

# LOGIC 10

## INSTALLATION MANUAL



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NORTHERN TELECOM INC.  
640 Massman Dr.  
Nashville, TN 37210

Attn. Product Manager  
Business Systems

**nt** northern  
telecom

**"LOGIC\* 10" KEY TELEPHONE SETS**  
**QSK200F AND QSK2200F TYPE**

\*Trademark of Northern Telecom Limited

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Printed in U.S.A.

PO57414  
Iss: 80 10 0

**INSTALLATION**

**MOUNTING CORD**

QSK200F type and QSK2200F type sets are supplied without a mounting cord. Order an NE-D50QE Cord for use with systems wired for Northern Telecom standards for 10-button sets. Order an NE-D50QJ Cord for use with systems wired for Western Electric or ITT standards.

The appropriate color code must be added to the part number of the mounting cord, e.g. NE-D50QJ-20 warm white or NE-D50QJ-35 chameleon gray.

**MOUNTING CORD INSTALLATION**

- (a) Place the telephone set upside down on a flat surface, remove the slide from the base by pressing on the back of the set beside the cord entrance hole and sliding the slide to the rear of the set.
- (b) Insert the cord retainer in the hole in the chassis.
- (d) Press the wiring of the amphenol connector to clear the slide.
- (e) Replace the slide in the set.

**OPTIONAL FACEPLATE COLORS**

The chameleon gray sets are factory equipped with a brown faceplate and warm white sets with a sand faceplate. Faceplates are available in the following colors and may be ordered separately by replacing the last two digits of the part number with the appropriate color code, e.g., PO515426 (Brown).

Brown	—26
Sand	—32
Deep Blue	—25
Deep Green	—33
Purple	—34
Black	—03

**DESIGNATION TABS**

Designation tabs (PO514516) are used on the NE-647 type keys for button designation. Squeeze the sides of the button caps and pull upwards to remove them from the key. Insert the designation tabs and replace the caps.

**CONNECTIONS**

Connect the telephone set using an NE-A25B or equivalent connector cable. Refer to Conductor Assignment Tables for NE or WE and ITT connections.

**INFORMATION**  
 FOR TECHNICAL OR CUSTOMER SERVICE  
 OR  
 WARRANTY AND REPAIR INFO  
 CALL 615-883-9220  
 FOR REPAIR SERVICE SEND UNIT TO  
 WARRANTY REPAIR CENTER  
 NORTHERN TELECOM, INC.  
 ADVANCED TELEPHONE PRODUCTS DIVISION  
 720 MASSMAN DRIVE  
 NASHVILLE, TENNESSEE 37210

**LOGIC 10  
 QSK200F and QSK2200F TYPE  
 INSTALLATION MANUAL COMMENTS SHEET**

To: NORTHERN TELECOM INC.  
 640 Massman Dr.  
 Nashville, TN 37210

Date:

Att. Product Manager  
 Business Systems

Before you file this manual for future use, please take a minute to complete and mail this addressed sheet by giving your comments and suggestions for improving the instructions.

Are the instructions clear? yes  no

Are the instructions adequate? yes  no

Comments—

In case we require further information—

Your Name

Company Name

Company Address

Company Telephone No.

TELEPHONE SET CORD	HEADSET JACK	RINGER	SPEAKER	LEFT-HAND INTERCONNECT	ROTARY DIAL	DIGITONE DIAL	DIGIPULSE DIAL	SCHEMATIC FIGS.
QSK200FX QSK2200FX	X X	X X	- -	X X	X -	- X	- -	1+2 1+4
QSK200F1X QSK2200F1X	- -	X X	- -	X X	X -	- X	- -	1+3 1+5
QSK200F2X QSK2200F2X	- -	- -	- -	X X	X -	- X	- -	1+3 1+5
QSK200F3X QSK2200F3X	- -	X X	- -	- -	X -	- X	- -	1+3 1+5
QSK200F4X QSK2200F4X	X X	- -	X X	X X	X -	- X	- -	1+2 1+4
QSK200F5X QSK2200F5X	- -	- -	X X	X X	X -	- X	- -	1+3 1+5
QSK200F6X QSK2200F6X	- -	- -	X X	- -	X -	- X	- -	1+3 1+5

Figures 3 and 5 include interconnect, ringer and speaker. Use this table to determine which components are included in a particular code of telephone set.

## WALL MOUNTING

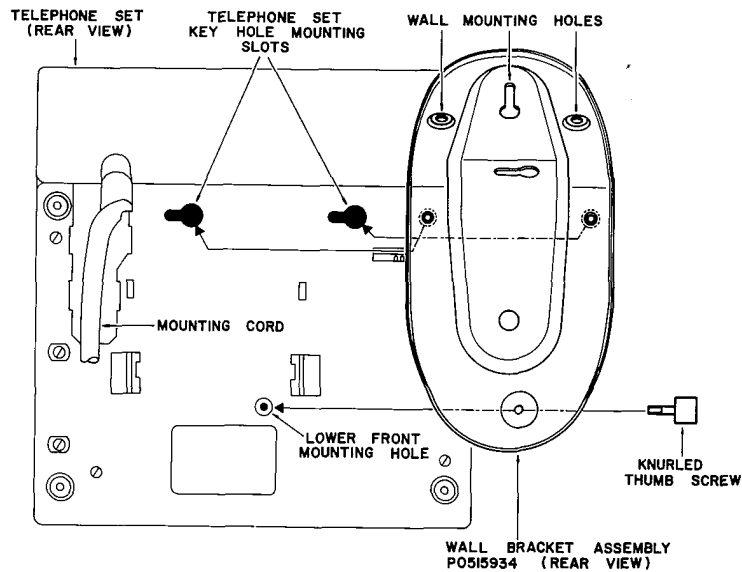
A wall bracket assembly (PO515934) must be ordered for mounting the LOGIC 10 telephone set on a vertical surface.

- Mount the wall bracket assembly using the appropriate hardware for the type of wall.
- Place the telephone set on the wall bracket assembly so the shoulder rivets enter the corresponding key hole slots in the base of the telephone set.
- Move the telephone set to the left as far as possible so the lower front mounting hole aligns with the corresponding threaded hole in the telephone set base.

(d) Lock the telephone set in place by inserting the knurled thumb screw through the wall bracket and into the hole in the base of the telephone set. Tighten the screw by hand.

## REMOVAL OF FACEPLATE AND COVER

- Release the faceplate catch by inserting an NS-16750L3 releaser (or paper clip) in the hole on the lower front edge of housing cover.
- Lift upward on the front edge of the faceplate until the locating tabs at the rear of faceplate are disengaged from the housing.
- Loosen the two cover retaining screws and remove the cover.



Wall Mounting

## QSK200F AND QSK2200F TYPE TELEPHONE SET CONDUCTOR ASSIGNMENT USING NE-D50QJ CORD FOR WE OR ITT CONNECTIONS

TELEPHONE SET					NE-D50QJ MTG. CORD				A25B CONN. CABLE		
LINE	LEAD COLOR	LEAD DESIG	SET TERM	PLUG TERM	CONN. TERM	LEAD DESIG	LEAD COLOR	PLUG TERM	CONN. TERM	LEAD DESIG	LEAD COLOR
1	BL-W	R	38-39 28-29	1	1	R	BL-W	1	1	R	BL-W
	W-BL	T		26	26	T	W-BL	26	26	T	W-BL
	W-O	A		27	27	A	W-O	27	27	A	W-O
	G-W	L		3	3	L	G-W	3	3	L	G-W
	W-G	L-G		28	28	LG	W-G	28	28	LG	W-G
2	BR-W	R		4	4	R	BR-W	4	4	R	BR-W
	W-BR	T		29	29	T	W-BR	29	29	T	W-BR
	W-S	A or S		30	30	A or S	W-S	30	30	A or S	W-S
	BL-R	L		6	6	L	BL-R	6	6	L	BL-R
	R-BL	LG		31	31	LG	R-BL	31	31	LG	R-BL
3	O-R	R		7	7	R	O-R	7	7	R	O-R
	R-O	T		32	32	T	R-O	32	32	T	R-O
	R-G	A or S		33	33	A or S	R-G	33	33	A or S	R-G
	BR-R	L		9	9	L	BR-R	9	9	L	BR-R
	R-BR	LG		34	34	LG	R-BR	34	34	LG	R-BR
4	S-R	R		10	10	R	S-R	10	10	R	S-R
	R-S	T		35	35	T	R-S	35	35	T	R-S
	BK-BL	A or S		36	36	A or S	BK-BL	36	36	A or S	BK-BL
	O-BK	L		12	12	L	O-BK	12	12	L	O-BK
	BK-O	LG		37	37	LG	BK-O	37	37	LG	BK-O
5	G-BK	R		13	13	R	G-BK	13	13	R	G-BK
	BK-G	T		38	38	T	BK-G	38	38	T	BK-G
	BK-BR	A or S		39	39	A or S	BK-BR	39	39	A or S	BK-BR
	S-BK	L		15	15	L	S-BK	15	15	L	S-BK
	BK-S	LG		40	40	LG	BK-S	40	40	LG	BK-S
6	BL-Y	R		16	16	R	BL-Y	16	16	R	BL-Y
	Y-BL	T		41	41	T	Y-BL	41	41	T	Y-BL
	Y-O	A or S		42	42	A or S	BR-BK	14	14	A or S	BR-BK
	O-Y	L		17	17	L	G-Y	18	18	L	G-Y
	S-W	Pwr.		5	5	Pwr.Spare	Y-G	43	43	Pwr.Spare	Y-G
7	G-Y	R		18	18	R	BR-Y	19	19	R	BR-Y
	Y-G	T		43	43	T	Y-BR	44	44	T	Y-BR
	V-BL	A or S		46	46	A or S	BL-BK	11	11	A or S	BL-BK
	BL-V	L		21	21	L	BL-V	21	21	L	BL-V
	G-R	Pwr.		8	8	Pwr.Spare	V-BL	46	46	Pwr.Spare	V-BL
8	O-V	R,Spare		24	22	R,Spare	O-V	22	22	R	O-V
	V-O	T,Spare		26	47	T,Spare	V-O	47	47	T	V-O
	V-G	A or S		48	48	A or S	G-R	8	8	A or S	G-R
	G-V	L		23	23	L	BR-V	24	24	L	BR-V
	BL-BK	Spare		7-9	11	Spare	V-BR	49	49	Spare	V-BR
9	BR-V	R,Spare		34	24	R,Spare	S-V	25	25	R	S-V
	V-BR	T,Spare		36	49	T,Spare	V-S	50	50	T	V-S
	V-S	A or S		50	50	A or S	S-W	5	5	A or S	S-W
	S-V	L		25	25	L	G-V	23	23	L	G-V
	BR-BK	Spare		7-9	14	Spare	V-G	48	48	Spare	V-G
Misc	O-W	A1	47-49 00-5 10-12 2L G1	2	2	A1	O-W	2	2	A1	O-W
	BR-Y	SG,Spare		19	19	SG,Spare	O-Y	17	17	SG,Spare	O-Y
	Y-BR	BL,Spare		44	44	BL,Spare	Y-O	42	42	BL,Spare	Y-O
	S-Y	R or R1 B or B1		20	20	R or R1 B or B1	S-Y	20	20	R or R1 B or B1	S-Y
	Y-S			45	45	Y-S	45	45		Y-S	

QSK200 AND QSK2200F TYPE  
TELEPHONE SET CONDUCTOR ASSIGNMENT  
USING NE-D50QE CORD FOR NT CONNECTIONS

TELEPHONE SET					NE-D50QE 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		26	26	W-BL		T	1
	R	BL-W	38-39	1	1	BL-W	1	1	1	BL-W	1	R	
	A	W-O		27	27	W-O		27	27	W-O		A	
	AI	O-W	47-49	2	2	O-W	2	2	2	O-W	2	AI	
2	LG	W-G		28	28	W-G		28	28	W-G		LG	2
	L	G-W		3	3	G-W		3	3	G-W		L	
	T	W-BR		29	29	W-BR		29	29	W-BR		T	
	R	BR-W		4	4	BR-W	4	4	4	BR-W	4	R	
3	A,S	W-S		30	30	W-S		30	30	W-S		A,S	3
	Pwr+	S-W	23	5	5	S-W	5	5	5	S-W	5	Pwr, Spare	
	LG	R-BL		31	31	R-BL		31	31	R-BL		LG	
	L	BL-R		6	6	BL-R	6	6	6	BL-R	6	L	
4	T	R-O		32	32	R-O		32	32	R-O		T	4
	R	O-R		7	7	O-R	7	7	7	O-R	7	R	
	A,S	R-G	17	33	33	R-G	33	33	33	R-G	33	A,S	
	Pwr+	G-R		8	8	G-R	8	8	8	G-R	8	Pwr, Spare	
5	LG	R-BR		34	34	R-BR		34	34	R-BR		LG	5
	L	BR-R		9	9	BR-R	9	9	9	BR-R	9	L	
	T	R-S		35	35	R-S		35	35	R-S		T	
	R	S-R		10	10	S-R	10	10	10	S-R	10	R	
6	A,S	BK-BL		36	36	BK-BL		36	36	BK-BL		A,S	6
	Spare	BL-BK	7-9	11	11	BL-BK	11	11	11	BL-BK	11	-24V, Spare	
	LG	BK-O		37	37	BK-O		37	37	BK-O		LG	
	L	O-BK		12	12	O-BK	12	12	12	O-BK	12	L	
7	T	BK-G		38	38	BK-G		38	38	BK-G		T	7
	R	G-BK		13	13	G-BK	13	13	13	G-BK	13	R	
	A,S	BK-BR		39	39	BK-BR		39	39	BK-BR		A,S	
	Spare	BR-BK	7-9	14	14	BR-BK	14	14	14	BR-BK	14	HL, Spare	
8	LG	BK-S		40	40	BK-S		40	40	BK-S		LG	8
	L	S-BK		15	15	S-BK	15	15	15	S-BK	15	L	
	T	Y-BL		41	41	Y-BL		41	41	Y-BL		T	
	R	BL-Y		16	16	BL-Y	16	16	16	BL-Y	16	R	
9	A,S	Y-O		42	42	Y-O		42	42	Y-O		A,S	9
	L	O-Y		17	17	O-Y	17	17	17	O-Y	17	L	
	T	Y-G		43	43	Y-G		43	43	Y-G		T	
	R	G-Y		18	18	G-Y	18	18	18	G-Y	18	R	
10	BL,SP	Y-BR	10-12	44	44	Y-BR		44	44	Y-BR		BL, Spare	10
	SG,SP	BR-Y	00-5	19	19	BR-Y	19	19	19	BR-Y	19	SG, Spare	
	B-BI	Y-S	G1	45	45	Y-S	45	45	45	Y-S	45	B-BI	
	R-RI	S-Y	2L	20	20	S-Y	20	20	20	S-Y	20	R-RI	
11	A,S	V-BL		46	46	V-BL		46	46	V-BL		A,S	11
	L	BL-V		21	21	BL-V	21	21	21	BL-V	21	L	
	T,SP	V-O		47	47	V-O		47	47	V-O		T, Spare	
	R,SP	O-V		22	22	O-V	22	22	22	O-V	22	R, Spare	
12	A,S	V-G		48	48	V-G		48	48	V-G		A,S	12
	L	G-V		23	23	G-V	23	23	23	G-V	23	L	
	T,SP	V-BR		49	49	V-BR		49	49	V-BR		T, Spare	
	R,SP	BR-V		24	24	BR-V	24	24	24	BR-V	24	R, Spare	
13	A,S	V-S		50	50	V-S		50	50	V-S		A,S	13
	L	S-V		25	25	S-V	25	25	25	S-V	25	L	

CONNECTION OF OPTIONS

Connection information for options is contained in the tables and figures on the following pages.

If more connection positions are required than are available, use QCM15B connector for the additional positions.

If no terminal is available for the connection of two spade-tipped leads, use a QCM12A or QCM15B connector.

Additional installation and repair information is given in Section 502-8601-202.

**STATION BUSY LAMP.** Station busy lamp operation is provided on the BL\* lead of the telephone set connector. This pin will be grounded when the sets is in the off-hook condition.

\* The exact pin connections for features described may vary with cable used. For information on cable assignments please see the appropriate table for the cable being used.

**INDIVIDUAL SIGNALING.** Positions 8, 9 and 10 may be converted for on-hook signaling by removing the PO514515 locking pin and connecting as shown below.

Any line button may be used for off-hook signaling by connecting the "A" lead of the desired button to the signal lead of the customer provided circuit. A ground will be provided on the "A" lead when the button is depressed.

POSITION	REMOVE JUMPER	PROVIDE SPADE TIP JUMPER *		CONNECT SIGNAL LEAD TO
		FROM	TO	
8	IX	A7	A9	Line 7 "A" lead
9	VII	B5	A9	Line 8 "A" lead
10	VII	B4	A9	Line 9 "A" lead

\* Spade tip jumper leads are contained in connector package PO574146, packed with each set.

**LOGIC HANDSFREE UNIT.** The QUS1C LOGIC handsfree unit is equipped with a 15-pin plug for attachment to the left side of the LOGIC 10 telephone sets which have an interconnect socket. An NE-2012B transformer (or equivalent power supply) is required for the handsfree unit and connected to the unit through the telephone set (S-W and G-R of the connector cable for the NE-D50QE cord, and Y-G and V-BL of the connector cable for the NE-D50QJ cord.

Refer to the LOGIC handsfree unit installation manual or Section 512-6251-400 for detailed connection information.

**RINGER CUTOFF (NE-CAA Ringer).** Bend the stop on the ringer control until it clears the ringer frame. This provides an additional position of the ringer volume control which prevents armature movement.

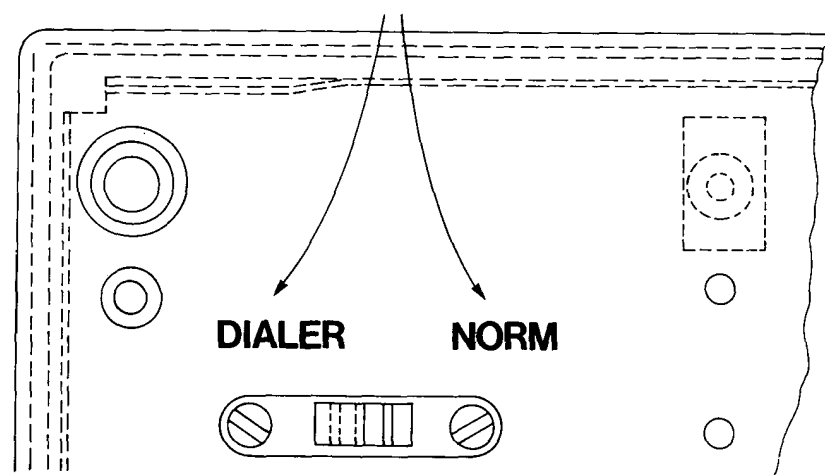
**RINGER.** The ringer is connected to R-R1 and B-B1 leads which can be connected at the key equipment to the common signal or to any line for use as a line ringer.

**BUZZER.** A QBX1A buzzer may be mounted on the left dial mounting bracket. The buzzer should be connected to the B1 and R1 leads or any two spare leads. The QBX1A buzzer operates on 10V ac only.

**LOGIC AUTOMATIC DIALER.**

The NTOC25AA LOGIC Automatic Dialer is equipped with a 15-pin plug for attachment to the LOGIC telephone sets which have interconnect socket. The LOGIC Dialer may be used alone or in conjunction with a LOGIC Handsfree unit. The Dialer should always be plugged directly into the LOGIC set and the Handsfree unit into the Dialer. The LOGIC 10 telephone set is equipped with a dialer adapter switch located on the bottom of the set in the left front corner. (See

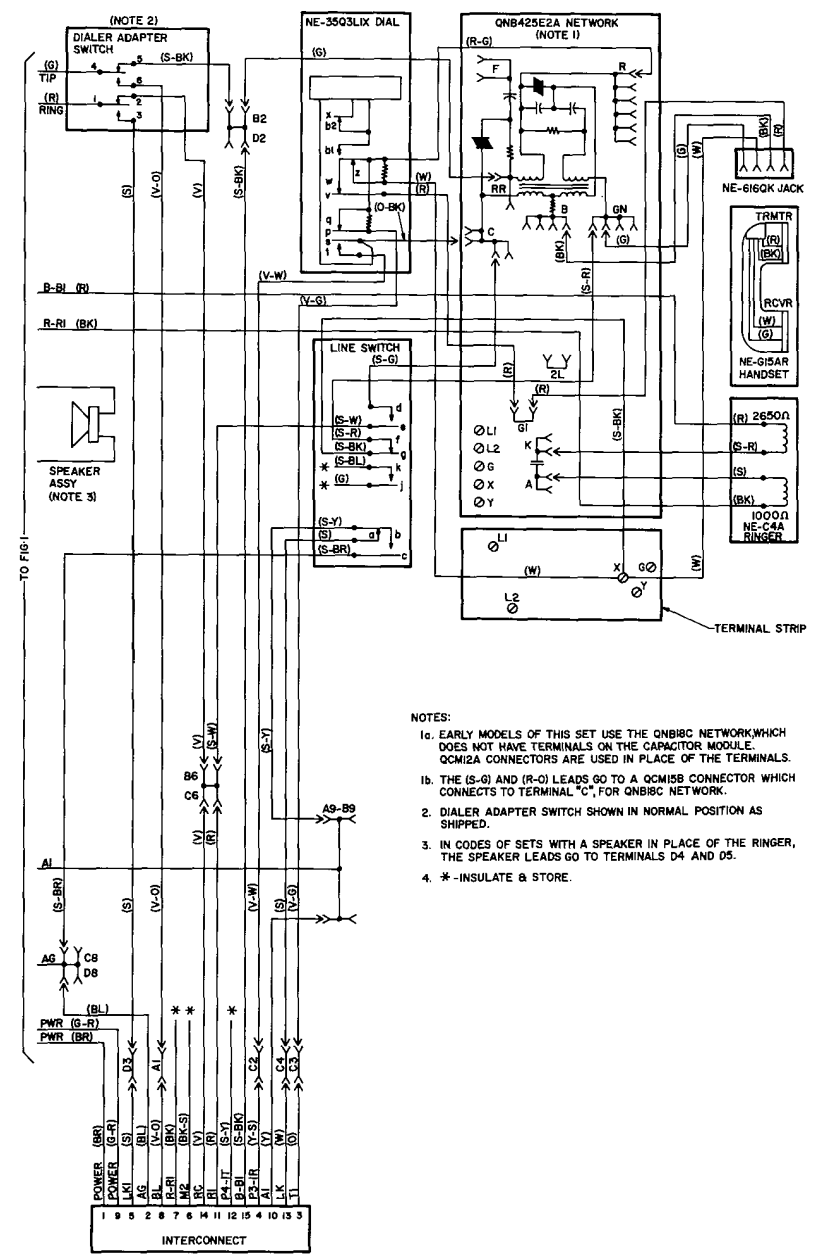
Fig. below). This switch is shipped in the normal position and must be moved to the dialer position for proper operation. The Dialer is supplied with its own power supply which plugs into the back of the Dialer.



**OPTIONAL METHOD OF SUPPLYING AUXILIARY POWER FOR HANDSFREE.**

When it is desired to power add-on modules by use of an additional cord to the individual set, connections may be made by use of a 2 conductor spade tipped cable with one end connected to a 2012B (or equivalent transformer) and the second end terminated to connectors C7 and D6 of the telephone set terminal board).

*For additional reference see included connection information diagrams.*



- NOTES:
- 1a. EARLY MODELS OF THIS SET USE THE QNB8C NETWORK WHICH DOES NOT HAVE TERMINALS ON THE CAPACITOR MODULE. QCM12A CONNECTORS ARE USED IN PLACE OF THE TERMINALS.
  - 1b. THE (S-G) AND (R-O) LEADS GO TO A QCM15B CONNECTOR WHICH CONNECTS TO TERMINAL "C", FOR QNB8C NETWORK.
  2. DIALER ADAPTER SWITCH SHOWN IN NORMAL POSITION AS SHIPPED.
  3. IN CODES OF SETS WITH A SPEAKER IN PLACE OF THE RINGER, THE SPEAKER LEADS GO TO TERMINALS D4 AND D5.
  4. \* -INSULATE & STORE.

**Fig. 5 - Schematic Diagram of QSK200F1X, F2X, F3X, F5X and F6X Telephone Sets. (See Page 3 to determine what components are included in a particular code of telephone sets.)**

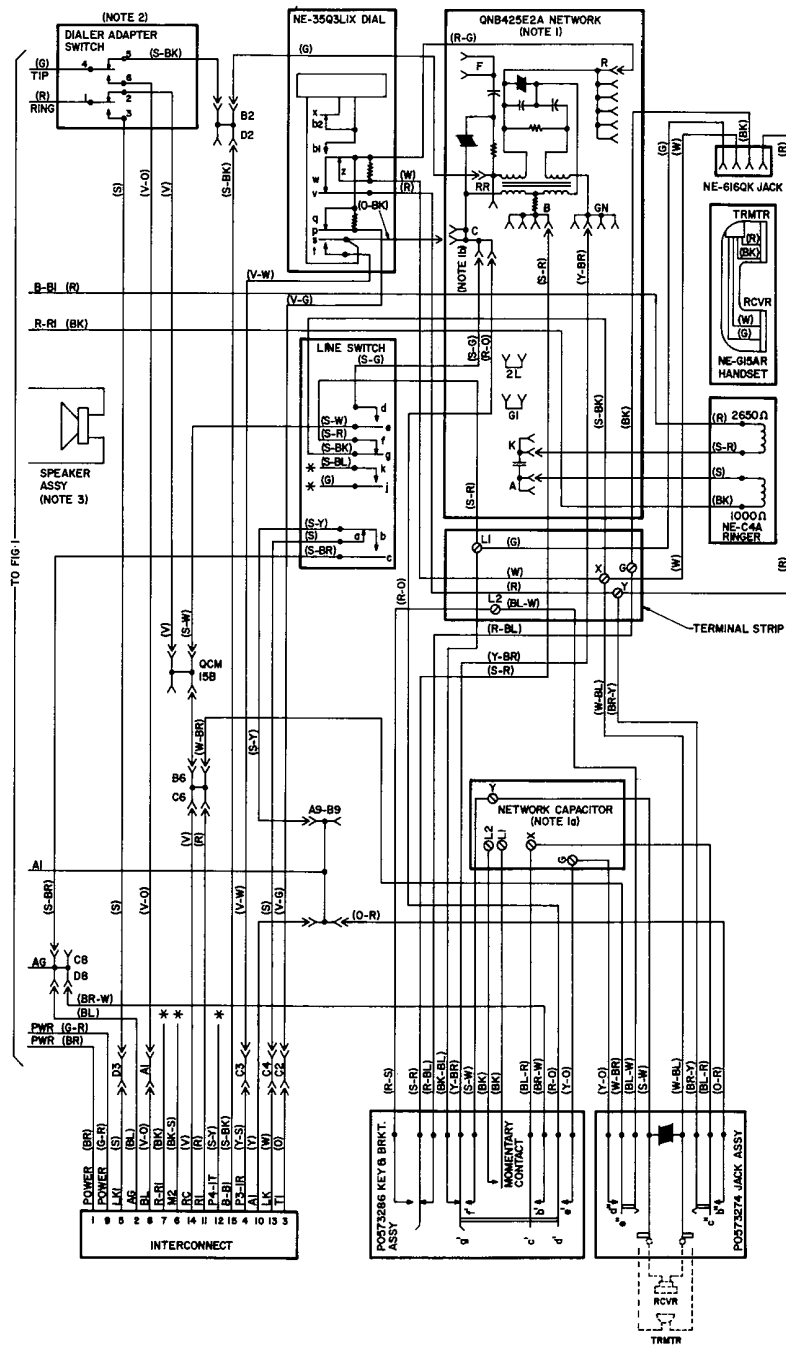
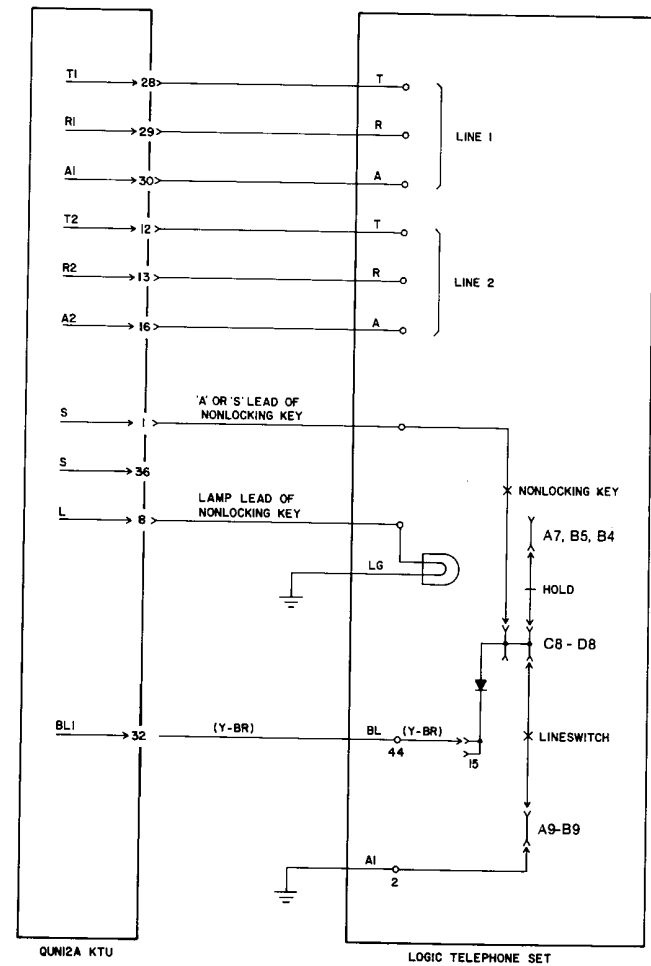


Fig. 4 - Schematic Diagram of the QSK2200FX and QSK2200F4X Telephone Sets.

**ADD-ON.** The add-on feature can be used on any two lines by using a QUN12A KTU. Bottom of positions 8, 9, 10 (Lines 7, 8, 9) may be converted for add-on by removing the locking pin. The lamp in the add-on button will light when the add-on circuit is in use.



Add-on Circuit Using a QUN12A KTU

### BUSY STATION MONITORING.

The lamp associated with key positions 9, 10 and Hold are convertible for station busy lamp monitoring. NE-52A lamps must be substituted for the NE-51A lamps at each position converted.

**I HOLD.** This feature may be installed by connecting the I HOLD circuit to the SG lead of the telephone set cord and providing a jumper lead from C9 to D5 on the terminal block.

### BUSY STATION MONITORING

LAMP	TELEPHONE SET	CONNECTIONS IN TELEPHONE SET	CONNECTIONS AT TERMINAL
All Positions Hold		Connector Pin 11 -24DC† H.L. Lead Pin 14	-24VDC† *
Position 10 9	Disconnect jumper V. Provide spade Tip jumper B1 to D7	L. Lead Pos. 10	*
Position 9 9	Disconnect jumper VI. Provide spade‡ tip jumper from A4 to D7 or D9‡.	L. Lead Pos. 9 Pin 23	*

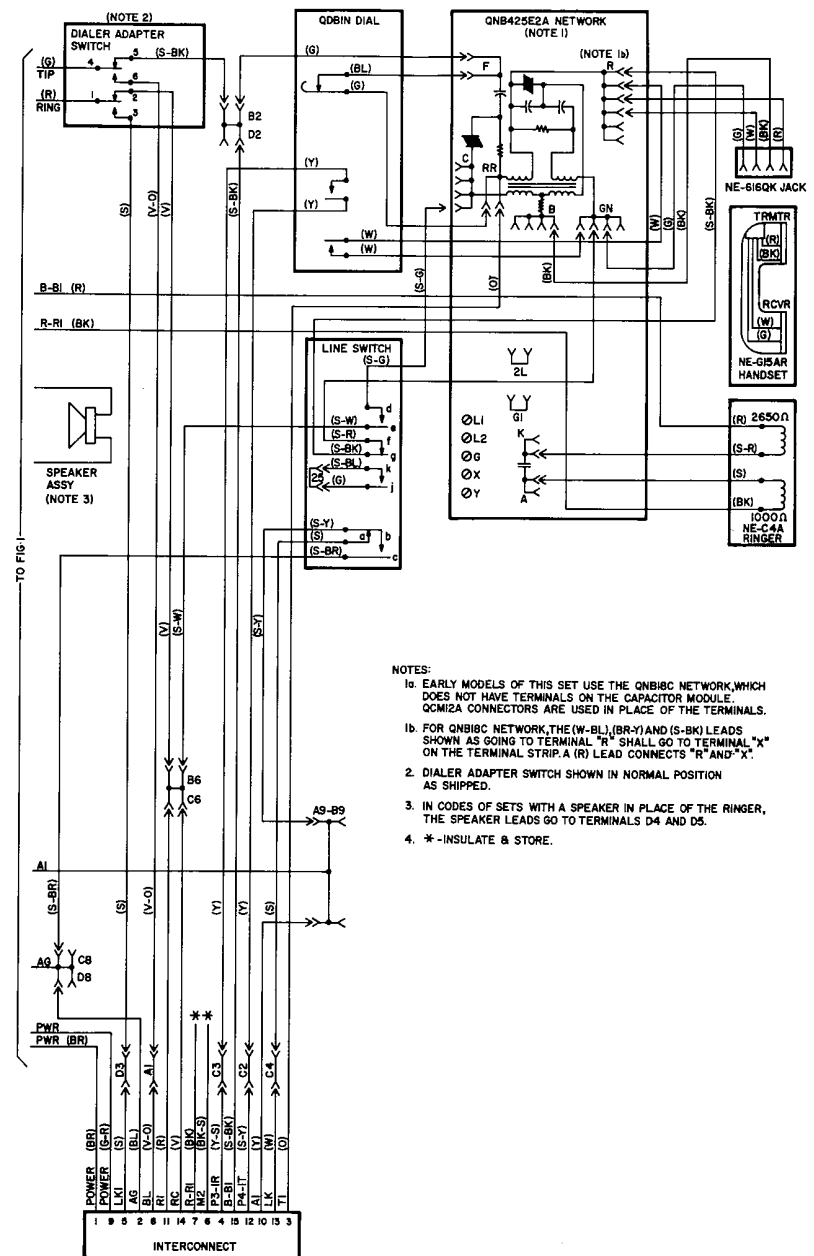
\*Connect to BL (Busy Lamp) lead of the station being monitored.  
 ‡ Spade tip jumper leads are contained in connector package PO574146, packed with each set.  
 † 10 VAC may be used. Use 51A lamps for 10 VAC operation.

**EXCLUSION.** The QUN18 type KTU may be used to provide the following types of exclusion:

1. Automatic exclusion (cutoff) of one or two lines, when the control station goes off-hook on either of the controlled lines.
2. Optional exclusion of one or two lines by the operation of a line pickup key converted to a non-locking pushbutton. May have lamp indication of exclusion status.

3. Automatic exclusion (cutoff) of one line, except when that line is busy. Provision for forced cutoff of a busy, excluded station by the operation of a non-locking pushbutton. Lamp indication of exclusion status.

In 2 and 3 above, the exclusion may be released by operating the HOLD button at the control station and then reaccessing the line. Exclusion is released in all cases when the control station goes on-hook. Buttons at position 8, 9 and 10 may be converted to non-locking operation by removing the locking pin.

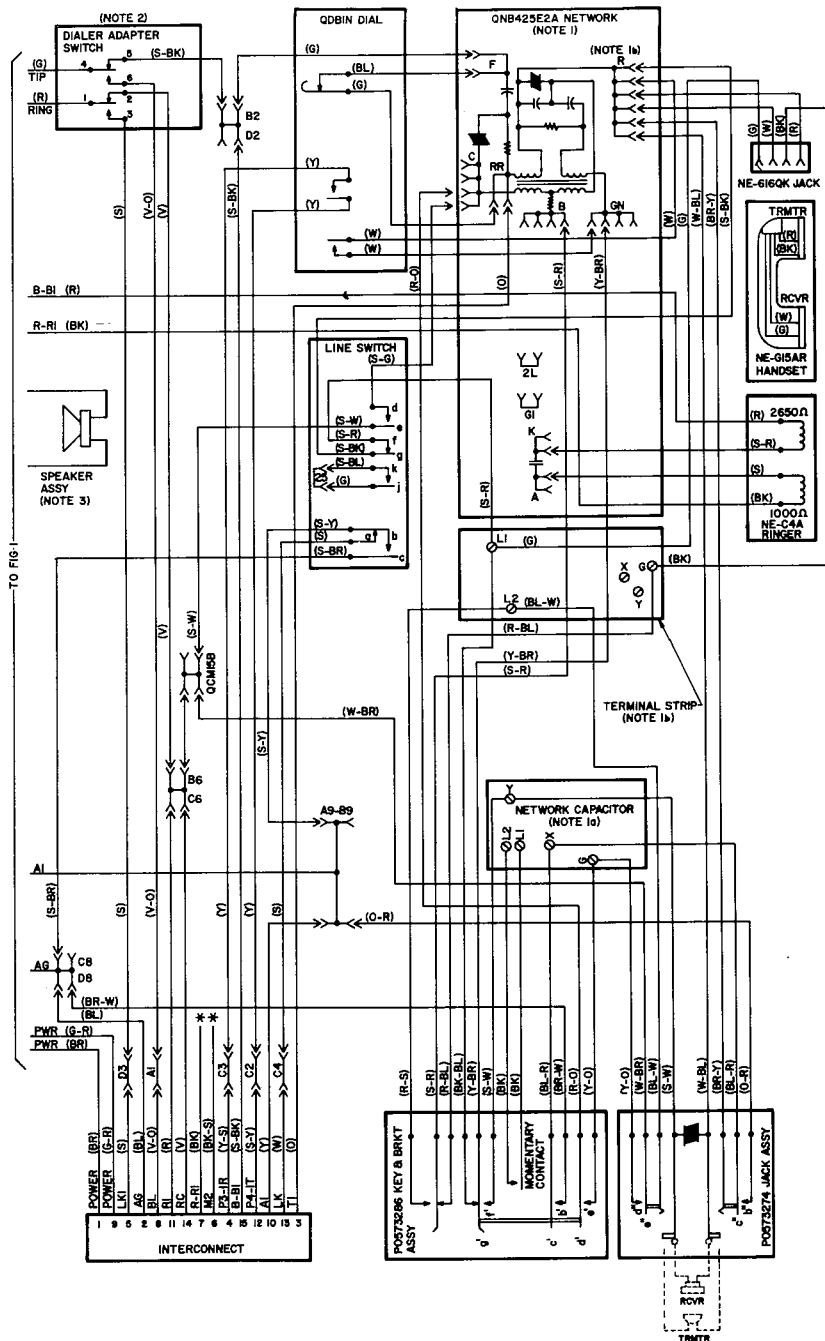


**NOTES:**

1. EARLY MODELS OF THIS SET USE THE QNB18C NETWORK, WHICH DOES NOT HAVE TERMINALS ON THE CAPACITOR MODULE. QNB18A CONNECTORS ARE USED IN PLACE OF THE TERMINALS.
2. FOR QNB18C NETWORK, THE (W-BL), (R-Y) AND (S-BK) LEADS SHOWN AS GOING TO TERMINAL "R" SHALL GO TO TERMINAL "X" ON THE TERMINAL STRIP. A (R) LEAD CONNECTS "R" AND "X".
3. DIALER ADAPTER SWITCH SHOWN IN NORMAL POSITION AS SHIPPED.
4. IN CODES OF SETS WITH A SPEAKER IN PLACE OF THE RINGER, THE SPEAKER LEADS GO TO TERMINALS D4 AND D5.
5. \* - INSULATE & STORE.

**Fig. 3 - Schematic Diagram of the QSK200F1X, F2X, F3X, F5X and F6X Telephone Sets. (See Page 3 to determine what components are included in a particular code of telephone set).**





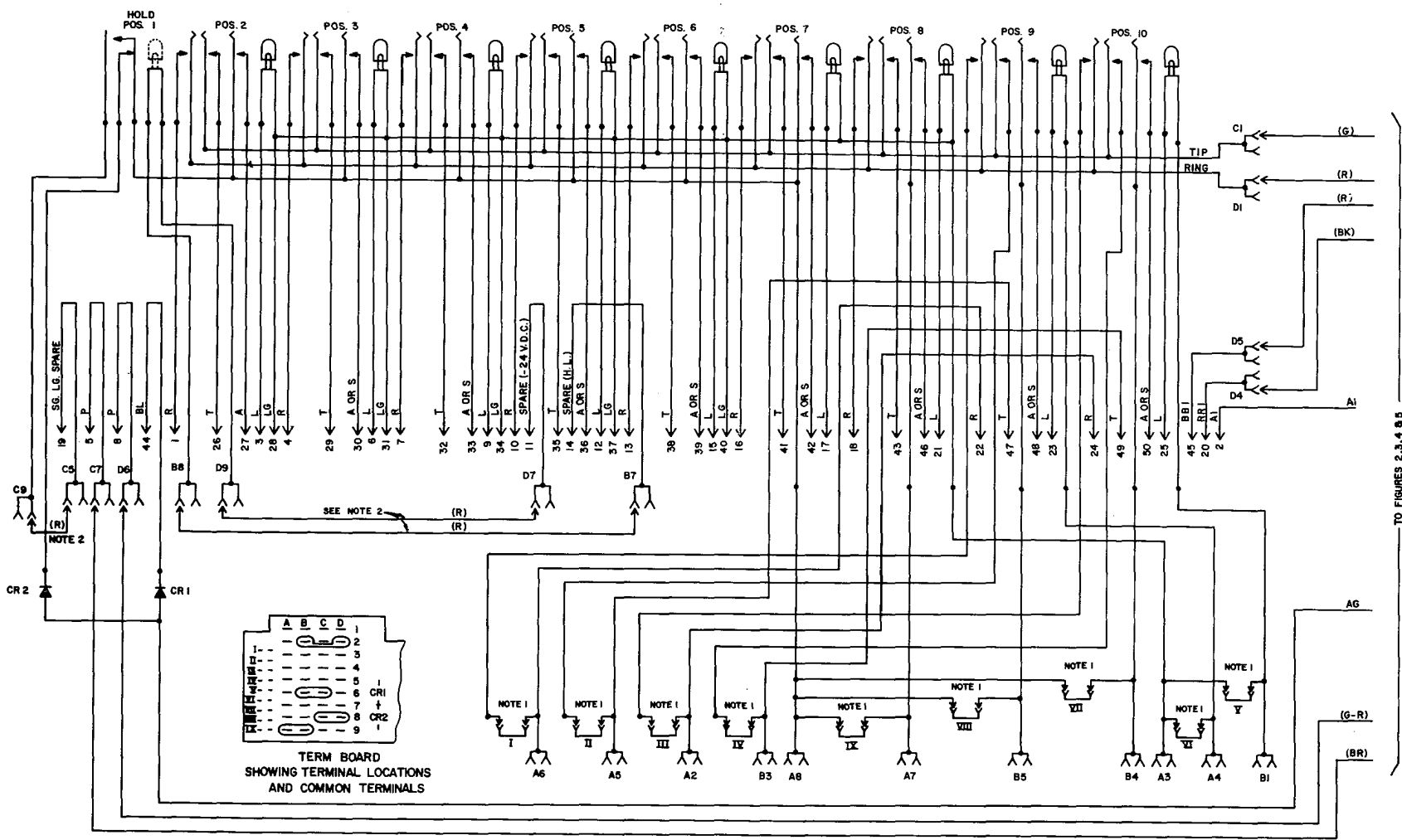
**AUXILIARY DIAL.** An NE-1035B3QA station dial may be used with the QSK200F1X if DIGITONE signals are required for computer input.

**NE-1035B3QA AUXILIARY DIAL CONNECTION INFORMATION**

DIAL LEADS	BR-W	S-R	W-BR	O-R	R-O	BR-Y*
Set Terminals	R		C3*		C	C2*
(R) Handset Lead from Terminal R		Y				
(W) Handset Lead from Terminal R				X		

*Note:* Insulate and store unused leads.  
 \* These connections required for muting handsfree. Use QCM15B connector or equivalent.

Fig. 2 - Schematic Diagram of the QSK200FX and QSK200F4X Telephone Sets.



TO FIGURES 2, 3, 4 & 5

- NOTES:
1. JUMPER MAY BE REMOVED TO PROVIDE CERTAIN OPTIONS.  
(SEE APPROPRIATE TABLES OF INSTALLATION MANUAL PO574147)
  2. JUMPER LEADS, PO14E712.

Fig. 1 - Schematic Diagram of the NE-647Q Type Key