

## TELEPHONE SET

## QSK100AX AND QSK2100AX

## "CONTEMPRA" \*

## 1. GENERAL

1.01 This section covers description, identification, installation, connection and maintenance information for the QSK100AX and the QSK2100AX Contempra Telephone Sets.

1.02 These sets are significantly different in that the dials are located in the handset.

1.03 The QSK100AX has a rotary dial while the QSK2100AX contains a Touch-Tone Dial.

1.04 Use H3QA Handset for manual service. See Fig. 11 for handset connections.

1.05 This section is reissued to make minor revisions and add connection information for 3A Speakerphone System.

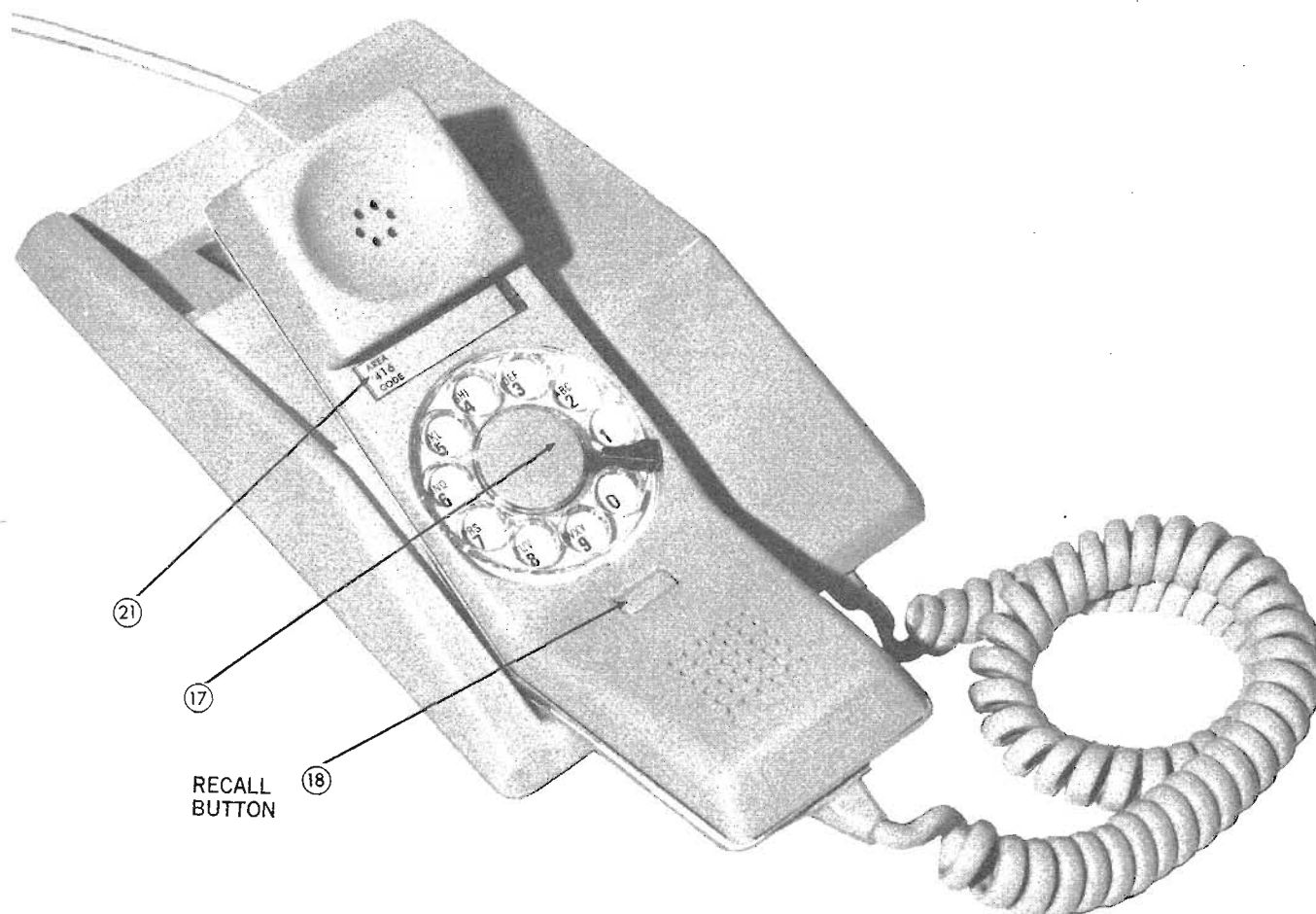


Fig. 1 — Desk Mounted "Off-Hook" Position QSK100AX

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## 2. DESCRIPTION

**2.01** The QSK100AX, a two-piece telephone set (Fig. 1), consisting of base and handset 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 using the mounting holes in the baseplate.

**2.02** The rotary dial, provided as a component of the handset, is smaller in diameter than the dials in general use. A moveable fingerstop is a feature of the dial that allows the normal space between the "1" and "0" fingerholes of the fingerwheel to be reduced resulting in a more compact dial.

**2.03** A 3 Conductor Mounting Cord is provided with the set. Other mounting cords, if

required, may be ordered separately. The code of the cord varies with the service to be provided. (See Para. 3.03).

**2.04** The QSK2100AX Touch-Tone version is shown in Fig. 1A.

**2.05** When these sets are used as a desk set, the handset, when in place, rests in the recess provided in the base of the set. When 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.

**2.06** The transmission circuit is the same as for the 500-type set.

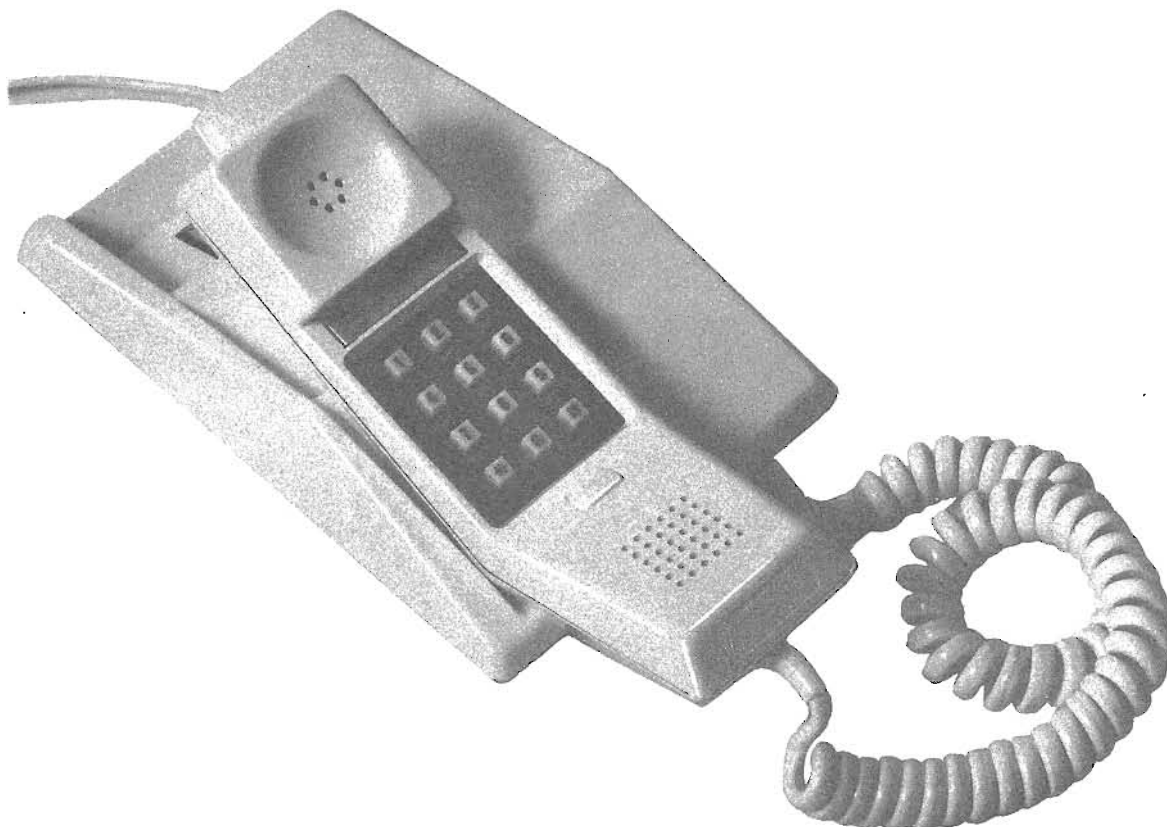


Fig. 1A — Desk Mounted QSK2100AX "Off-Hook" Position

### 3. IDENTIFICATION

**3.01** The telephone set is furnished wired for individual service. Wiring changes are made to allow its use for the following services:



- Tip party flat rate service.
- Ring party flat rate service.
- Use with 1A1 and 1A2 Key Systems.
- Not to be used for Tip Party A.N.I.

- DEEP TURQUOISE — 21
- MAUVE — 22
- BRIGHT RED — 23
- PALE YELLOW — 24
- DEEP BLUE — 25
- IVORY — 50
- GREEN — 51
- BEIGE — 60

**3.02** The telephone set is available in the following colours:

- WARM WHITE — 20

**3.03** Identification of Parts:  
(See Table A)

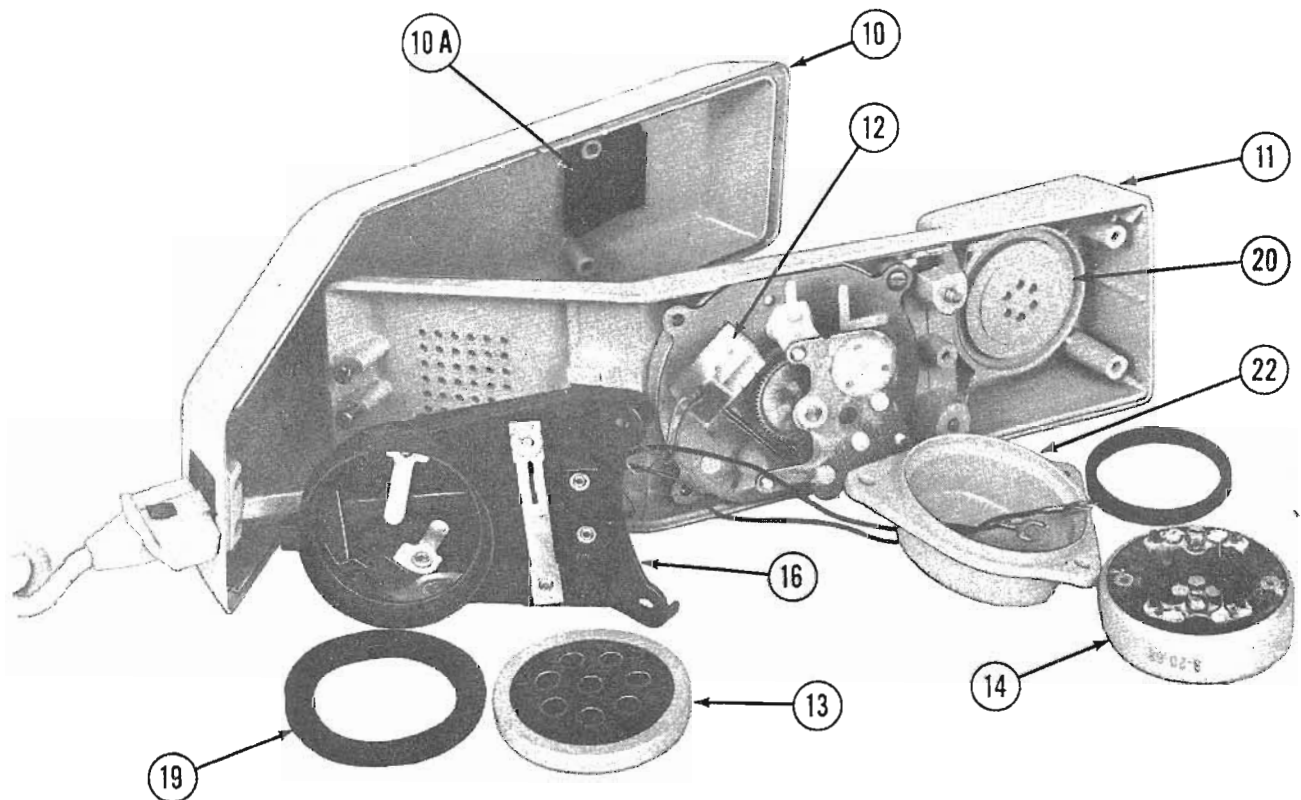


Fig. 2 — Parts, Handset Assembly QSK100AX

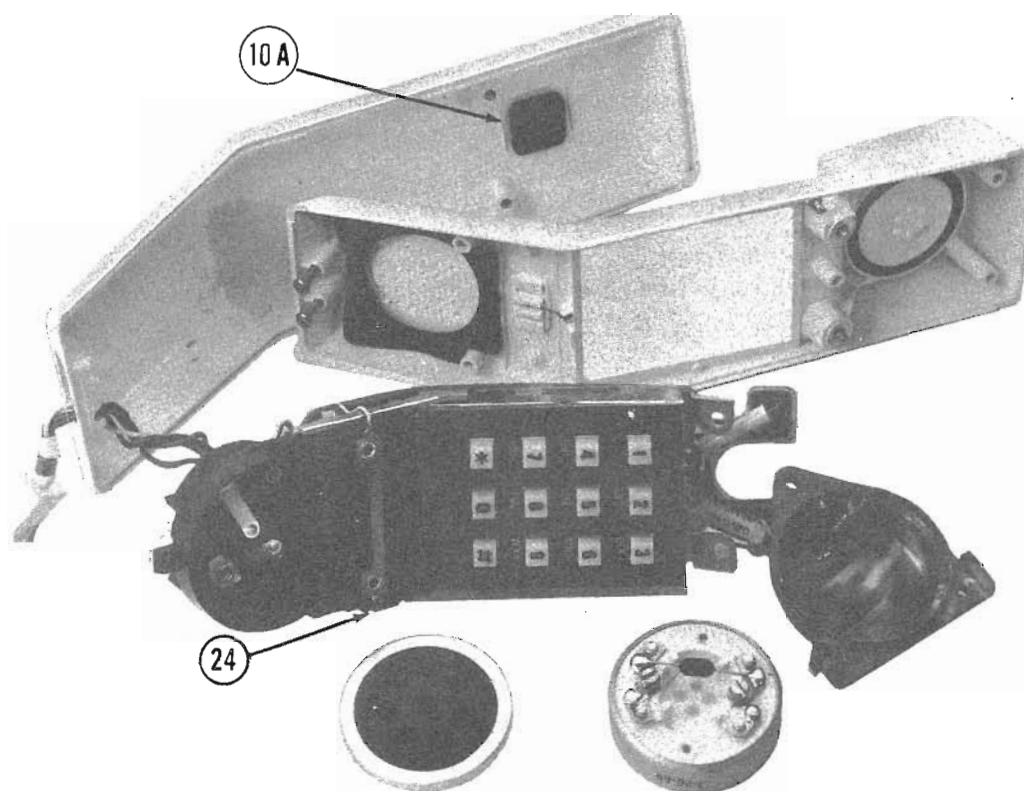


Fig. 2A — Parts Handset Assembly QSK2100AX

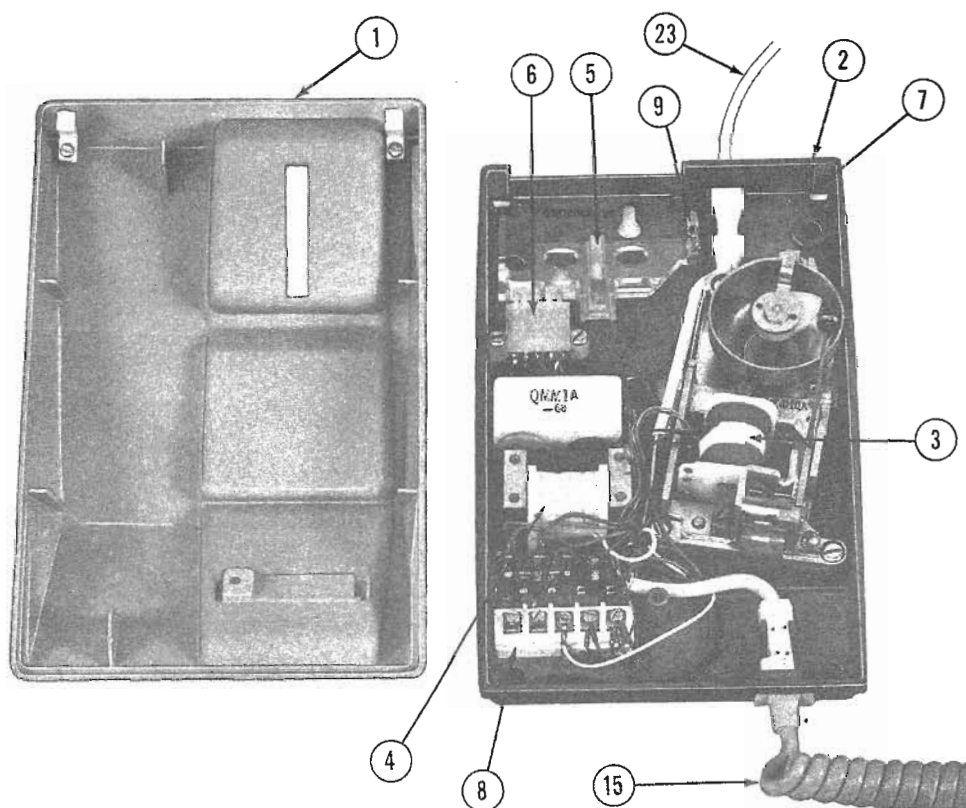


Fig. 3 — Parts, Base Assembly

TABLE A

DETAIL	CODE	DESCRIPTION	REMARKS
1		HOUSING (BASE)	FIG. 3
2		BASE PLATE	"
3	D1QA	RINGER	"
4		NETWORK	"
5	PO96D337	LEVER SWITCHHOOK	"
6	PO894971	ASSEMBLY CONTACT SWITCHHOOK	"
7	PO96D326	FOOT	"
8		ASSEM TERMINAL STRIP	"
9	PO96D322	SPRING	"
10		HANDSET COVER	FIG. 2
10A		PAD	FIG. 2A
11		HANDSET INSTRUMENT SECTION	FIG. 2
12	10QAX	DIAL	"
13	T1	UNIT TRANSMITTER	"
14	U1	UNIT RECEIVER	"
15	H5QE-*	CORD HANDSET	FIG. 3
16	PO96D309	ASSEM TRANSMITTER CUP	FIG. 2
17	PO96E700 to 799*	DISC CENTRE DIAL	FIG. 1
18		RECALL BUTTON	"
19		GASKET TRANSMITTER	FIG. 2
20		GASKET RECEIVER	"
21	PO96D313	CARD HOLDER WINDOW	FIG. 1
22		RECEIVER BRACKET	FIG. 2
23	D3Q5A-*	5' 6" CORD	} NOTE 1 NOTE 2 FIG. 3
	D4QC-*	CORD	
	D6QB	CORD	
24	PO896593	ASSEMBLY DIAL (Includes Transmitter Cup)	FIG. 2A

NOTE 1: D4QC cords are available in 5 ft. 6 in. and 13 ft. lengths and will be ordered as required for 1A1 Key Systems or when individual or 2-Party installation includes 13 ft. cord.

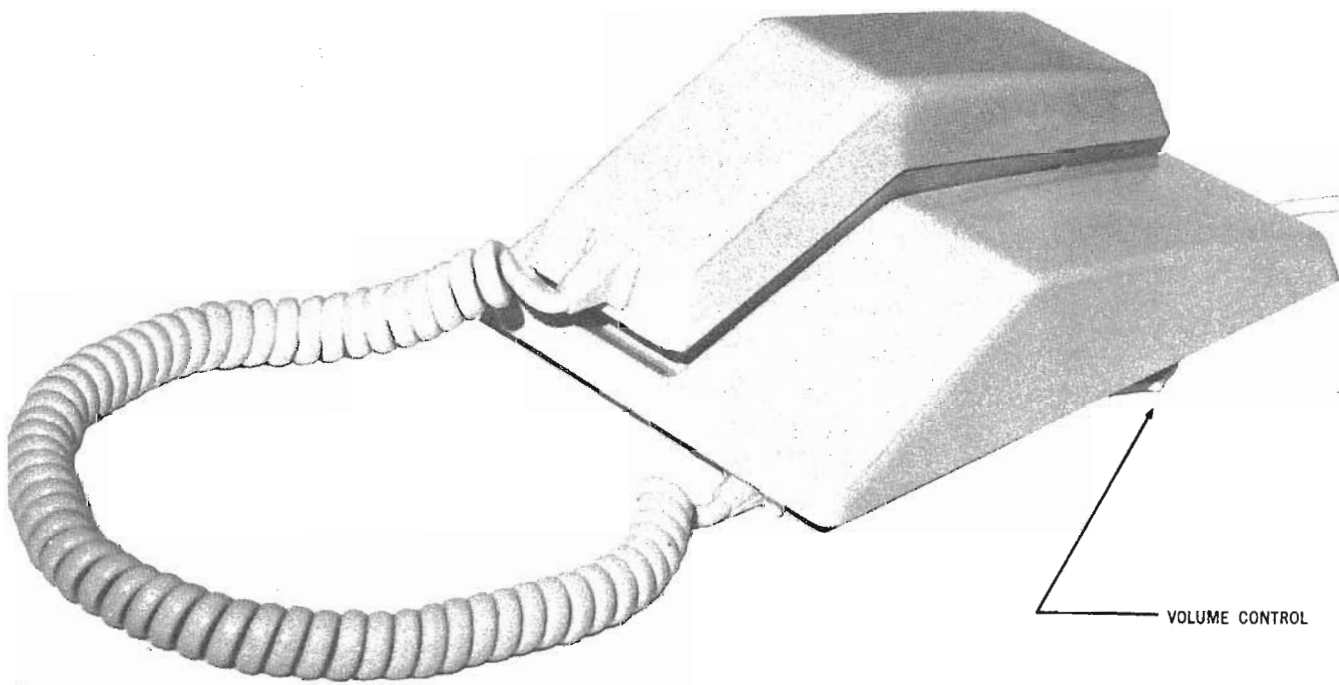
NOTE 2: D6QB cords are available in 5 ft. 6 in. and 13 ft. lengths and will be ordered as required for 3A Speakerphone connections. The black lead will be spare and should be insulated.

\* COLOUR SIGNIFICANT: Colour identification code replaces last two digits of P-numbered parts and is added to cord codes.

**3.04** The telephone sets have a printed circuit-type network, QNB18A, that is equipped with quick connect type terminals. Connections are made by pushing the spade tips into spring-type clips on either side of the terminal. To avoid damage to the leads, use longnose pliers and a slight sideways rocking motion when connecting or disconnecting. *Use caution to assure shank of clip is not bent.*

**3.05** Located in the handset is the recall button which can be used to disconnect for re-dialing, thus eliminating the need to operate the switchhook on each call.

**3.06** To adjust the ringer volume, a wheel that protrudes through the baseplate at the side of the set, has been provided. Moving a screw will allow this wheel to completely silence the ringer. However, ringer cut-off must not be provided unless authorized by a service order. (see Para. 4.04).



**Fig. 4 — Location of Ringer Volume Control Wheel**

#### 4. INSTALLATION

4.01 Selection of location and general installation shall be as covered in Sections

502-120-200 and 502-120-201, respectively. However, as the set is a combined desk-wall telephone, additional information is provided.

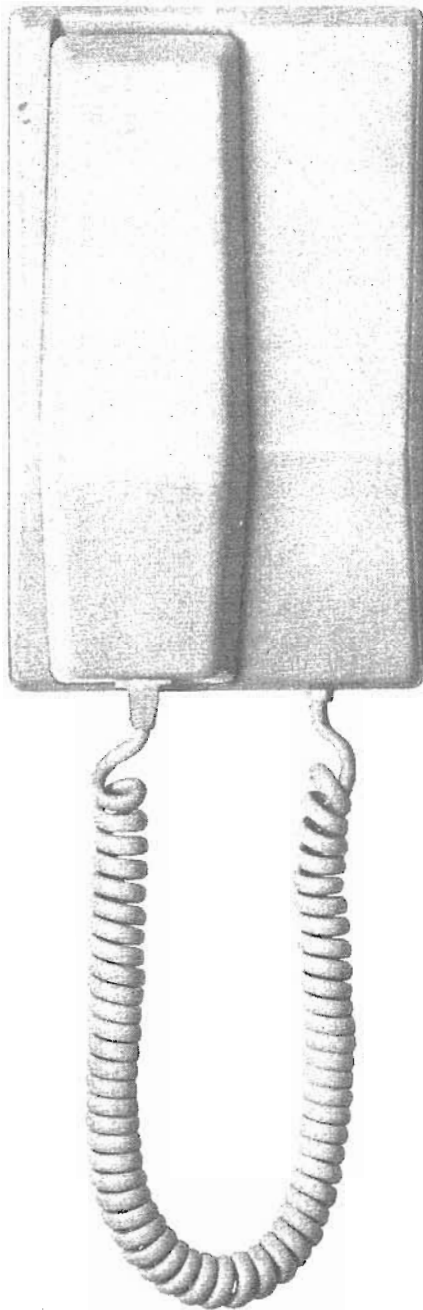


Fig. 5A — Wall Mounted "On Hook"

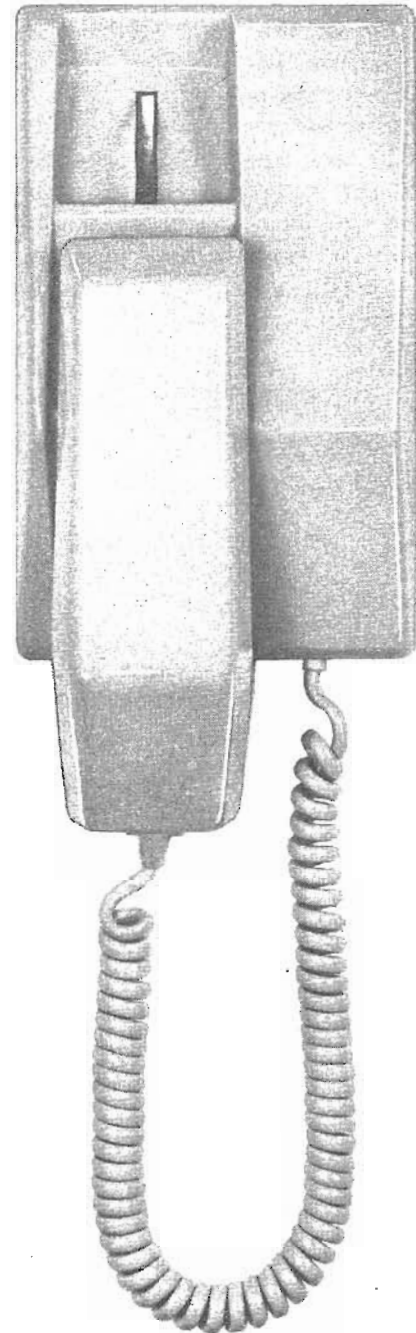


Fig. 5B — Wall Mounted "Off Hook"

## 4.02 DISASSEMBLY

**To Remove the Moulded Housing From the Base:**

- (a) Remove card retainer (or window), located near the front of the housing.

To remove card retainer, insert the tip of the NS16750 List 2 releaser into the small slotted hole at the edge of the 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 Fig. 6). 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.

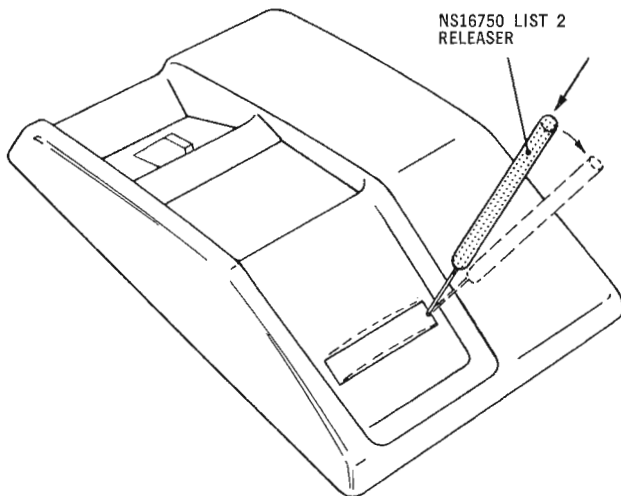


Fig. 6 — Removal of Card Retainer

- (b) Remove the number card, if present.
- (c) Loosen the exposed captive screw and run it out sufficiently so that the front of the housing may be lifted free of the base.
- (d) Continued lifting of the cover enables the housing latches to disengage and free the cover.

**To Open the Handset:**

- (a) Remove the card retainer and the number card located above the dial.
- (b) Remove the handset grommet by holding the handset with the back or smooth section in the palm of the hand. Insert about 1/16"

of the tip of the NS16750 List 2 releaser into the small slot adjacent to the grommet (See Fig. 7). 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 release tool away from the grommet to release the returning spring and gently ease the grommet out of the handset shell.

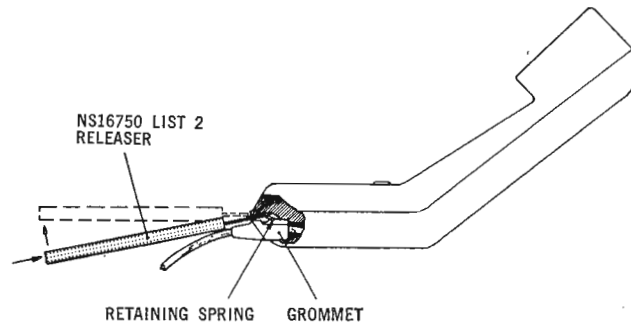


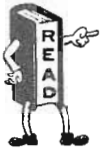
Fig. 7 — Removal of Handset Grommet

- (c) Once the grommet has been withdrawn, two screws are exposed. Loosen these two screws by about 3/16" only, as it is not desirable or necessary to remove them.
- (d) Free (do not remove) the two captive screws in the card 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.

**Installation of Line Mounting Cord (D3Q5A)**

- (a) Enter the spade tipped leads at the grommeted end of the line cord through the square hole in the edge of the base.
- (b) Push the grommet through the opening so that the narrow section aligns with the square projections directly in front of the grommet entry.
- (c) Push the grommet firmly down to engage between projections.
- (d) Press the jacketed portion of the cord into the channel beside the D1QA ringer and between the projections located about mid-point 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, per Table B or D.



**4.03 WALL MOUNTED**

***Ensure that the Right Side of Set is Located Far Enough from Moulding or Door Frames to Permit Operation of Ringer Volume Control.***

Remove line cord. The centre key opening in the base is normally used for the entry of the station wiring.

**Note:** Return the line cord to the storeroom in the plastic bag provided to protect the handset.

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 centre 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 indent adjacent to the centre key and giving the screwdriver a sharp knock downward. This action will shear out an additional opening leading into the centre key.

If a mounting screw fails to hold, knock-outs can be made, as above, 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 knock-outs 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 the wire entry by removing the handset cord grommet from the base, rotating it 180° and replacing it.

**4.04** To provide the ringer cut-off feature (authorized by service order), 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.

**4.05 REASSEMBLY****Base**

- (a) Dress line cord leads and other wiring away from the housing retaining screw post on the base of the telephone set.
- (b) Locate housing at an angle to the base as shown in Fig. 8.
- (c) Press rear of housing down and towards the back of the base to engage the housing latches with the notches in the base.
- (d) Push front of housing down, ensuring that latches remain in notches, so that the retaining screw enters the tapped post in the base.
- (e) Carefully tighten the screw snugly, without undue force.
- (f) Insert a station card number and the retainer window in the well in the base.

**Handset**

- (a) 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.



- (b) ***Dress Receiver Leads Through Clip To Prevent Interference With Dial QSK100AX Set Only.***

- (c) Slide the two handset sections together so that the two slots at the grommet end slide over the two screws in the apparatus section.
- (d) Carefully align sections so that the two screws in the number plate slot will engage the tapped post holes in the other section.
- (e) Tighten screws; two in the grommet cut-out and two in the number plate well. Tighten the screws snugly without undue force.

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

(g) Insert a station number card and retainer window into the well on the handset.

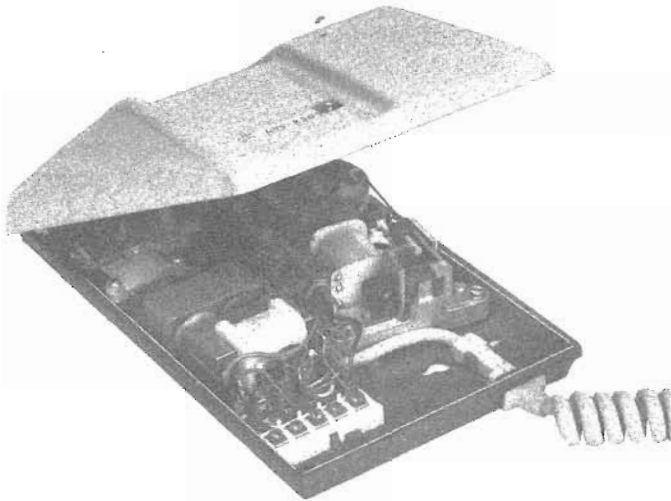


Fig. 8

**4.06** If unable to dial after completing installation check line polarity as Touch-Tone Dial will only function when polarity is correct.

#### 4.07 DIAL RESTRICTION

##### QSK100AX Telephone Set

- (a) Connect IN4384 diode between GN and OR terminals of the handset.
- (b) Assume negative battery is on ring and ground is on tip of dialing circuit. With the arrow on diode pointing toward OR terminal, all lines will be restricted. Reverse tip and ring of line, or lines, on which dialing is required. This will remove shunt from across pulsing contacts on these lines.
- (c) With arrow on diode pointed toward GN terminal, no line will be restricted. Reverse tip and ring of line, or lines, on which dialing is to be restricted. This will shunt pulsing contacts on these lines.

## 5. MAINTENANCE

**5.01** Normal maintenance will involve replacement of the following parts. (See Para. 3.03 for identification of parts.)

- DIAL (QSK100AX Only)
- CORDS
- TRANSMITTER
- RECEIVER
- FEET
- SWITCHHOOK (See Caution Note)
- TRANSMITTER CUP (QSK100AX only)
- ASSEMBLY DIAL (includes Transmitter cup) (QSK2100AX Only)

*Caution: Hookswitches and Recall switches in Contempra telephones must not be burnished, as this destroys the gold plating. Use bond paper or contact spray. If these methods fail, replace telephone set.*



*Dial Maintenance consists only of determining if the dial is defective. Do not attempt adjustments of the dial in the field.*

**5.02** To replace Rotary Dial:

- See Para. 4.02 for instructions on opening of handset.
- Remove dial leads from terminals located on transmitter cup.
- Remove 4 mounting screws.
- Replace dial.
- See Para. 4.05 for instructions on reassembly of handset.

**5.03** To replace dial assembly (Touch-Tone).

- See Para. 4.02 for opening of handset.
- Disconnect handset cord and receiver leads.
- Remove 1 screw from each side of transmitter cup.
- The dial and transmitter cup assembly may then be replaced.
- Replace receiver leads and handset cord wiring.

**5.04 To replace transmitter:**

- Open handset (see Para. 4.02).
- Remove the 2 screws holding the transmitter cup.
- Lift transmitter cup and replace transmitter.
- Close handset. (Para. 4.05).

**5.05 To replace receiver:**

- Open handset (see Para. 4.02).
- Remove 3 screws holding receiver bracket.
- Slide bracket along the leads.
- Disconnect and replace receiver unit.
- See Para. 4.05 for reassembly of handset.

**5.06 Finger Wheel**

Should finger wheel require replacement, replace the complete dial as replacement in the field may result in permanent damage to the dial. The finger-wheel need not be removed for number tag insertion.

**5.07 Disc Centre Dial**

Insert the NS16750 L2 releaser in the small hole adjacent to the number 5 hole and pry disc off.

**5.08 Ringer**

- Open base (see Para. 4.02).
- Loosen screw in volume control and remove ringer mounting screws.
- Replace ringer.

**5.09 Cord Mounting**

- Mounting cord replacement covered in Para. 4.02.

**5.10 Cord (Touch-Tone Handset)**

- The outer sheath of the handset cord must be cut back to within 1 inch of the handset grommet. (see Figs. 9 and 10).
- See Tables C and D for base and handset connections.

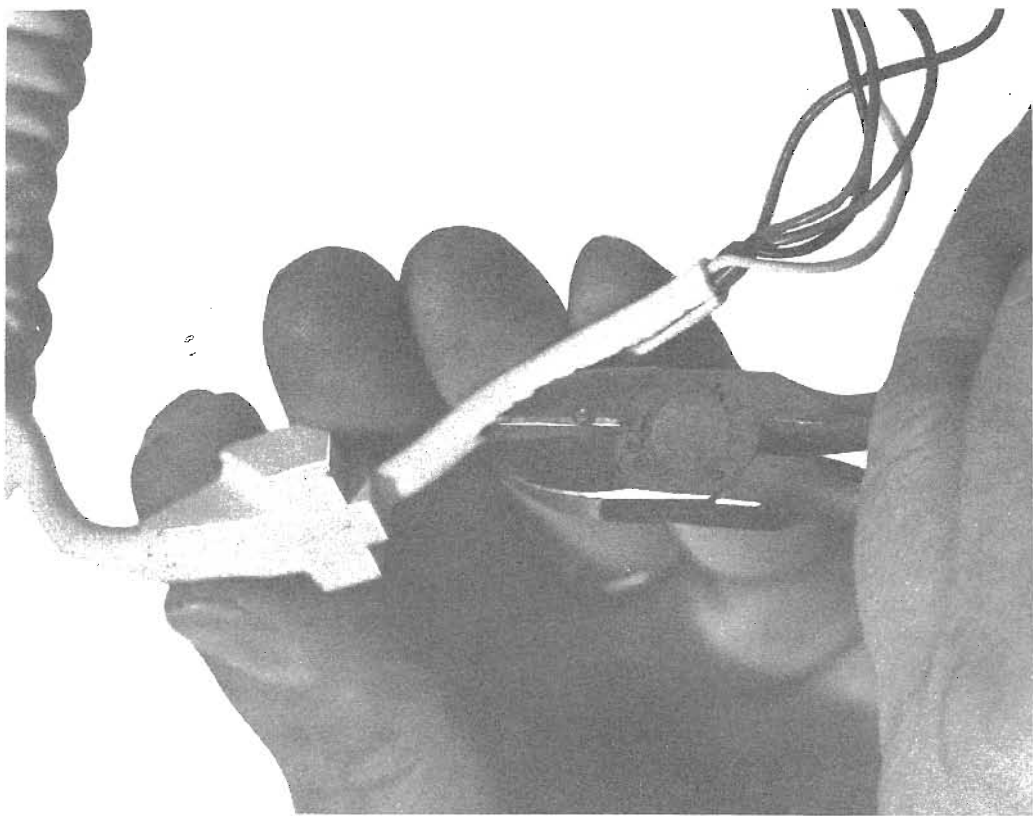


Fig. 9 — Slitting Sheath

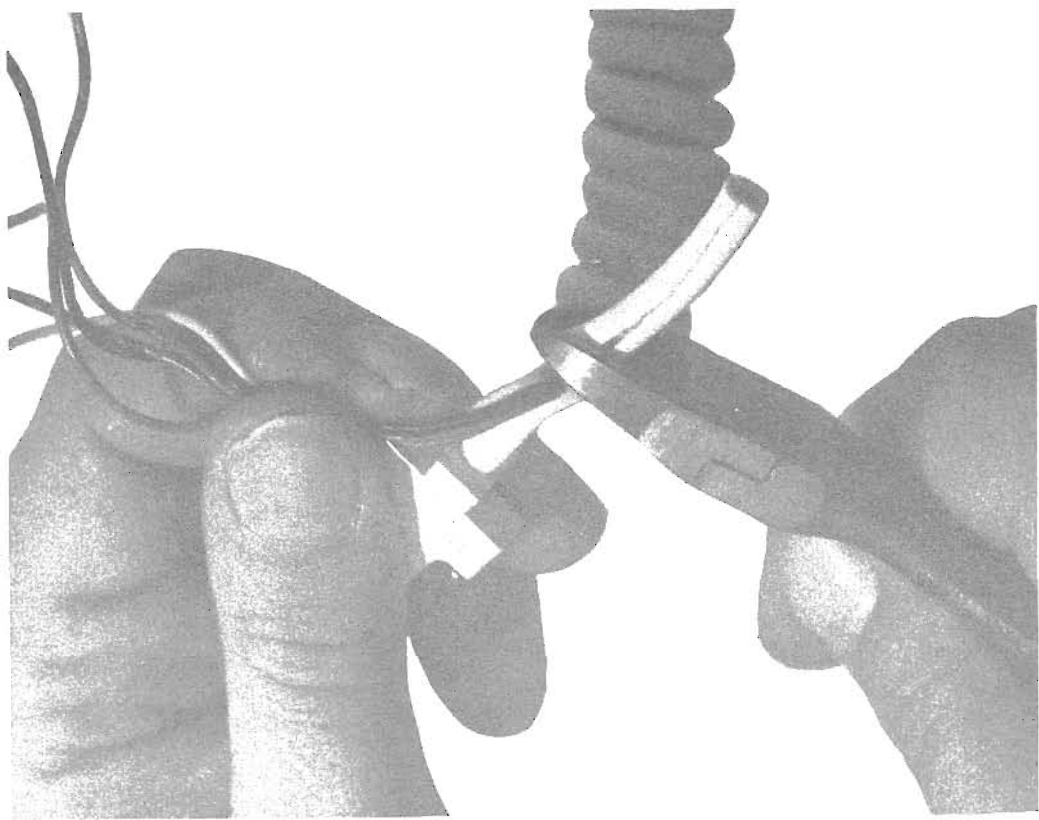


Fig. 10 — Cutting Sheath

TABLE B — ROTARY

QSK100AX Set Wiring	Lead Designation	Colour	Individual or Bridged	Ring Party	TIP Party	1A1 Key System	3A Speaker Phone System
Ringer Leads		R BK S S-R	L2 L1 K A	L2 G K A	L2 G K A	C L1 K A	C L1 K A
Switchhook LEADS		S S-Y S-BR	L3 L2 C	L3 L2 C	L3 L2 C	L3 G L2	L2 Y G
LINE WIRING Private & Party Line Common Battery	TIP RING GRD	G R Y	L1 L2 G	L1 L2 G	L2 L1 G		
1A1 Key System	TIP RING A A1	G R Y BK				L1 C* G L2	
3A Speakerphone SYSTEM See Notes 1 and 2 below Table E.	TIP RING A1 AG LK	G R Y BL W					L1 C** Y G L2

\* For wall mounted sets, connect the Ring (red) incoming line to Y on terminal strip and strap Y to C of network using an M1W Cord.

\*\* For wall mounted sets, connect the Ring (red) incoming line to X on terminal strip and strap X to C of network using a M1W Cord.

TABLE C

QSK100AX		
H5QE Cord Colour	Base	Handset
G Y BL BK R	F RR GN R B	GN Y BL BK R

TABLE D — TOUCH-TONE

QSK100AX Set Wiring	Lead Designation	Colour	Individual or Bridged	Party Ring	Tip Party	1A1 Key System	3A Speaker Phone System
Ringer Leads		R BK S S-R	L2 L1 K A	L2 G K A	G L1 K A	X L1 K A	X L1 K A
Switchhook LEADS		S S-Y S-BR	L3 L2 X	L3 L2 X	L3 L2 X	L3 G L2	L2 Y G
LINE WIRING Private & Party Line Common Battery	TIP RING GRD	G R Y	L1 L2 G	L1 L2 G	L1 L2 G		
1A1 Key System	TIP RING A A1	G R Y BK				L1 X* G L2	
3A Speakerphone SYSTEM See Notes 1 and 2 below.	TIP RING A1 AG LK	G R Y BL W					L1 X Y G L2

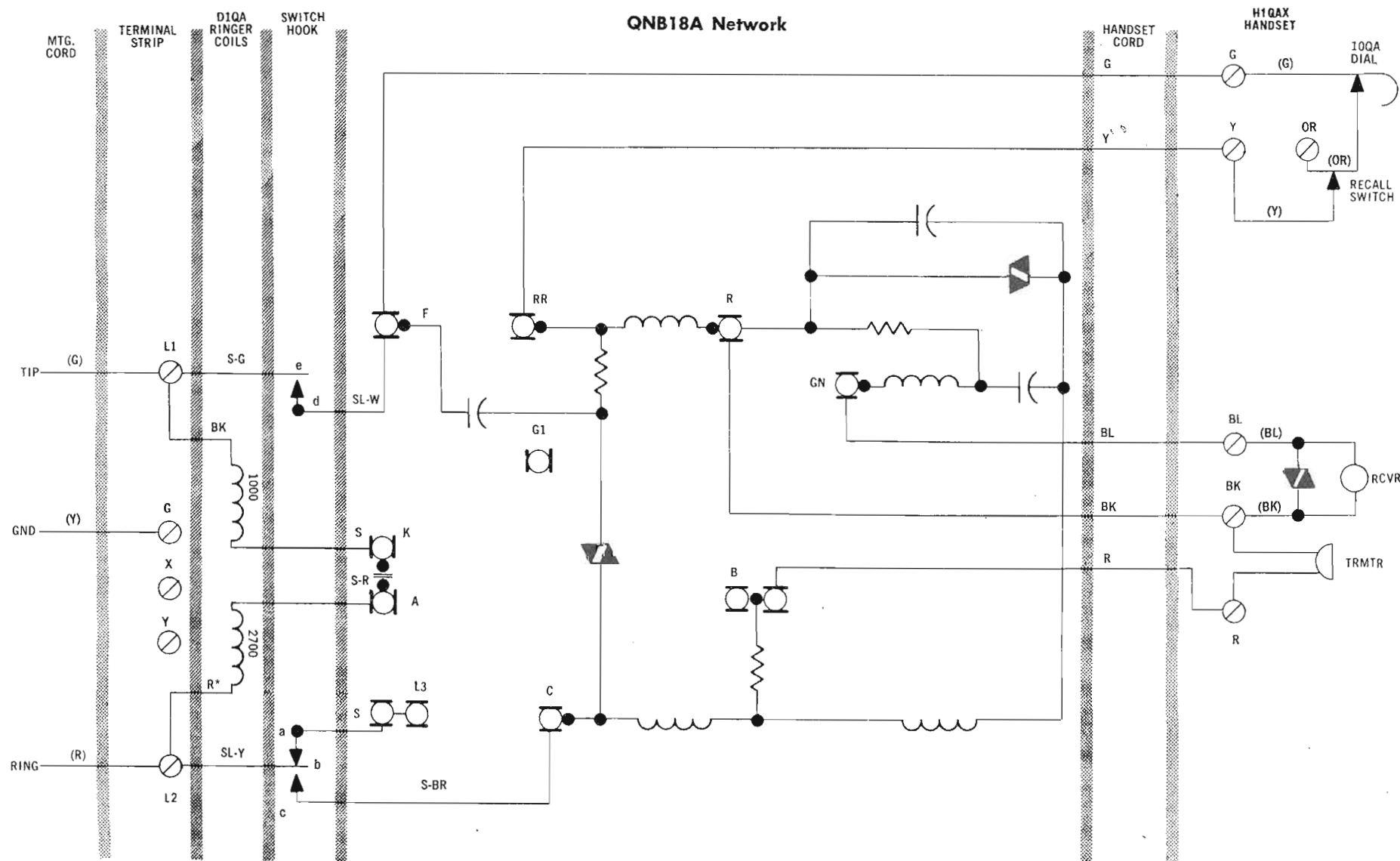
\* For wall mounted set, connect the Ring (red) incoming line to Y on terminal strip and strap Y to X using an M1W Cord.

TABLE E

QSK2100AX SET		
H5QE Cord Colour	Base	Handset
G	X	GN
Y	C	Y
BL	GN	BL
BK	R	BK
R	B	R

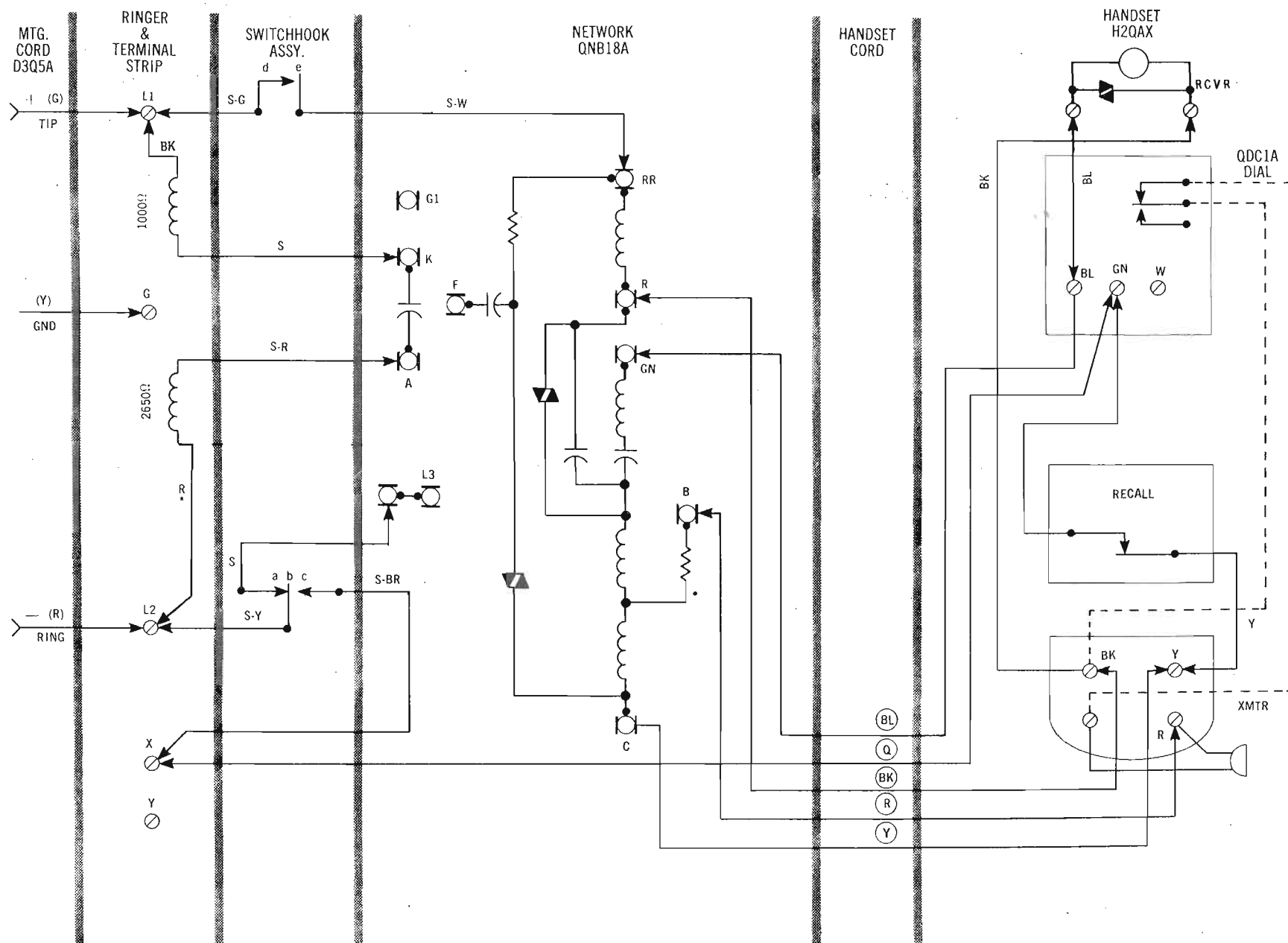
**Notes:**

- For 3A Speakerphone connections, the D6QB line cord is necessary. The black lead should be insulated.
- When using QSK100 telephone or QSK2100 telephone set with 3 type speakerphone, make outgoing calls with handset off-hook and transfer to the speakerphone when dialing is complete. To transfer depress the "ON" button of the 666 type transmitter and hold it down until the handset is returned to the base.



\*EARLY MODELS MAY HAVE R LEAD  
CONNECTED TO L3.

Fig. 11 — Schematic for Individual Line QSK100AX Rotary Dial  
(See Table B for other uses)



\*EARLY MODELS MAY HAVE R LEAD  
CONNECTED TO L3.

Fig. 12 — QSK 2100 AX Touch-Tone  
Bridged Individual