	R
W*	A*	W*

** For Tip Party ANI Use NE-H2QB Handset with NE-H6QA Cord*

rotary dial sets. See Tables C, D and E and Figures 20 and 21 for Digitone dial sets.

6.02 Connections and options available for the two-line sets QSK110A and QSK2110A are shown in Table F and Figures 22 and 23.

6.03 Typical connections for the type 8A buzzer are shown in Figure 24.

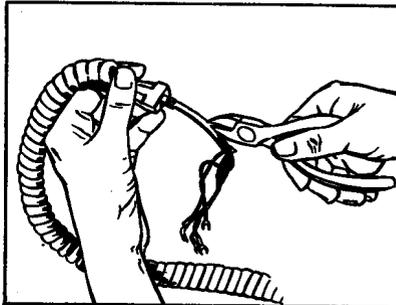


FIGURE 15. Slitting Sheath

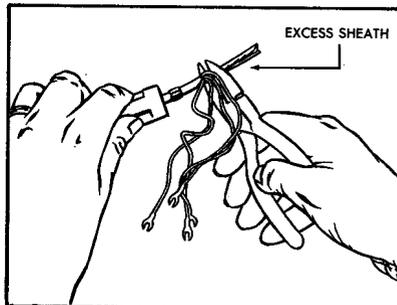


FIGURE 16. Cutting Sheath

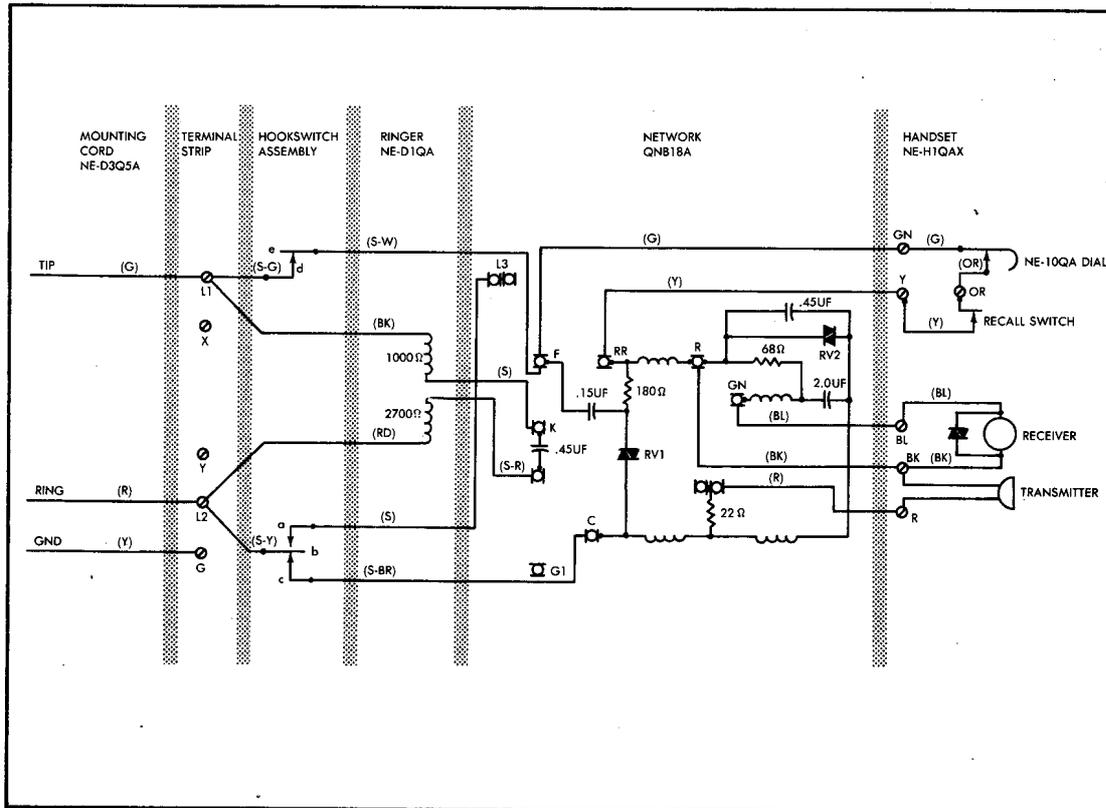


FIGURE 17. QSK100 and QSK191A Telephone Sets—Connections Single Line, Rotary Dial

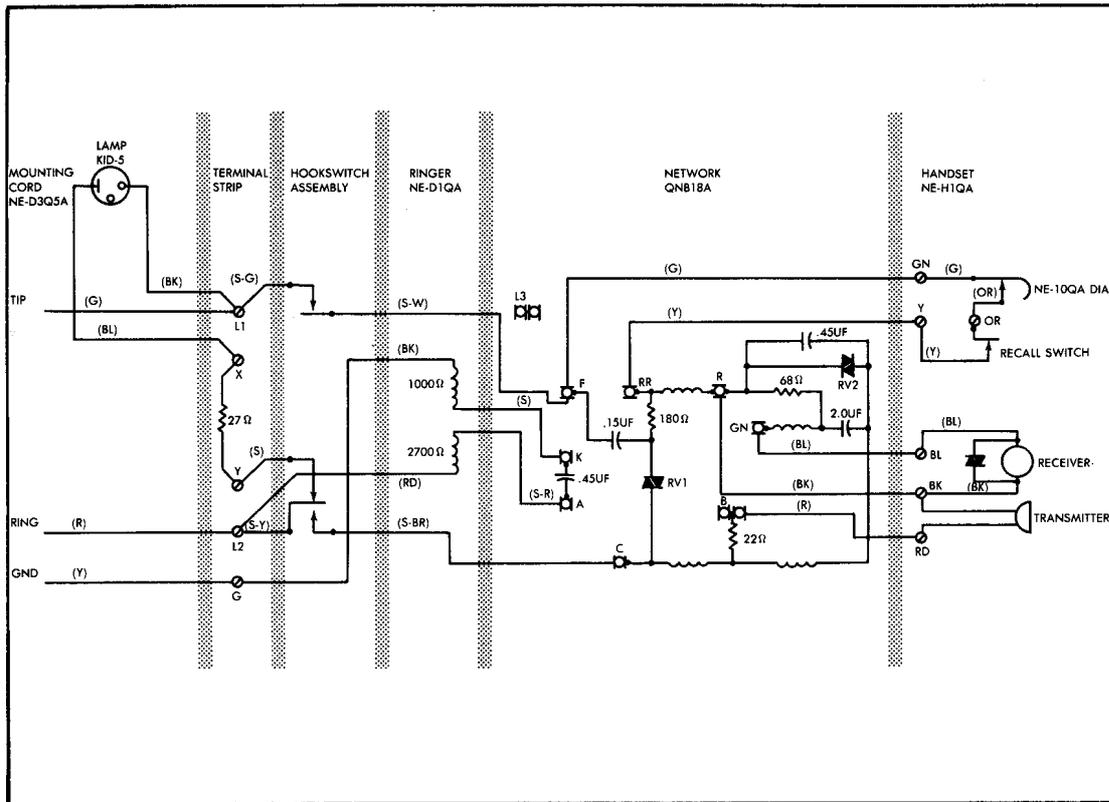


FIGURE 18. QSK100B Telephone Set—Connections Message Waiting, Single Line, Rotary Dial

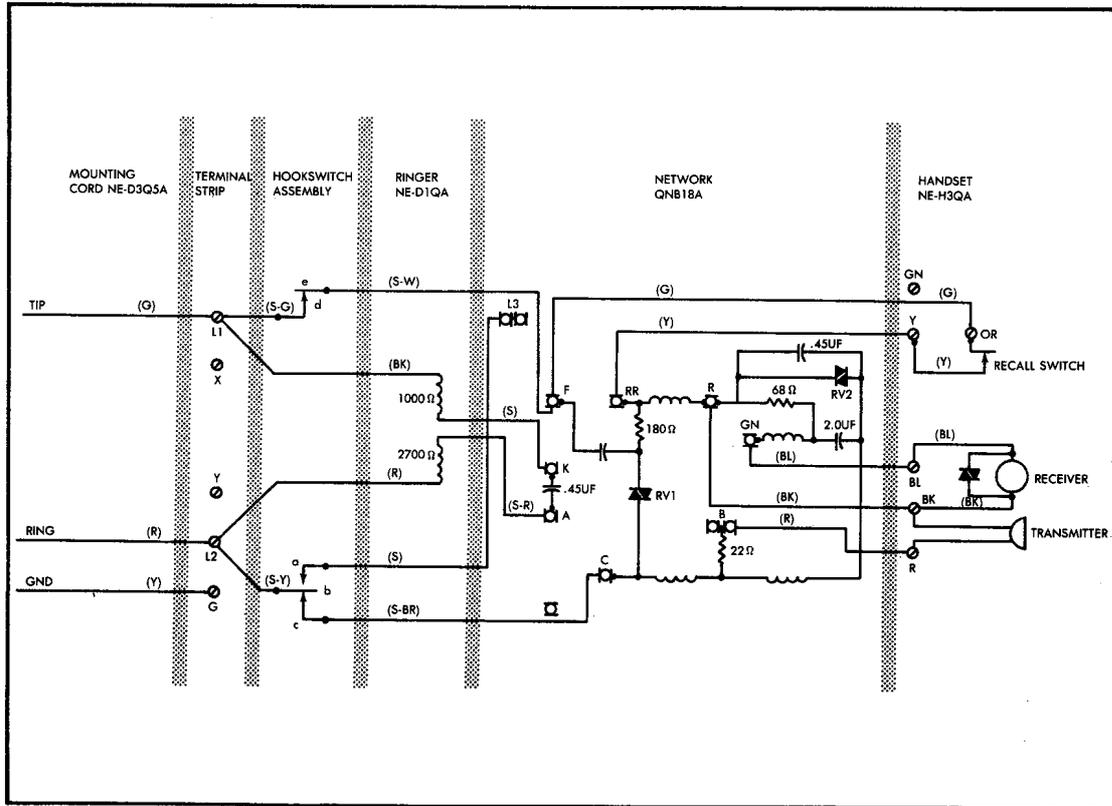


FIGURE 19. QSK100C Telephone Set—Connections Manual, Single Line, Rotary Dial

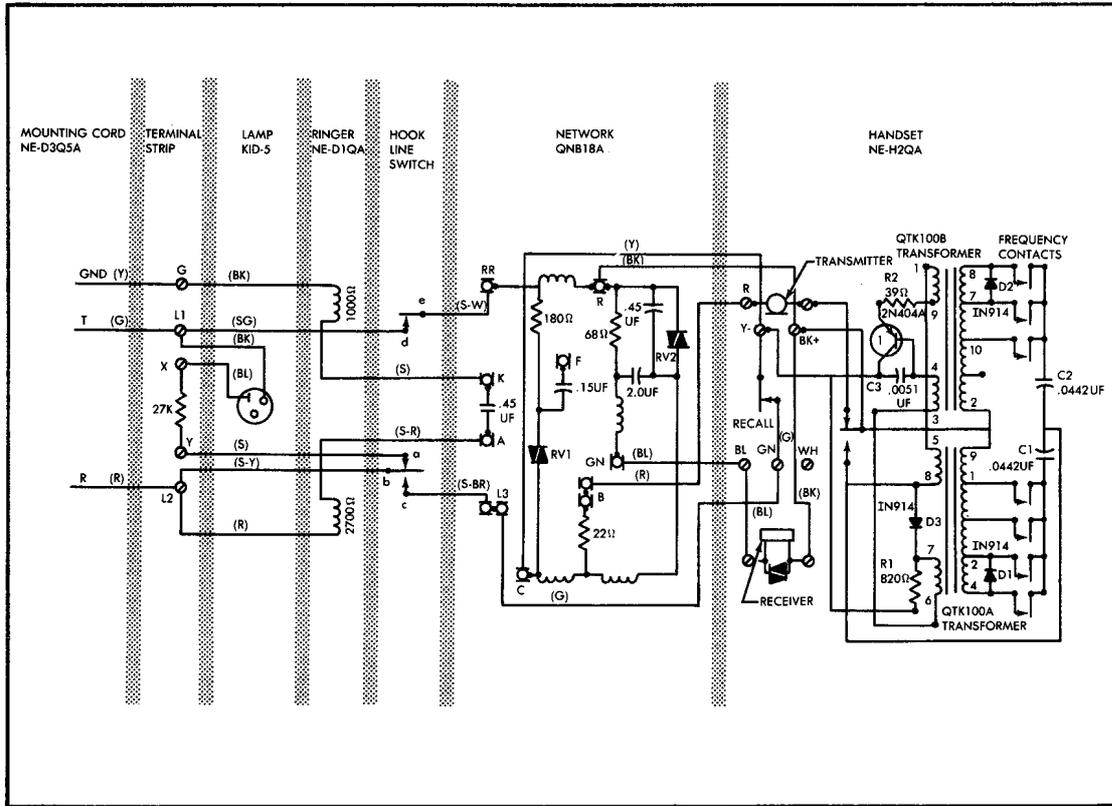


FIGURE 21. QSK2100B Telephone Set—Connections Message Waiting, Single Line, Digitone Dial

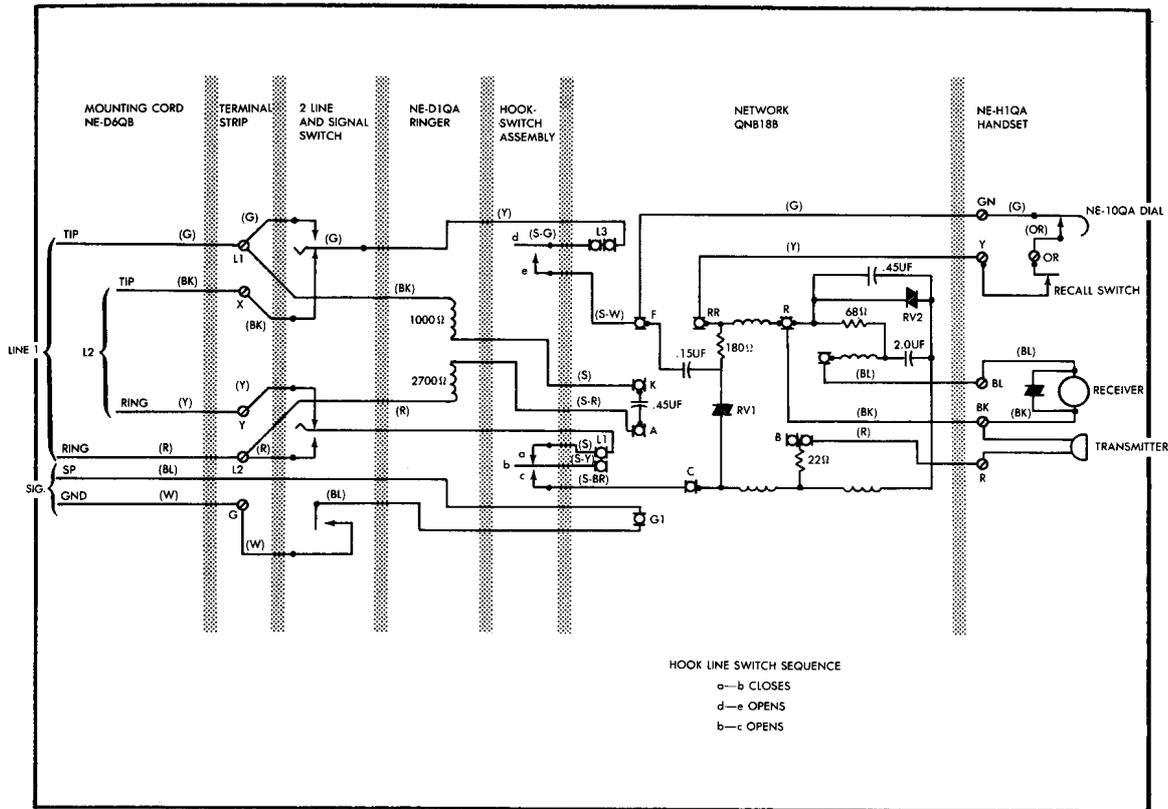


FIGURE 22. QSK110 Telephone Set—Connections Two Line, Rotary Dial

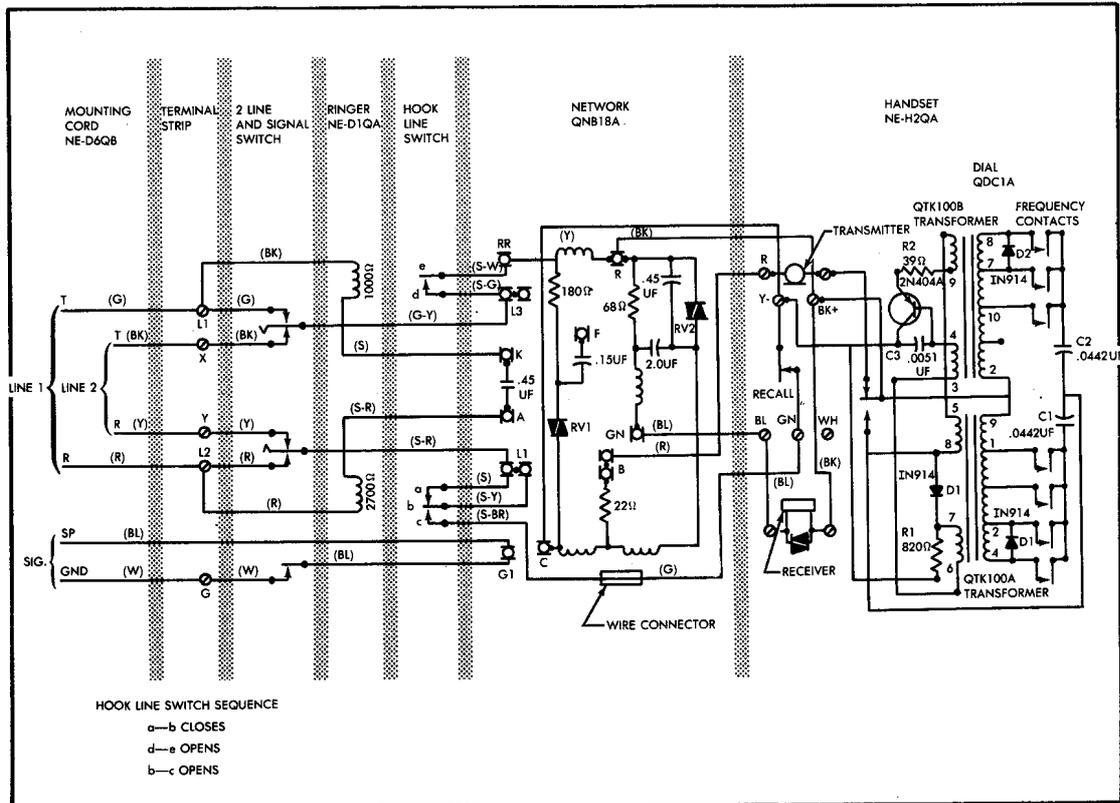


FIGURE 23. QSK2110A Telephone Set—Connections Two Line, Digitone Dial

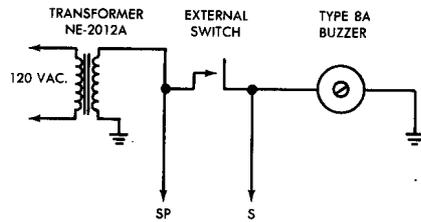


FIGURE 24. Typical Connections for Type 8A Buzzer

**TABLE A. Major Components of the QSK100
and QSK2100 Type Telephone Sets**

Item Number	Identification	Description	QSK 100A*	QSK 100B*	QSK 100C*	QSK 110A*	QSK 191A*	QSK 2100A*	QSK 2100B*	QSK 2110A*	QSK 2191A*	Shown On
1	P096D200-299*	Housing Assembly	1				•				1	Fig. 7
	P0891200-299*	(Base)		1	1					1		Fig. 7
	P0891400-499*	(Base)				1				1		Fig. 7
2	P096D314	Baseplate	1	1	1	1	1	1	1	1	1	Fig. 7
	P0897581	Baseplate				1				1		Fig. 7
3	NE-D1QA	Ringer	1	1	1	1		1	1	1		Fig. 7
4	P0897534	Ringer Mounting Bracket					1				1	Fig. 8
5	P096D337	Line Switch Operating Plunger Assy.	1	1	1	1	1	1	1	1	1	Fig. 7
6	P0894971	Line Switch Assy.	1	1	1	1	1	1	1	1	1	Fig. 7
7	P096D326	Foot	4	4	4	4	4	4	4	4	4	Fig. 7
8	P096D303	Terminal Strip Assembly										Fig. 7
9	QNB18A	Network	1	1	1		1	1	1		1	Fig. 7
	QNB18B	Network				1				1		Fig. 7
10	P096D322	Spring	1	1	1	1	1	1	1	1	1	Fig. 7
11	P0892000-099*	Handset Cover Assy.	1	1	1	1	1	1	1	1	1	Fig. 5, 6
12	P0892100-199*	Handset Instrument	1	1	1	1	1			1		Fig. 5
13	P0892200-299*	Section Assembly			1			1	1	1	1	Fig. 6
14	P0896855	Inset Assembly			1					1		Fig. 4
15	P0897585	Switch Assembly				1				1		Fig. 7
17	NE-10QA	Dial (Rotary)	1	1		1	1					Fig. 5
18	QDC1A	Dial (DIGITONE)						1	1	1	1	Fig. 6
19	NE-T1	Transmitter Unit	1	1	1	1	1	1	1	1	1	Fig. 5, 6
20	NE-U1	Receiver Unit	1	1	1	1	1	1	1	1	1	Fig. 5, 6
21	NE-H5QE*	Handset Cord	1	1	1	1	1	1	1	1	1	Fig. 5, 6
22	P096D309	Transmitter Cup	1	1		1	1					Fig. 5
23	P0895021	Assembly			1			1	1	1	1	Fig. 6
24	P096E700-799*	Dial Center Disc	1	1	1	1	1			1	1	Fig. 1
25	P096D313	Card Holder Window	2	2	2	2	2	2	2	2	2	Fig. 1, 2
Not Shown	P0896532	Card Holder Group (Contents of 2-P-96D313)										Fig. 1, 2
26	P096D305	Receiver Cup	1	1	1	1	1	1	1	1	1	Fig. 5, 6
27	NE-D305A*	5 Ft. 6 In. Cord for Individual and 2-Party Line (Note 1)	1	1	1		1	1	1		1	Fig. 7
	NE-D40C*	Cord for NE-1A1 Key System (Note 1) (Standard on QSK110 and QSK2110) (Note 1)				1				1		Fig. 7
28	K1D-5	Lamp—Message Waiting		1		1			1			Fig. 7 Fig. 3

NOTE 1: The NE-D40C and the NE-D6QB cord is available in the standard 5 foot 6 inch length, while the NE-D40C is also available in a non-standard 13 foot length by special order. Both cords must be ordered separately except in the case of the QSK110 and QSK2110 which come equipped with an NE-D6QB cord, 5 foot 6 inches long.

* Replace the last two digits of piece part numbered items with color identification code, as listed in paragraph 3.03 e.g., P096D220—Housing Assy, warm white. For coded apparatus add the color identification code after the dash following the apparatus code number, e.g., QSK100A-20.