

“LOGIC 10*” KEY TELEPHONE SETS

QSK200B AND QSK2200B

INSTALLATION MANUAL



Fig. 1 — QSK200B Key Telephone Set



Fig. 2 — QSK2200B Key Telephone Set

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1. GENERAL

1.01 The QSK200B and QSK2200B LOGIC 10 telephone sets (Fig. 1 and 2) are 10 button sets featuring one common hold button and a maximum of nine line pickup buttons. If less than 9 lines are used, the extra line pickup buttons may be used for additional features (e.g., add-on or individual signaling).

1.02 The QSK200B and QSK2200B telephone sets are identical except that the QSK200B

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telephone set is equipped with a QDB1N rotary dial while the QSK2200B telephone set is equipped with a NE-35Q3L1 DIGITONE* multifrequency pushbutton dial.

1.03 The QSK200B and QSK2200B telephone sets are designed for use with the NE-1A1, NE-1A2, or NE-6A key telephone systems (KTS). The sets cannot be used with the NE-1A KTS.

1.04 The QSK200B and QSK2200B telephone sets are designed for desk-top or wall-mounted installation. An accessory bracket for wall-mounting is provided with each set.

1.05 The QSK200B and QSK2200B telephone sets are designed for use with the QSR2 hands-free headset (or equivalent). Each set is equipped with a headset jack on the right side of the housing base and a QMJ7A jack mounting switch (on-off) on the front of the faceplate below the dial. The headset is a subscriber option (see 2.01) and must be ordered separately.

2. OPTIONS

2.01 The following features are subscriber options. Refer to the schematic diagrams (Fig. 5 and 6) and the conductor assignment information (Table A) when converting the telephone set for a particular option as specified below and in Tables B through J.

(a) **Buzzer.** A QBX1A buzzer may be mounted on the left-hand dial mounting bracket. The buzzer should be connected to either the ringer leads or the two spare leads for the station busy lamp option, whichever are not being used. The QBX1A buzzer operates on 10 V ac only.

(b) **Station Busy Lamp.** This feature may be installed to provide station busy lamp indication. Connection information for this feature is given in Table B.

(c) **Ringer Cutoff.** This feature may be provided by bending the stop next to the detent on the ringer volume control until it completely clears the rim of the ringer frame. This provides a further position on the volume control which prevents ringer armature movement.

(d) **Hands-Free Telephone Operation.** The QUS1C COMPANION 3* hands-free unit is designed for use with the QSK200B and QSK2200B telephone sets. The QUS1C unit is physically compatible with the LOGIC 10 sets and is equipped with a 15-pin connection plug for plug-in attachment. The QUS1C plug fits into a matching interconnecting jack which is normally stored within the LOGIC 10 set. When QUS1C operation is desired, the jack must be inserted in the left side of the set housing and the unit and set connected as described in 3.08. An NE-2012B transformer (or equivalent power supply) is required for the QUS1C unit and is connected to the unit through the telephone set (see 3.08).

(e) **External Speakerphone Operation.** An NE-3 type speakerphone may be used with the LOGIC 10 telephone sets. The subscriber must relinquish two line pickup positions to make cord conductors available for speakerphone installation. The QDB1N dial in the QSK200B telephone set provides an additional set of shunting contacts, which in turn provide the dial muting required for NE-3 type speakerphone operation. External speakerphone connection information is given in Table C.

(f) **I Hold Operation.** This feature may be installed in place of the regular hold feature. Connection information is given in Table D.

(g) **Headset Operation.** A QSR2 type headset or equivalent may be installed by making minor changes in the telephone set (see 3.07).

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(h) **Individual Signaling.** Momentary contacts for individual signaling may be obtained by removing the P0514515 locking pin from the key position which is to be converted and making the wiring change given in Table E. The momentary contact under the headset switch may also be used for individual signaling (see Fig. 5 or 6).

(i) **Automatic Exclusion.** This feature may be obtained on one line by using an NE-10A KTU (see Fig. 7). The feature provides automatic cutoff of excluded stations whenever the master station picks up the line associated with the NE-10A KTU.

(j) **Selective Exclusion.** This feature may be obtained by using an NE-229B KTU (see Fig. 8). The feature provides exclusion only if the exclusion pushbutton on the key is depressed momentarily. Any button on the key may be converted for control by removing the appropriate AG lead from terminal 40-45, connecting this lead on terminal 30-32, and removing the P0514515 locking pin. The lamp in the exclusion button lights when the exclusion circuit is in operation. Exclusion is removed automatically when the call is either placed on hold or terminated. The exclusion circuit is compatible with COMPANION 3, headset, or handset operation.

(k) **Add-On Operation.** The add-on feature may be obtained on two lines by using an NE-237B KTU (see Fig. 9 and Table B). Any button may be used but must be made nonlocking by removing the locking pin. The lamp in the add-on button will light when the add-on circuit is in use. The add-on circuit is released by pressing the add-on button again or hanging up the handset. The add-on circuit is compatible with COMPANION 3, headset, or handset operation.

(l) **Ringer.** The ringer feature is connected to position 1 as shipped but may be connected to another position or as a common ringer by changing the wiring according to Table F and connecting to the R-R1 and B-B1 leads at the key equipment.

(m) **Amplifier.** An NE-241QB amplifier may be required when using an NE-52 type or equipment headset. Connection information is given in Table G.

(n) **Voice Station Coupler.** A QCT1A voice station coupler may be installed to provide an automatic answering facility. Connection information for this feature is given in Table H.

(o) **Automatic Dialer.** A variety of automatic dialers are compatible with the LOGIC 10 sets. Connection information is given in Table I.

(p) **Auxiliary Dial.** An NE-1035B3QA station dial may be used with the QSK200B telephone set if computer input of DIGITONE signals is required. Connection information is given in Table J.

3. INSTALLATION

MOUNTING

3.01 For desk-top installation, the sets should be placed in a convenient location on the desk and connected to the appropriate connector cable.

3.02 For vertical surface installation, it is necessary to use the accessory mounting bracket and knurled thumb screw which are supplied with each set. The installation should be performed as follows.

(a) Attach the mounting bracket to the mounting surface using two No. 8 screws or similar mounting hardware. (The mounting hardware must be obtained locally.)

(b) Place the telephone set on the mounting bracket so that the shoulder rivets enter the corresponding keyhole slots in the base of the telephone set (Fig. 10).

(c) Move the telephone set to the left as far as possible so that the lower front mounting hole is in line with the corresponding threaded hole in the telephone set base (Fig. 10).

- (d) Lock the telephone set in place by inserting the knurled thumb screw through the mounting bracket and into the threaded hole in the base of the telephone set and tightening the screw by hand.

3.03 When mounting the telephone set on a vertical surface, the mounting cord is directed downward from the cord exit hole in the base of the set so that it can be fastened to the mounting surface where required.

CONNECTIONS

3.04 Connection information for the QSK200B and QSK2200B telephone sets is shown in Fig. 5 and 6. See Table A for cord assignment information. See Tables B through J for wiring of options.

Caution: *The connection diagrams and tables must be followed closely, since wiring of the QSK200B and QSK2200B telephone sets is not standard due to the limited number of cord conductors available.*

3.05 The faceplate and housing cover must be removed when converting the telephone set wiring for subscriber options.

Removal

- (a) Release the faceplate catch (see Fig. 11) by inserting the NS-16750 L3 releaser into the release hole located on the lower front edge of the housing cover.
- (b) Lift upward and forward on the faceplate until the locating tabs at the rear of the faceplate are disengaged from the housing cover.
- (c) Loosen the two captive retaining screws until they are disengaged from the threaded posts on the housing base. The cover can then be removed.

Replacement

- (a) Place the cover in position.

- (b) Tighten the captive retaining screws.

Caution: *Do not exert undue force when tightening the captive retaining screws.*

- (c) Engage the two tabs at the rear of the faceplate in the housing cover.
- (d) Align the single front catch with the hole in front of the cover, and press until the front catch snaps in place.

3.06 When making the conversions as specified in Tables B through J, the following guidelines should be observed.

- (a) If more connection positions are required than are available, use QCM15A connectors (Fig. 3) for the additional positions.
- (b) If no terminal is available for the connection of two spade-tipped leads, use a QCM12A connector (Fig. 3).

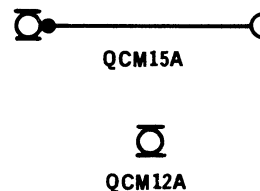


Fig. 3 — QCM15A and QCM12A Connectors

Headset Connection

3.07 If headset operation is required, remove the faceplate and cover per 3.05 and remove the yellow blocking insert (see Fig. 4) from the turn switch by pulling it straight out toward the dial. Insert the headset plug into the jack located on the lower right-hand side of the set and at the same time rotate the control key, located in the lower left-hand corner of the faceplate, 90 degrees in a clockwise direction. Dial tone will be heard in the headset receiver and dialing will be possible without removing the handset.

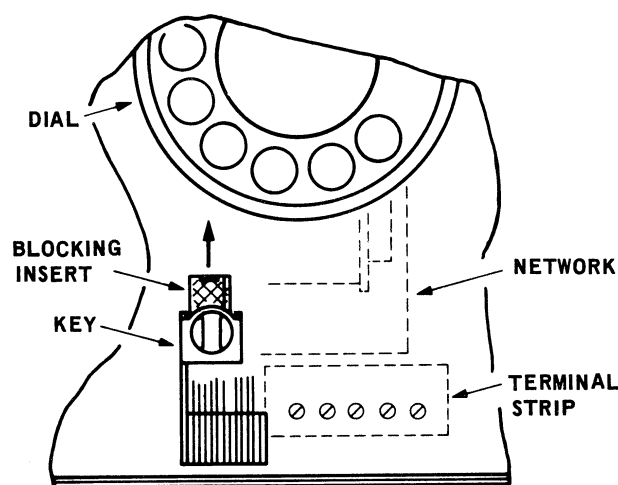


Fig. 4 — Blocking Insert

COMPANION 3 Hands-Free Unit Connection

3.08 If the COMPANION 3 hands-free unit is required, the filler plate in the left-hand side of the set housing base must be removed and the prewired interconnect jack, which is stored inside the set must be installed in its place. In addition, the (S-W) lead of pair 5 (see Table A) and the (G-R) lead of pair 8 must be wired to the COMPANION 3 power terminals 23 and 17. The NE-2012B transformer (or equivalent power supply) required for the hands-free unit may be located at the key equipment and connected per 3.09. Refer to the COMPANION 3 installation manual or Section 512-6251-400 for detailed connection information.

Note: The power supply output must not be grounded.

3.09 The power supply for the QUS1C hands-free unit is connected through the LOGIC 10 telephone set in either of the following ways.

- (a) Remove the cable locking slide (under the bottom housing), and insert the spade tips of the 2-conductor cord or mounting cord from the NE-2012B transformer (or equivalent power supply) in terminals 17 and 23 of the terminal

block in the LOGIC 10 telephone set.

- (b) Connect the NE-2012B transformer (or equivalent power supply) to the LOGIC 10 set through the connector cable. For an NE-A25B connector cable, connect the transformer to the (G-R) and (S-W) leads of the cable. For any other type of connector cable, use the leads that terminate on pins 5 and 8 of the connector.

Note: The maximum allowable lengths of 22, 24, and 26 AWG cable for connecting the NE-2012B transformer to the hands-free unit are 400, 250, and 150 feet respectively.

3.10 To connect the unit and the LOGIC 10 telephone set for a desk-top installation.

- (a) Hold the set in the right hand with the dial forward.
- (b) Hold the unit in the left hand with the controls forward.
- (c) Tilt the upper edge of the unit towards the upper edge of the set, and bring the set and unit together so that the plug is firmly in the socket.

3.11 To connect the unit and the LOGIC 10 telephone set for a wall-mounted installation.

- (a) Mount a QBP7A mounting bracket securely on the wall. (The mounting bracket must be ordered separately.)
- (b) Place the set in position on the mounting bracket. Slide the set to the right, and secure it with the thumb screw.
- (c) Tilt the upper edge of the unit towards the upper edge of the set, and bring the unit together with the set so that the plug is firmly in the jack and the unit is secured on the locking pin.

TABLE A
QSK200B AND QSK2200B TELEPHONE SET CONDUCTOR ASSIGNMENT

| QSK200/2200B SET | | | | | NED50QE CORD | | | | CONNECTOR CABLE | | CONNECTING BLOCK | | |
|------------------|----------|---------|-----------|------|--------------|---------|------|------|-----------------|---------|------------------|-----------|------|
| LINE | FUNCTION | COLOR | TER-MINAL | PLUG | CON-NECTOR | COLOR | PAIR | PLUG | CON-NECTOR | COLOR | PAIR | LEAD | LINE |
| 1 | T | (W-BL) | 28-29 | 26 | 26 | (W-BL) | 1 | 26 | 26 | (W-BL) | 1 | T | 1 |
| | R | (BL-W) | 38-39 | 1 | 1 | (BL-W) | 1 | 1 | 1 | (BL-W) | 1 | R | |
| | A | (W-O) | 47-49 | 27 | 27 | (W-O) | 2 | 27 | 27 | (W-O) | 2 | A | |
| | LG | (O-W) | | 2 | 2 | (O-W) | 2 | 2 | 2 | (O-W) | 2 | LG | |
| | L | (W-G) | | 28 | 28 | (W-G) | 3 | 28 | 28 | (W-G) | 3 | L | |
| 2 | | (G-W) | | 3 | 3 | (G-W) | | 3 | 3 | (G-W) | | | 2 |
| | T | (W-BR) | | 29 | 29 | (W-BR) | 4 | 29 | 29 | (W-BR) | 4 | T | |
| | R | (BR-W) | | 4 | 4 | (BR-W) | 4 | 4 | 4 | (BR-W) | 4 | R | |
| | A,S | (W-S) | 23 | 30 | 30 | (W-S) | 5 | 30 | 30 | (W-S) | 5 | A,S | |
| | SPARE | (S-W) | | 5 | 5 | (S-W) | 5 | 5 | 5 | (S-W) | 5 | * | |
| 3 | LG | (R-BL) | | 31 | 31 | (R-BL) | 6 | 31 | 31 | (R-BL) | 6 | LG | 3 |
| | L | (BL-R) | | 6 | 6 | (BL-R) | 6 | 6 | 6 | (BL-R) | 6 | L | |
| | T | (R-O) | | 32 | 32 | (R-O) | 7 | 32 | 32 | (R-O) | 7 | T | |
| | R | (O-R) | | 7 | 7 | (O-R) | 7 | 7 | 7 | (O-R) | 7 | R | |
| | A,S | (R-G) | 17 | 33 | 33 | (R-G) | 8 | 33 | 33 | (R-G) | 8 | A,S | |
| 4 | SPARE | (G-R) | | 8 | 8 | (G-R) | 8 | 8 | 8 | (G-R) | 8 | * | 4 |
| | LG | (R-BR) | | 34 | 34 | (R-BR) | 9 | 34 | 34 | (R-BR) | 9 | LG | |
| | L | (BR-R) | | 9 | 9 | (BR-R) | 9 | 9 | 9 | (BR-R) | 9 | L | |
| | T | (R-S) | | 35 | 35 | (R-S) | 10 | 35 | 35 | (R-S) | 10 | T | |
| | R | (S-R) | | 10 | 10 | (S-R) | 10 | 10 | 10 | (S-R) | 10 | R | |
| 5 | A,S | (BK-BL) | 7-9 | 36 | 36 | (BK-BL) | 11 | 36 | 36 | (BK-BL) | 11 | A,S | 5 |
| | SPARE | (BL-BK) | | 11 | 11 | (BL-BK) | 11 | 11 | 11 | (BL-BK) | 11 | SPARE | |
| | LG | (BK-O) | | 37 | 37 | (BK-O) | 12 | 37 | 37 | (BK-O) | 12 | LG | |
| | L | (O-BK) | | 12 | 12 | (O-BK) | 12 | 12 | 12 | (O-BK) | 12 | L | |
| | T | (BK-G) | | 38 | 38 | (BK-G) | 13 | 38 | 38 | (BK-G) | 13 | T | |
| 6 | R | (G-BK) | | 13 | 13 | (G-BK) | 13 | 13 | 13 | (G-BK) | 13 | R | 6 |
| | A,S | (BK-BR) | 7-9 | 39 | 39 | (BK-BR) | 14 | 39 | 39 | (BK-BR) | 14 | A,S | |
| | SPARE | (BR-BK) | | 14 | 14 | (BR-BK) | 14 | 14 | 14 | (BR-BK) | 14 | SPARE | |
| | LG | (BK-S) | | 40 | 40 | (BK-S) | 15 | 40 | 40 | (BK-S) | 15 | LG | |
| | L | (S-BK) | | 15 | 15 | (S-BK) | 15 | 15 | 15 | (S-BK) | 15 | L | |
| 7 | T | (Y-BL) | | 41 | 41 | (Y-BL) | 16 | 41 | 41 | (Y-BL) | 16 | T | 7 |
| | R | (BL-Y) | | 16 | 16 | (BL-Y) | 16 | 16 | 16 | (BL-Y) | 16 | R | |
| | A,S | (Y-O) | | 42 | 42 | (Y-O) | 17 | 42 | 42 | (Y-O) | 17 | A,S | |
| | L | (O-Y) | | 17 | 17 | (O-Y) | 17 | 17 | 17 | (O-Y) | 17 | L | |
| | T | (Y-G) | | 43 | 43 | (Y-G) | 18 | 43 | 43 | (Y-G) | 18 | T | |
| 8 | R | (G-Y) | | 18 | 18 | (G-Y) | 18 | 18 | 18 | (G-Y) | 18 | R | 8 |
| | B L,SP | (Y-BR) | 10-12 | 44 | 44 | (Y-BR) | 19 | 44 | 44 | (Y-BR) | 19 | BL, SPARE | |
| | S G,SP | (BR-Y) | 00-5 | 19 | 19 | (BR-Y) | 19 | 19 | 19 | (BR-Y) | 19 | SG, SPARE | |
| | R-R1 | (Y-S) | G1 | 45 | 45 | (Y-S) | 20 | 45 | 45 | (Y-S) | 20 | R-R1 | |
| | B-B1 | (S-Y) | 2L | 20 | 20 | (S-Y) | 20 | 20 | 20 | (S-Y) | 20 | B-B1 | |
| 9 | A,S | (V-BL) | | 46 | 46 | (V-BL) | 21 | 46 | 46 | (V-BL) | 21 | A,S | 9 |
| | L | (BL-V) | | 21 | 21 | (BL-V) | 21 | 21 | 21 | (BL-V) | 21 | L | |
| | T,SP | (V-O) | 26 | 47 | 47 | (V-O) | 22 | 47 | 47 | (V-O) | 22 | T,SPARE | |
| | R,SP | (O-V) | 24 | 22 | 22 | (O-V) | 22 | 22 | 22 | (O-V) | 22 | R, SPARE | |
| | A,S | (V-G) | | 48 | 48 | (V-G) | 23 | 48 | 48 | (V-G) | 23 | A,S | |
| 9 | L | (G-V) | | 23 | 23 | (G-V) | 23 | 23 | 23 | (G-V) | 23 | L | 9 |
| | T,SP | (V-BR) | 36 | 49 | 49 | (V-BR) | 24 | 49 | 49 | (V-BR) | 24 | T, SPARE | |
| | R,SP | (BR-V) | 34 | 24 | 24 | (BR-V) | 24 | 24 | 24 | (BR-V) | 24 | R, SPARE | |
| | A,S | (V-S) | | 50 | 50 | (V-S) | 25 | 50 | 50 | (V-S) | 25 | A,S | |
| | L | (S-V) | | 25 | 25 | (S-V) | 25 | 25 | 25 | (S-V) | 25 | L | |

*See 3.08

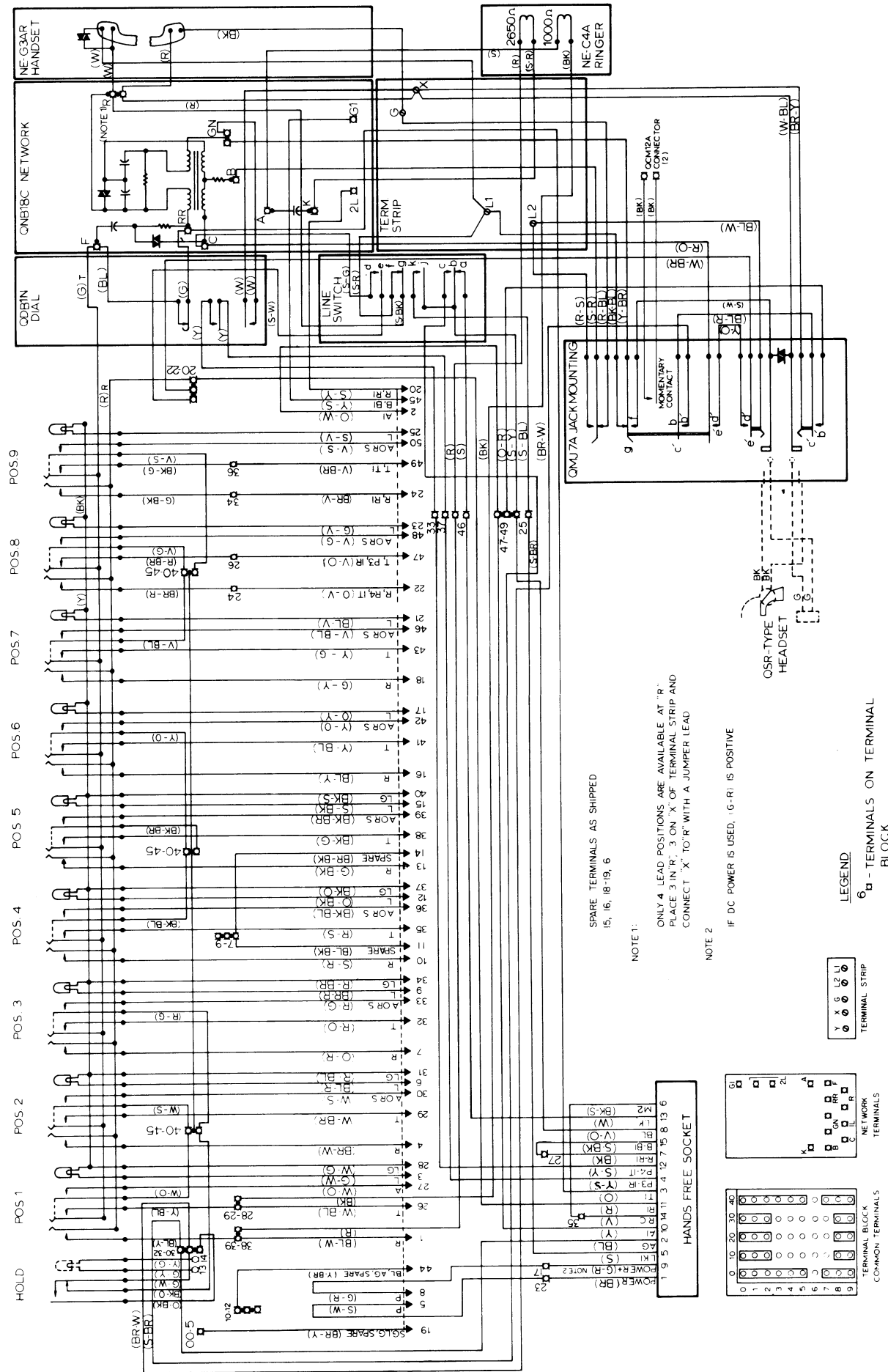


Fig. 5 — Schematic Diagram of QSK200B Key Telephone Set



TABLE B
STATION BUSY LAMP AND ADD-ON CONNECTION INFORMATION
 (See 3.06)

| LEAD | STATION BUSY LAMP | ADD-ON* |
|----------------------------|--|------------------|
| Hold Key (G-W) | Remove from 30-32 and connect to 10-12 | — |
| Mounting Cord (Y-BR) | Remove from 10-12 and connect to 30-32 | — |
| Diode Assembly PO522718 | 30-32) —> (10-12 | 30-32) —> (10-12 |
| *See Fig. 9 | | |

TABLE C
EXTERNAL SPEAKERPHONE CONNECTION INFORMATION
 (See 3.06)

| SPEAKERPHONE LEADS | LEAD COLOR | REMOVE FROM TERMINAL | CONNECT TO TERMINAL |
|---|------------|----------------------|---------------------|
| T1 | V-BR | 36 | 6†† RR** |
| R1 | BR-V | 34 | 20-22 |
| AG | Y-BR | 10-12 | 30-32 10-12† |
| LK | BL-BK | 7-9 | 46 |
| P3 or IR | V-O | 26 | 35†† 37** |
| P4 or IT | O-V | 24 | 33 |
| A1 | O-W | | 47-49 |
| ††QSK 2200B **QSK 200B † If Station Busy Lamp or Add-On is provided | | | |
| Note: If the speakerphone control is located at the station, connect the appropriate speakerphone function lead to the indicated terminal by means of a suitable spade tip ended cord, e.g., a NE-D10L-* cord. | | | |

TABLE D
I HOLD CONNECTION INFORMATION
 (See 3.06)

| LEAD | | REMOVE FROM TERMINAL | CONNECT TO TERMINAL |
|---------------------|--------|----------------------|---------------------|
| Hold Key | (O-BK) | 30-32 | 33 |
| | (G-W) | 30-32 | 40-45 |
| | (BK-O) | 40-45 | 30-32 |
| SP-(BR-BK) or Spare | | 7-9 | 33 |

TABLE E
SIGNAL BUTTON CONNECTION INFORMATION
 (See 3.06)

| REMOVE KEY LEAD FROM TERMINAL | CONNECT TO TERMINAL |
|---|------------------------|
| 40-45 | 00-5 |
| <i>Note:</i> Remove locking pins from all buttons connected to momentary operation. | |

TABLE F
ALTERNATE RINGER CONNECTION INFORMATION

| RINGER LEAD | REMOVE FROM TERMINAL | CONNECT TO NETWORK TERMINAL |
|----------------|-------------------------|--------------------------------|
| BK | 28-29 | G1 |
| R | 38-39 | 2L |

TABLE G
NE-241QB AMPLIFIER CONNECTION INFORMATION
 (See 3.06)

| AMPLIFIER LEADS | | (S-R) | (BK) | (R) | (G) |
|-----------------|------------------------------|-------|------|-----|-----|
| QSK200B | Set Terminals | | | X | L2 |
| | (BL-W) Lead From Terminal L2 | 15 | | | |
| | (BR-Y) Lead From Terminal X | | 16 | | |
| QSK2200B | Set Terminals | | | Y | L2 |
| | (BL-W) Lead From Terminal L2 | 15 | | | |
| | (BR-Y) Lead From Terminal Y | | 16 | | |

TABLE H
QCT1A VOICE STATION COUPLER CONNECTION INFORMATION
 (See 3.06)

| COUPLER TERMINALS | R | R1 | T | T1 | A | A1 |
|--|----|-------|----|----|-------|-------|
| Set Terminals | | 20-22 | | | 40-45 | 47-49 |
| QSK200B Only | | | | F | | |
| QSK2200B Only | | | | RR | | |
| (G) Key Lead From Terminal F | | | 15 | | | |
| (R) Key Lead From Terminal 20-22 | 16 | | | | | |
| <i>Note:</i> Use a suitable spade tip ended cord, e.g., an NE-D6AA-* cord. | | | | | | |

TABLE I
AUTOMATIC DIALER CONNECTION INFORMATION
(See 3.06)

| | | | | | | | | |
|-----------------|---------------------------|------|-----|-------|-------|------|-----|------|
| DIALER LEADS | TELERAPID 350* | | | (W) | (Y) | | | (BL) |
| | TELERAPID 125* | | | (Y-W) | (G-W) | | | (W) |
| | MAGICALL* | (BL) | (W) | (G) | (R) | (BK) | (Y) | |
| | RAPIDIAL * | (W) | (W) | (G) | (BL) | (Y) | (Y) | |
| QSK200B | Set Terminals | GN | R | F | | 37 | 33 | C |
| | (G) Lead From Terminal F | | | | 15 | | | |
| QSK2200B | Set Terminals | GN | X | F | | 37 | 6 | C |
| | (G) Lead From Terminal RR | | | | 15 | | | |

TABLE J
NE-1035B3QA AUXILIARY DIAL CONNECTION INFORMATION
(See 3.06)

| DIAL LEADS | (BR-W) | (S-R) | (W-BL) | (O-R) | (R-O) | (V-O) | (O-V) | (Y-S) | (S-Y) |
|--|--------|-------|--------|-------|-------|-------|-------|-------|-------|
| Set Terminals | R | | B | | C | | 20-22 | | F |
| (R) Handset Lead From Terminal R | | Y | | | | | | | |
| (W) Handset Lead From Terminal R | | | | X | | | | | |
| (G) Key Lead from Terminal F | | | | | | | | 16 | |
| (S-W) Line Switch Lead From Terminal 20-22 | | | | | | 15 | | | |
| <i>Note:</i> Insulate and store unused leads: (BL-BK), (BK-BL), (BR-Y), (W-BR), (R-S), (BL-W). | | | | | | | | | |

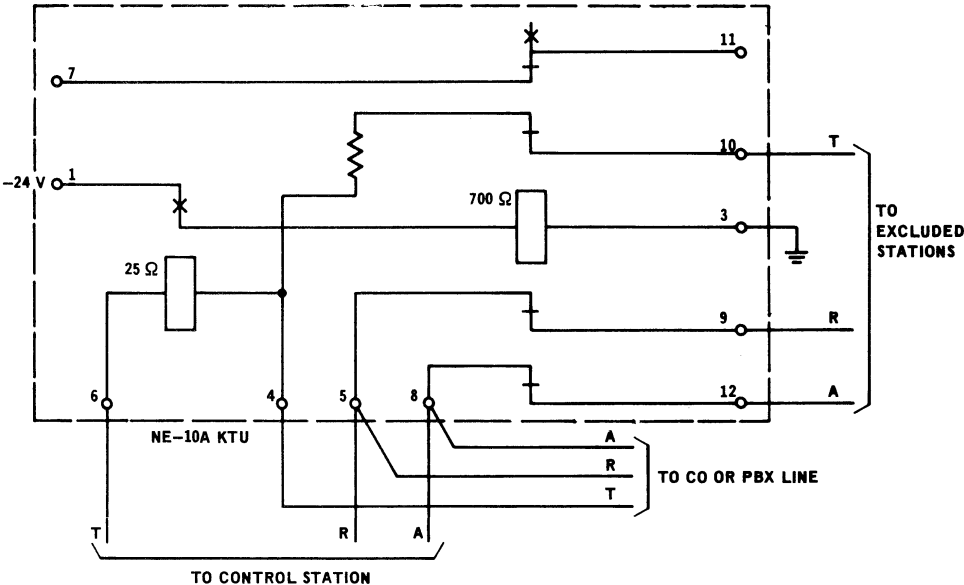
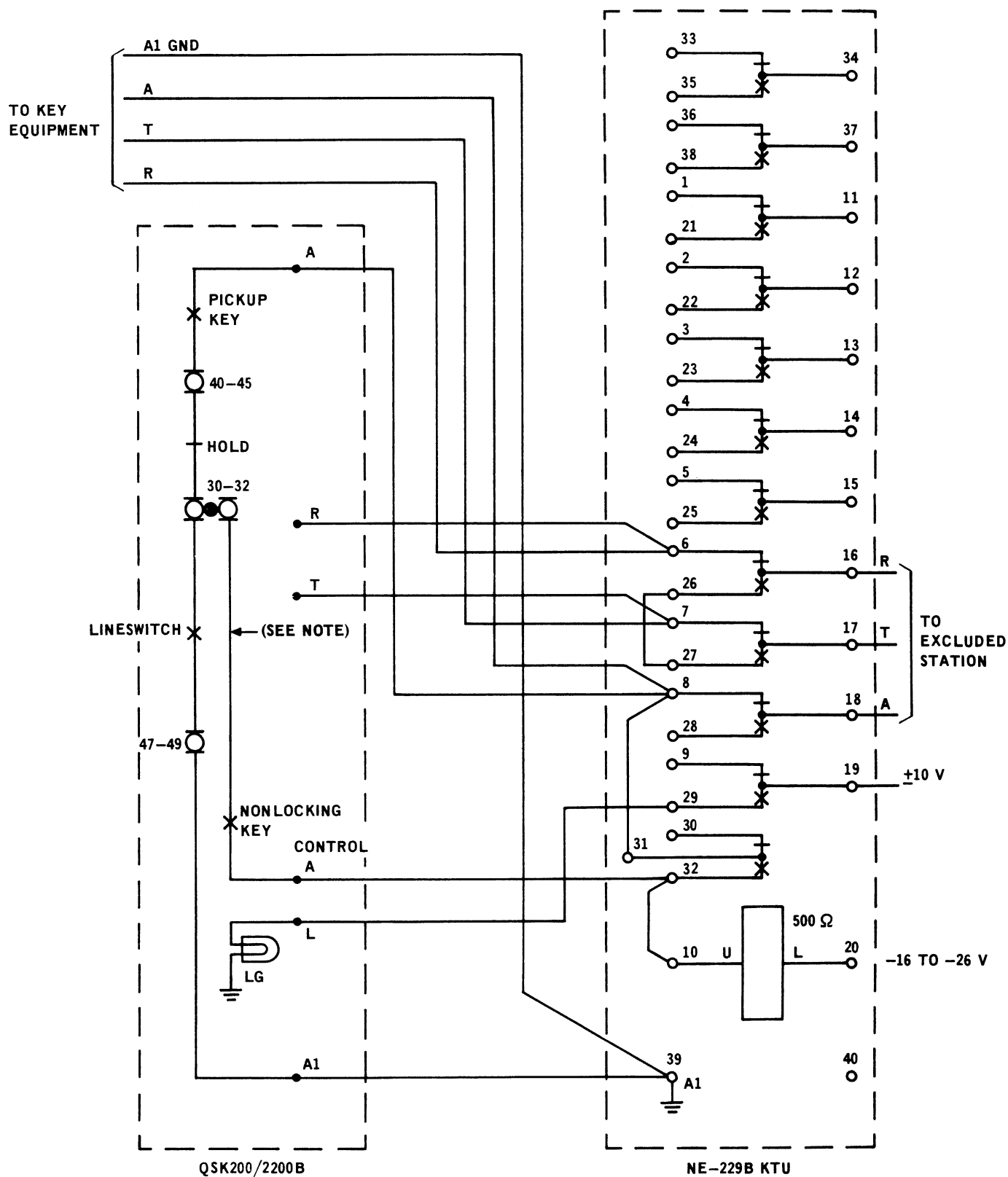


Fig. 7 — Automatic Exclusion



NOTE: THE KEY LEAD MUST BE REMOVED FROM TERMINAL 40-45 AND CONNECTED TO TERMINAL 30-32 AS SHOWN.

Fig. 8 — Selective Exclusion

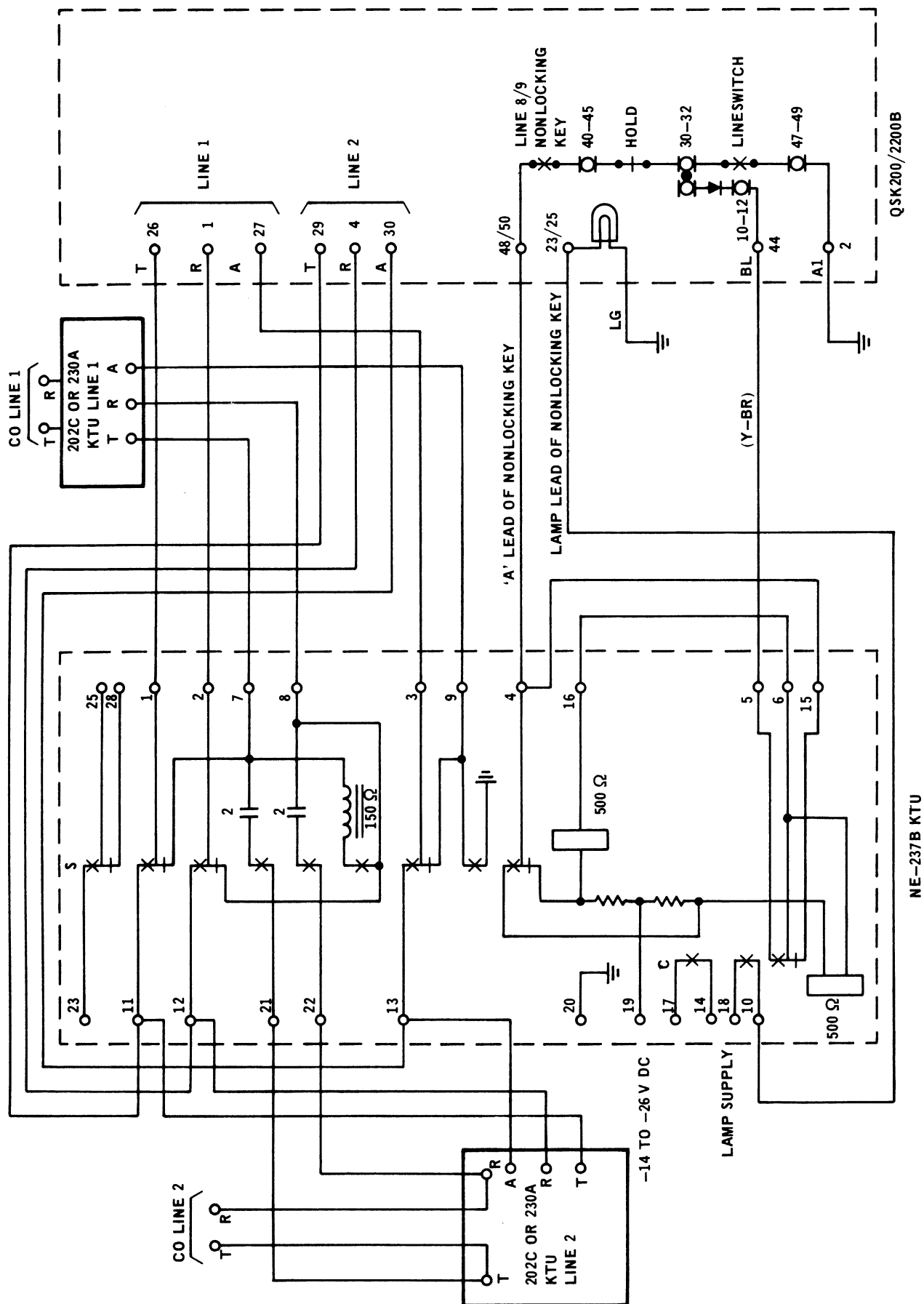


Fig. 9 — Add-On Circuit

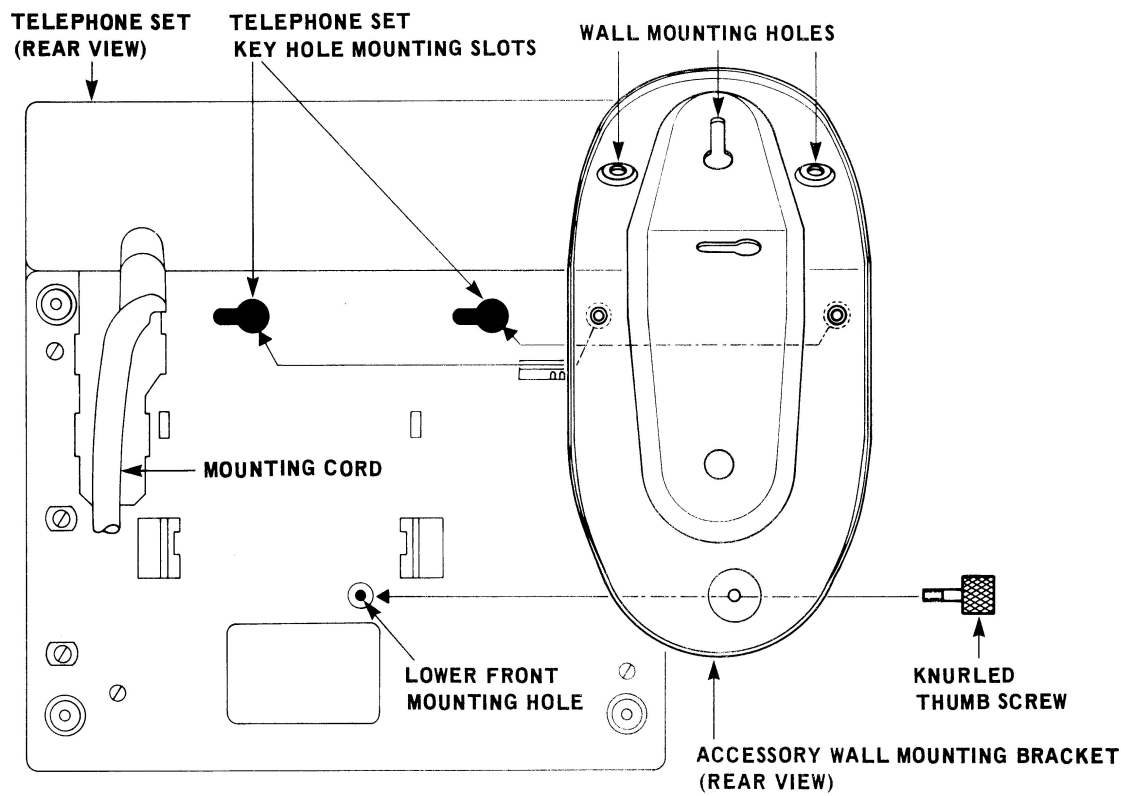


Fig. 10 — Method of Mounting QSK200B or QSK2200B Telephone Set to Wall



Fig. 11 — Faceplate Removal