

QUS1A, QUS1B, QUS1C, AND QUS1C1

"COMPANION\*" HANDS-FREE UNITS

CONNECTIONS (NORTHERN ELECTRIC TELEPHONE SETS)

CONTENTS	PAGE
1. GENERAL . . . . .	1
2. CONNECTIONS . . . . .	1
POWER . . . . .	1
QUS1A . . . . .	2
QUS1B, QUS1C1 . . . . .	2
QUS1C . . . . .	3

1. GENERAL

1.01 This section contains information required for connection of the QUS1A, QUS1B, QUS1C and QUS1C1 COMPANION hands-free units to the majority of telephone sets manufactured by Northern Electric.

1.02 Information required for connection of these units to telephone sets manufactured by companies other than Northern Electric is contained in Section 512-6256-401.

2. CONNECTIONS

POWER

2.01 Each COMPANION unit is powered by a separately mounted NE-2012B transformer (or equivalent power supply) which is connected to the unit through the associated telephone set. A 115 V 50/60 Hz commercial power outlet is required for the transformer.

2.02 The maximum allowable lengths of 22, 24, and 26 AWG cable for connecting the NE-2012B transformer to the hands-free unit are:

- 22 AWG – 400 feet
- 24 AWG – 250 feet
- 26 AWG – 150 feet

2.03 The power supply is connected to the telephone set through spare conductors in the mounting cord or by installing an additional 2 conductor cord.

2.04 A common power supply may be used for multiple installations but is not recommended. If a common power supply is used, the following conditions must be met to prevent degradation of performance and possible damage to the unit.

- (a) The power supply output *should not be grounded.*
- (b) The power supply should be 27 V ac±10% with 80 ohms series resistance or 36 V dc±10% with 170 ohms series resistance. The series resistance includes wiring and internal resistance of the power supply.

*Note:* A resistor should be added in series if the resistance of the loop plus the internal resistance of the power supply is less than the required series resistance.

2.09 Schematic diagrams of connections to typical telephone sets are given in Fig. 7 through 12.

2.10 If a diode is required for an add-on feature in the associated telephone set:

- (a) Make the connections as for the station busy lamp (see appropriate table).
- (b) Refer to the appropriate section on the associated telephone set for information on the add-on feature.

### QUS1C

2.11 The QUS1C unit is equipped with a plug on the right side which mates with the jack on the left side of the LOGIC 10\* telephone set. The block schematic diagram for the connection is shown in Fig. 2.

2.12 To prepare the LOGIC 10 telephone set for connection to the QUS1C unit, the filler plate in the left side must be removed and replaced with the jack which is stored inside the telephone set.

2.13 To connect the QUS1C unit to 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 the unit together so that the plug is firmly in the jack.

2.14 To connect the unit and the LOGIC 10 telephone set for a wall-mounted installation:

(a) Mount a QVP7A 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.

2.15 The power supply is connected through the LOGIC 10 telephone set in either of the following ways:

(a) Connect the NE-2012B transformer (or equivalent power supply) with a 2-conductor cord to 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 telephone set through the connector cable. For an A25B connector cable, connect the transformer to the (G-R) and (S-W) leads of the cable. For any other connector cable, use the leads that terminate on pins 5 and 8 of the connector.

2.16 If the common signal cutoff feature is required:

(a) Remove (S-Y) lead from the telephone set network terminal 2L, and connect to terminal 27 on the terminal block.

(b) Remove (S-BK) lead from terminal 37 on the terminal block, and connect to terminal 2L on the network.

2.17 The auxiliary transfer contacts are not available with the LOGIC 10 telephone set.

2.18 The BL lead for external station busy lamp or relay control is terminated on terminals 10 through 12 of the LOGIC 10 telephone set.

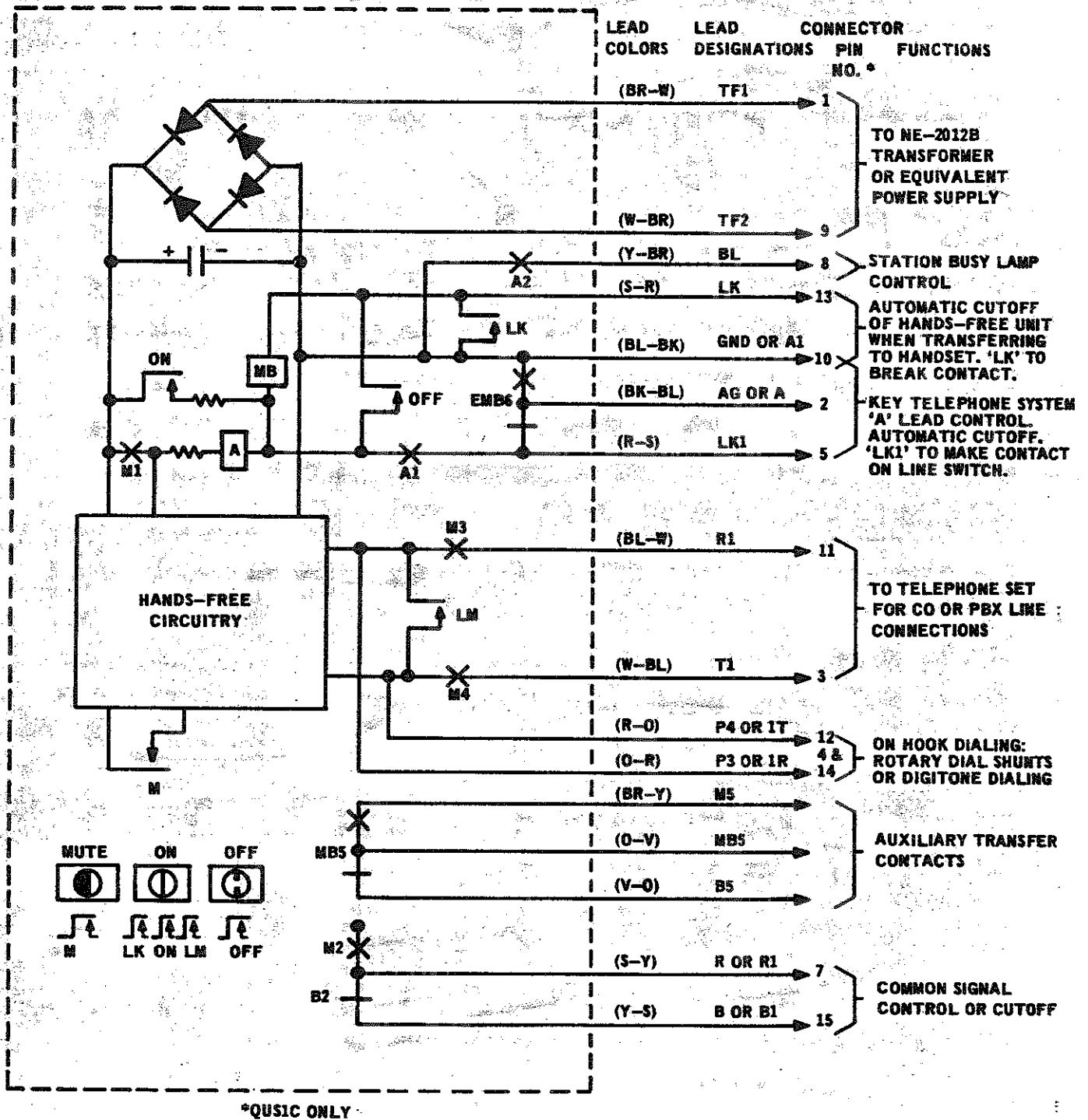
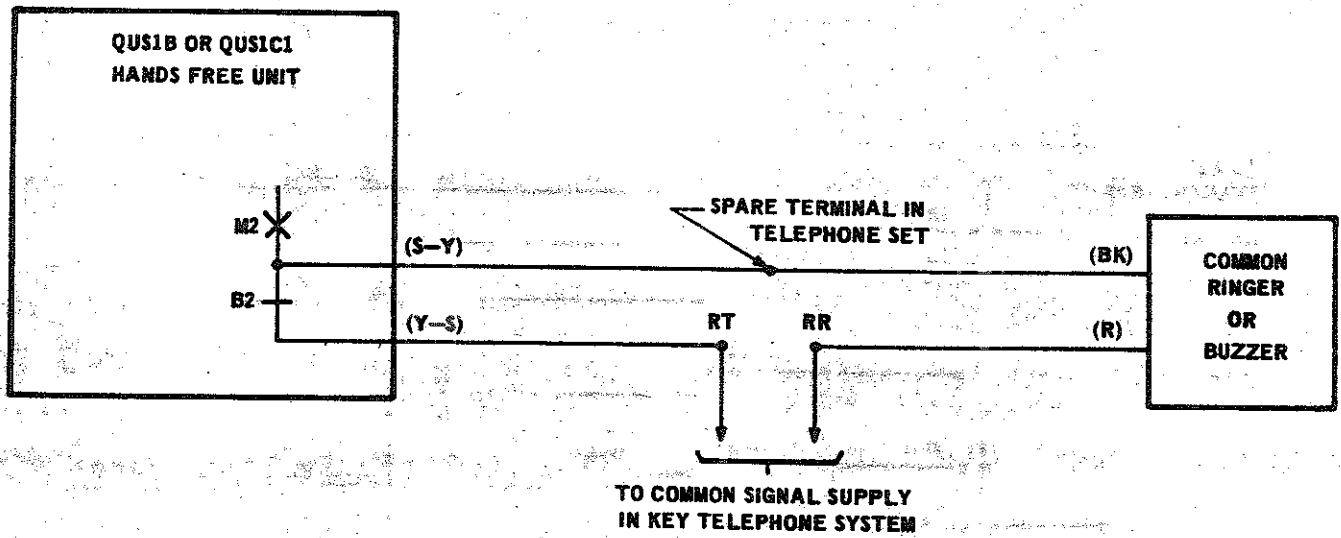
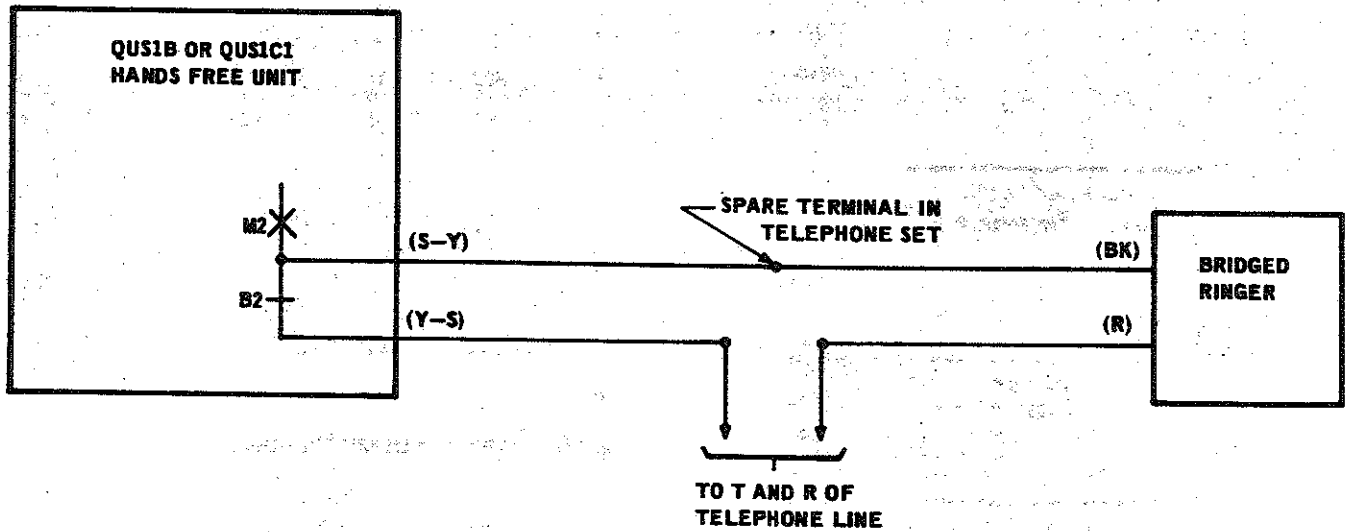


Fig. 2 - QUS1B, QUS1C, and QUS1C1 Hands-Free Unit Block Schematic Diagram Showing Connections to a Telephone Set



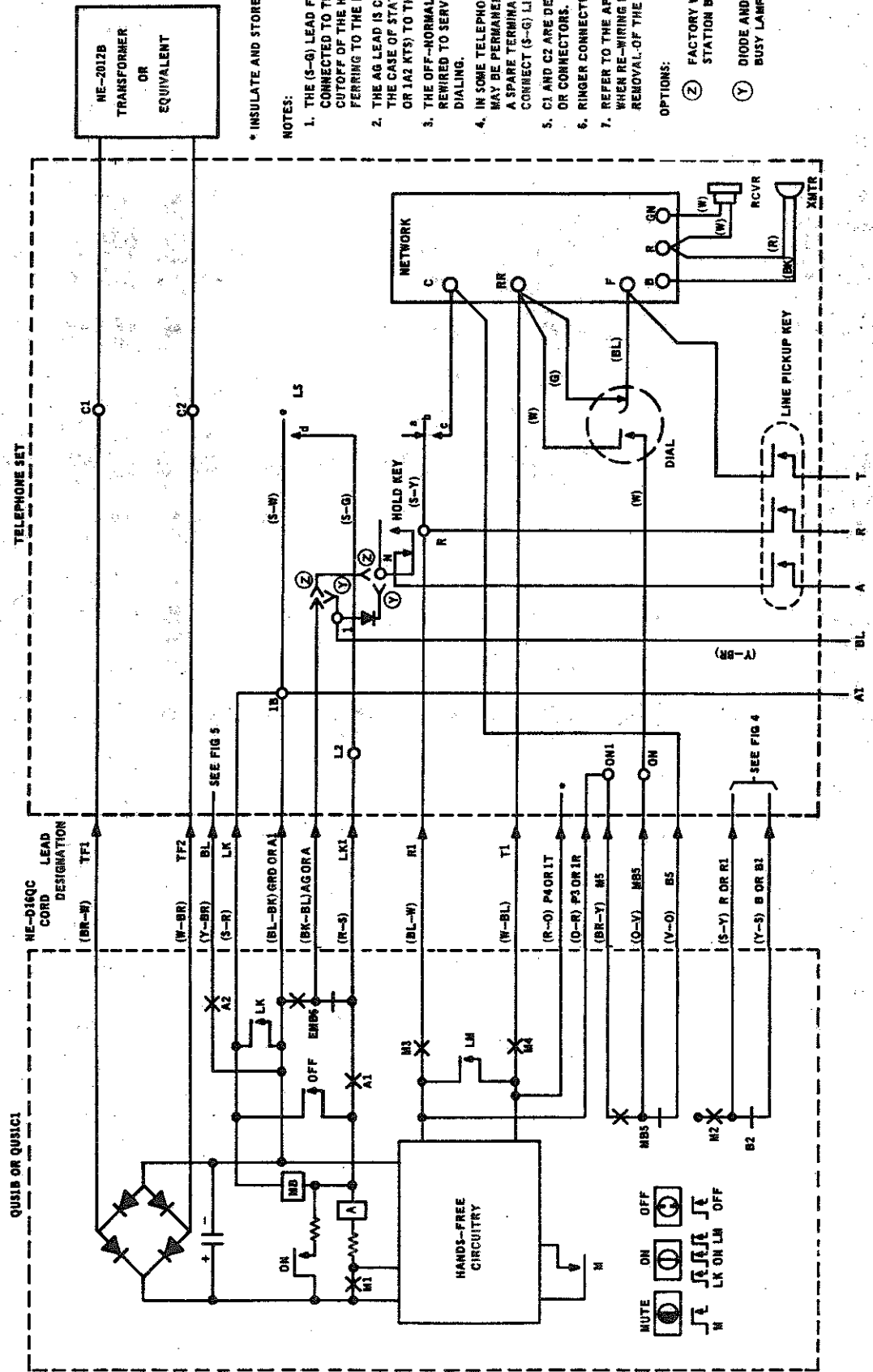
(a) Common Signal Cutoff



(b) Bridged Ringer Cutoff

Fig. 4 - Ringer Cutoff





\* INSULATE AND STORE

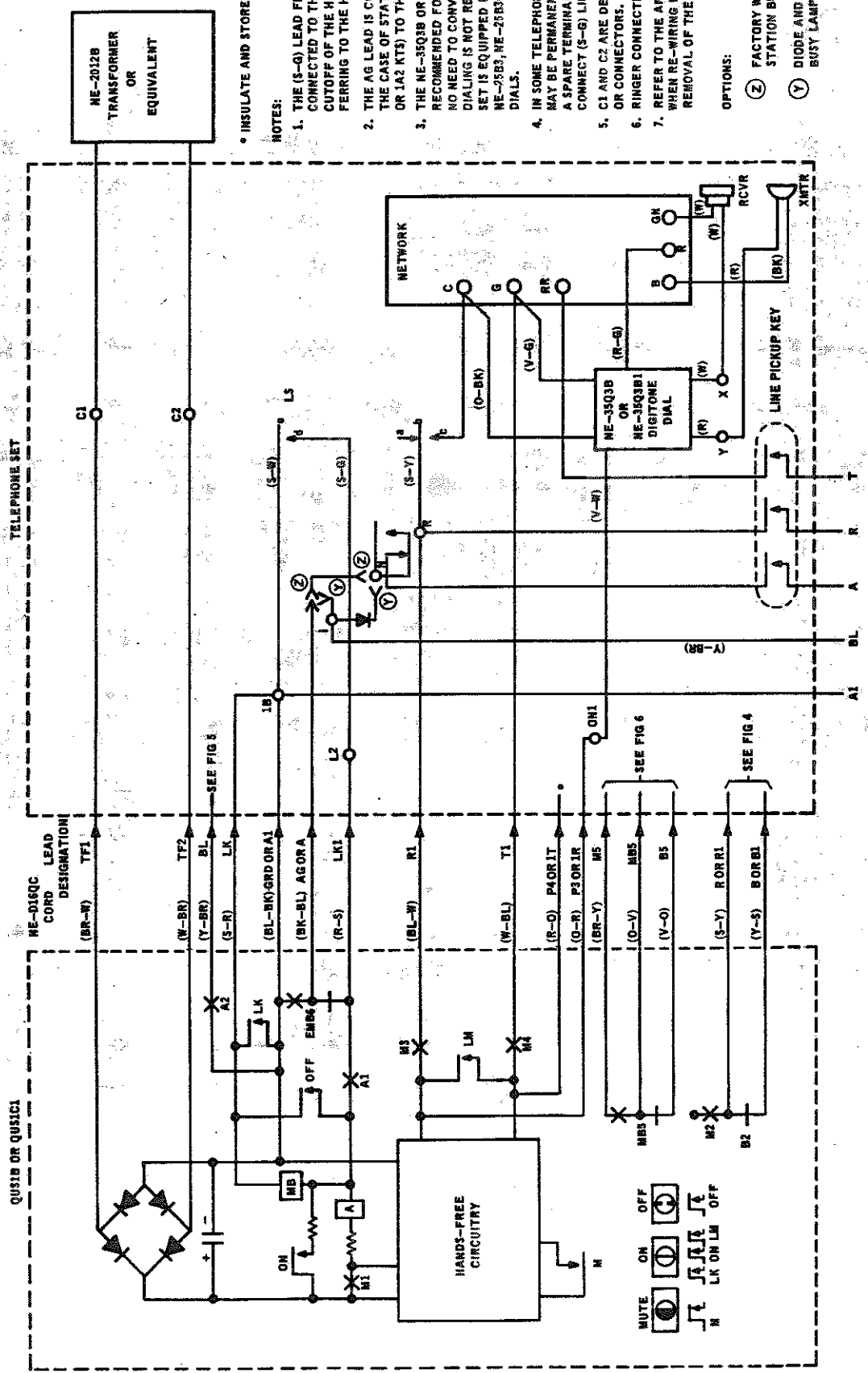
NOTES:

1. THE (S-G) LEAD FROM THE LINE SWITCH LS IS CONNECTED TO THE LK1 LEAD FOR AUTOMATIC CUTOFF OF THE HANDS-FREE UNIT WHEN TRANSFERRING TO THE HANDSET.
2. THE AG LEAD IS CONNECTED THROUGH A DIODE IN THE CASE OF STATION BUSY LAMP IN THE NE-1A1 OR 1A2 KTS TO THE A LEAD OF THE SYSTEM.
3. THE OFF-NORMAL (W) LEADS OF THE DIAL ARE REQUIRED TO SERVE BOTH OFF-HOOK AND ON-HOOK DIALING.
4. IN SOME TELEPHONE SETS THE BUSY LAMP BL LEAD MAY BE PERMANENTLY WIRED TO TERMINAL L2. USE A SPARE TERMINAL OR QUICZA CONNECTOR TO CONNECT (S-G) LINE SWITCH LEAD TO (R-S) LK1 LEAD.
5. C1 AND C2 ARE DESIGNATIONS FOR SPARE TERMINALS OR CONNECTORS.
6. RINGER CONNECTIONS ARE NOT SHOWN.
7. REFER TO THE APPROPRIATE TELEPHONE DIAGRAM WHEN RE-WIRING IS REQUIRED IN INSTALLATION OF REMOVAL OF THE QUISB OR QUISC1.

OPTIONS:

- ② FACTORY WIRED FOR NE-1A1 OR 1A2 WITHOUT STATION BUSY LAMP.
- ① DIODE AND BL LEAD REQUIRED FOR STATION BUSY LAMP.

Fig. 8 - Connections to a Typical Rotary Dial Key Telephone Set



• INSULATE AND STORE

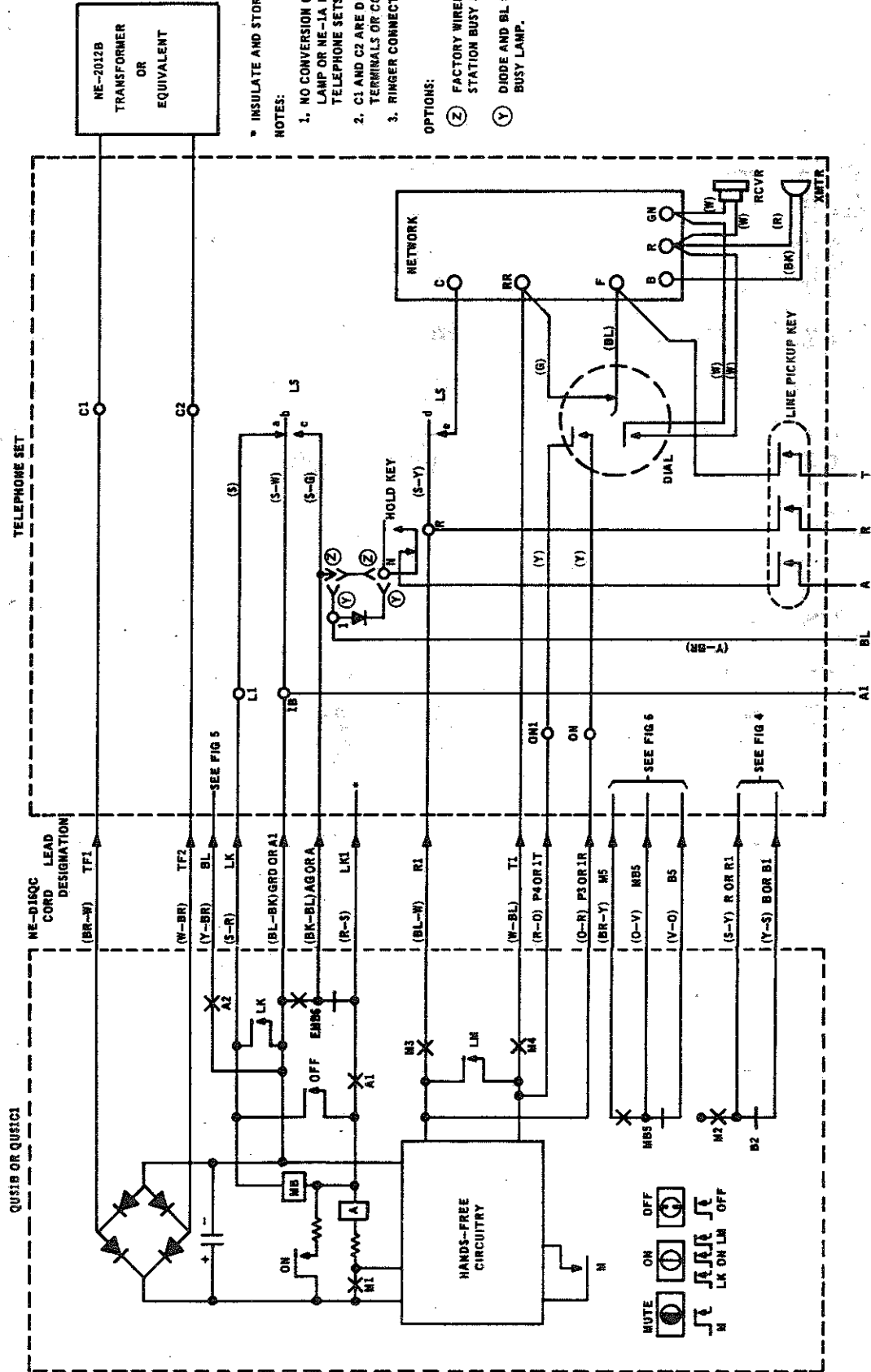
NOTES:

1. THE (S-G) LEAD FROM THE LINE SWITCH LS IS CONNECTED TO THE LK1 LEAD FOR AUTOMATIC CUTOFF OF THE HANDS-FREE UNIT WHEN TRANSFERRING TO THE HANDSET.
2. THE AG LEAD IS CONNECTED (THROUGH A DIODE IN THE CASE OF STATION BUSY LAMP IN THE ME-1A1 OR 1A2 NTS) TO THE A LEAD OF THE SYSTEM.
3. THE NE-35Q3B OR NE-35Q3B1 DIGITONE DIAL IS RECOMMENDED FOR ON-HOOK DIALING. THERE IS NO NEED TO CONVERT TO THIS DIAL IF ON-HOOK DIALING IS NOT REQUIRED OR IF THE TELEPHONE SET IS EQUIPPED FOR ON-HOOK DIALING WITH NE-25B3, NE-25B3QA, NE-25Y3, OR NE-35B3 TYPE DIALS.
4. IN SOME TELEPHONE SETS THE BUSY LAMP BL LEAD MAY BE PERMANENTLY WIRED TO TERMINAL L2. USE A SPARE TERMINAL OR QCH12A CONNECTOR TO CONNECT (S-B) LINE SWITCH LEAD TO (R-S) LK1 LEAD, OR CONNECTORS.
5. C1 AND C2 ARE DESIGNATIONS FOR SPARE TERMINALS OR CONNECTORS.
6. RINGER CONNECTIONS ARE NOT SHOWN.
7. REFER TO THE APPROPRIATE TELEPHONE DIAGRAM WHEN RE-WIRING IS REQUIRED IN INSTALLATION OR REMOVAL OF THE QUS1B OR QUS1C.

OPTIONS:

- (Z) FACTORY WIRED FOR ME-1A1 OR 1A2 WITHOUT STATION BUSY LAMP.
- (Y) DIODE AND BL LEAD REQUIRED FOR STATION BUSY LAMP.

Fig. 9 — Connections to a Typical DIGITONE Dial Key Telephone Set



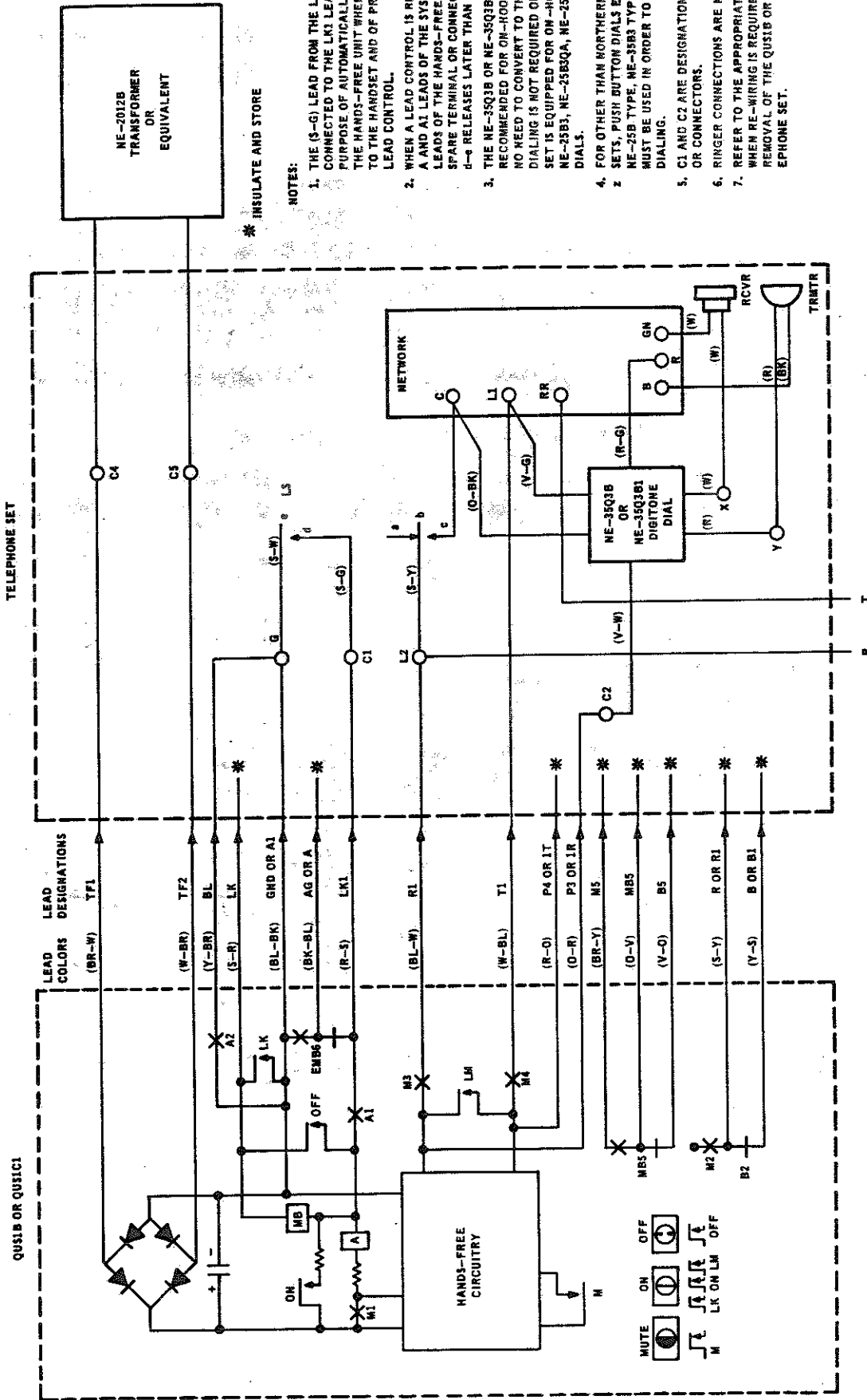
INSULATE AND STORE  
 NOTES:  
 1. NO CONVERSION OTHER THAN FOR STATION BUSY LAMP OR NE-1A KTS IS NECESSARY IN THESE TELEPHONE SETS.  
 2. C1 AND C2 ARE DESIGNATIONS FOR SPARE TERMINALS OR CONNECTORS.  
 3. RINGER CONNECTIONS ARE NOT SHOWN.

OPTIONS:  
 (Z) FACTORY WIRED FOR NE-1A1 OR 1A2 WITHOUT STATION BUSY LAMP.  
 (Y) DIODE AND BL LEAD WIRED FOR STATION BUSY LAMP.

Fig. 10 — Connections to a Rotary Dial Key Telephone Set Equipped With 1 Set of Transfer Contacts in the Line Switch and 2 Pairs of Shunts in the Dial







\* INSULATE AND STORE

NOTES:

1. THE (S-G) LEAD FROM THE LINE SWITCH LS IS CONNECTED TO THE LK1 LEAD FOR THE DUAL PURPOSE OF AUTOMATICALLY CUTTING OFF THE HANDS-FREE UNIT WHEN TRANSFERRING TO THE HANDSET AND OF PROVIDING THE A LEAD CONTROL.
2. WHEN A LEAD CONTROL IS REQUIRED CONNECT THE A AND A1 LEADS OF THE SYSTEM TO THE A AND A1 LEADS OF THE HANDS-FREE UNIT BY MEANS OF A SPARE TERMINAL OR CONNECTOR. ENSURE THAT d-e RELEASES LATER THAN b-c IN THE LS.
3. THE NE-3503B OR NE-3503B1 DIGITONE DIAL IS RECOMMENDED FOR ON-HOOK DIALING. THERE IS NO NEED TO CONVERT TO THIS DIAL IF ON-HOOK DIALING IS NOT REQUIRED OR IF THE TELEPHONE SET IS EQUIPPED FOR ON-HOOK DIALING WITH NE-25B3, NE-25B3QA, NE-25Y3, OR NE-35B3 TYPE DIALS.
4. FOR OTHER THAN NORTHERN ELECTRIC TELEPHONE SETS, PUSH BUTTON DIALS EQUIVALENT TO THE NE-25B TYPE, NE-35B3 TYPE, OR NE-35Q3B TYPE MUST BE USED IN ORDER TO ACHIEVE ON-HOOK DIALING.
5. C1 AND C2 ARE DESIGNATIONS FOR SPARE TERMINALS OR CONNECTORS.
6. RINGER CONNECTIONS ARE NOT SHOWN.
7. REFER TO THE APPROPRIATE TELEPHONE DIAGRAM WHEN RE-WIRING IS REQUIRED IN INSTALLATION OR REMOVAL OF THE QUSIB OR QUSICI FROM THE TELEPHONE SET.

Fig. 12 - Connections to a Typical Single Line DIGITONE Dial Telephone Set

TABLE A  
QSK100, 2100, 191, 2191 TYPE  
TELEPHONE SETS

TELEPHONE SETS†		QSK100A/B, QSK2100A/B, QSK191B, QSK2191B						
KEY TELEPHONE SYSTEMS		INDIVIDUAL OR BRIDGED CO OR PBX LINE				NE-1A1, NE-1A2		
ITEM	LEAD COLORS	LEAD DESIGNATION	SET TERMINALS	NETWORK TERMINALS	NE-DQB LEAD COLOR	SET TERMINALS	NETWORK TERMINALS	NE-DQOB LEAD COLOR
TELEPHONE SET CONVERSIONS	Line switch leads	(S) (S-Y) (S-BR)		L3 G1	G	L3 G1	L3 G1	
	External connection with NE-D6OB mounting cord	(R) (G) (Y) (BK)	R T A1 A	(or C) G *(or Y)	X† L1 G Y	(or C) G Y	(or C) G Y	
QSB AND QUSCI UNITS	CO or PBX Telephone line	(W) (BL)	LK1	G1	*	G1	G1	
	Power supply leads	(BL-W) (W-BL)	R1** T1	(or C) (R) (G)	X† L1	(or C) (R) (G)	X† L1	(R) (G)
NE-D16QC CORD	Automatic cutoff of unit when transferring to hand-set and key telephone system A lead control	(BR-W) (W-BR)	TF1 TF2	Connect to output leads from NE-2012B transformer (or equivalent) using spare terminals or QCM12A connectors.				
	On-hook dialing	(S-R) (R-S) (BL-BK) (BK-BL)	LK LK1 GND or A1 AG or A	G G *	G G Y	(Y) (W) (Y)	G G Y	(Y) (W) (Y) (BK)
	Auxiliary transfer contacts for optional control	(O-R) (R-O)	P3 or IR P4 or IT	*	*		*	*
	External station busy lamp or relay control	(V-O) (O-V) (BR-Y)	B5 MB5 M5	See Fig. 6				
	Common signal cutoff or bridged ringer cutoff	(Y-BR)	BL	See Fig. 5				

† On-hook dialing is not available with these telephone sets.  
\* Insulate and store.  
‡ This terminal applies only to DIGITONE sets; use network terminal C otherwise.  
\*\* For wall mounted rotary dial sets, connect ringer line lead (red) to terminal L2 and connect L2 to C using an NE-M1W cord. For bridged ringing, connect ringer across R and T of the telephone line.

**TABLE B**  
**NE-564, 565, 2565, TYPE TELEPHONE SETS FOR SK-1 KTS**

TELEPHONE SETS				NE-564QFA,B,C,A1,B1,C1 NE-564QGA,B,C,A1,B1,C1 NE-565QFA,B,C,A1,B1,C1 NE-565QGA,B,C,A1,B1,C1		NE-2565QFA,NE-2565QFA1	
KEY TELEPHONE SYSTEM				SK-1		SK-1	
	ITEM	LEAD COLORS	LEAD DESIGNATIONS	TERMINALS		TERMINALS	
				KEY	NETWORK	KEY	NETWORK
TELEPHONE SET CONVERSIONS	Line switch leads	(S-R) (S-BK) (B-R) (Y) (S-G)		X 4 R X 1B		X 4 R X R	
	Dial leads	(W) (W) (Y) (Y)		1 2	GN R		
QUSIB AND QUSICI UNITS NE-D16QC CORD	CO or PBX telephone line	(BL-W) (W-BL)	R1 T1	1B	RR	1B	G
	Power supply leads	(BR-W) (W-BR)	TF1 TF2	Connect to output leads from NE-2012B transformer (or equivalent) using spare terminals or QCM12A connectors.			
	Automatic cutoff of unit when transferring to handset and key telephone system A lead control	(S-R) (R-S) (BL-BK) (BK-BL)	LK LK1 GND or A1 AG or A	X 4 X R		X 4 X R	
	On-hook dialing	(O-R) (R-O)	P3 or IR P4 or IT	1 2		1 2	
	Busy lamp control	(V-O) (O-V) (BR-Y)	B5 MB5 M5	* N ON		* N ON	
	External station busy lamp or relay control	(Y-BR)	BL	See Fig. 5		See Fig. 5	
	Common signal cutoff or bridged ringer cutoff	(S-Y) (Y-S)	R or R1 B or B1	See Fig. 4		See Fig. 4	
*Insulate and store.							

TABLE C  
NE-701, 702, 711, 1702, 2702 TYPE  
TELEPHONE SETS

TELEPHONE SETS†		NE-701B		NE-702QA, NE-1702BQ1A NE-702BQ1A, NE-2702BQ1A		NE-711B			
KEY TELEPHONE SYSTEMS		NE-1A1, NE-1A2 INDIVIDUAL OR BRIDGED CO OR PBX LINE							
ITEM	LEAD COLORS	LEAD DESIGNATION	NETWORK TERMINAL	NE-D6AB LEAD COLOR	NETWORK TERMINAL	NE-D6AB LEAD COLOR	SET TERMINAL	NETWORK TERMINAL	LEAD COLORS
External connection	-	-							1-LINE PICKUP 2-LINE PICKUP
CO or PBX telephone line	(BL-W) (W-BL)	R1 T1	F LI	R G	G LI	R G		L2 RR	O-R O-G V-G
Power supply leads	(BR-W) (W-BR)	TF1 TF2							
Automatic cutoff of unit when transferring to hand-set and key telephone system A lead control	(S-R) (R-S) (BL-BK) (BK-BL)	LK LK1 GND or AI AG or A	D 3 C1	W Y BL	A 3 S	BL W Y	10 7 9		O-BK B O
On-hook dialing	(O-R) (R-O)	P3 or IR P4 or IT	*		*		*		
Auxiliary transfer contacts for optional control	(V-O) (O-V) (BR-Y)	B5 MB5 M5							
External station busy lamp or relay control	(Y-BR)	BL							
Common signal cutoff or bridged ringer cutoff	(S-Y) (Y-S)	R or R1 B or B1							

† On-hook dialing is not available with these telephone sets.  
\* Insulate and store.  
‡ See appropriate section for telephone set conversion as with the 3A speakerphone.

TABLE D  
NE-500, 554 TYPE TELEPHONE SETS

TELEPHONE SETS		NE-500C/D, NE-554B** REQUIRED FOR A LEAD CONTROL				NE-500L/M NE-500LR (nonidist)		NE-500R S NE-500RR (optional)		
KEY TELEPHONE SYSTEMS		NE-1A1, NE-1A2 INDIVIDUAL OR BRIDGED CO OR PBX LINE								
TELEPHONE SET CONVERSIONS	ITEM	LEAD COLORS	LEAD DESIGNATION	SET TERMINALS	NETWORK TERMINALS	SET TERMINALS	NETWORK TERMINALS	SET TERMINALS	NETWORK TERMINALS	
	Line switch leads	(S-W) (S-G)		E1	G	5 C1†				
	Telephone line leads	(R) (G)	R T		L2 F		L2 F		L2 G	
	Dial leads	(W) (W)		E2	RR	C2	RR			
	CO or PBX Telephone line	(BL-W) (W-BL)	R1 T1		L2 RR		L2 RR	3 E2		
	Power supply leads	(BR-W) (W-BR)	TF1 TF2	Connect to output leads from NE-2012B transformer (or equivalent) using spare terminals or QCM12A connectors.						
	Automatic cutoff of unit when transferring to hand-set and key telephone system A lead control	(S-R) (R-S) (BL-BK) (BK-BL)	LK LK1 GND or A1 AG or A	E1	G G or L1	5 C1 5 6		4 * E1 5		
	On-hook dialing	(O-R) (R-O) (V-O) (O-V) (BR-Y)	P3 or IR P4 or IT B5 MB5 M5	5 * E2 5	C	C3 * C2 C3	C	6 1	Auxiliary transfer contacts for optional control. See Fig. 6.	
	External station busy lamp or relay control	(Y-BR)	BL	See Fig. 5						See Fig. 5
	Common signal cutoff or bridged ringer cutoff	(S-Y) (Y-S)	R or R1 B or B1	See Fig. 4						See Fig. 4

\* Insulate and store.  
† Leads designated C1, C2, etc. in table must be bridged to leads with identical designations using QCM12A connectors or spare terminals.  
\*\* On-hook dialing is not available with the 554B telephone set.



TABLE F  
NE-630, 1630, 2630 TYPE  
TELEPHONE SETS

TELEPHONE SETS		NE-630, NE-631, NE-634, NE-635				NE-1A1, NE-1A2				NE-1A				NE-1A1, NE-1A2				
KEY TELEPHONE SYSTEMS		NO		YES		NO		YES		NO		YES		NO		YES		
STATION BUSY LAMP CIRCUIT		TERMINALS		TERMINALS		TERMINALS		TERMINALS		TERMINALS		TERMINALS		TERMINALS		TERMINALS		
ITEM	LEAD COLORS	LEAD DESIGNATIONS	KEY NETWORK		KEY NETWORK		KEY NETWORK		KEY NETWORK		KEY NETWORK		KEY NETWORK		KEY NETWORK		KEY NETWORK	
			KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK
			Use X wiring as described in BSP 502-630-401CA or NEP 2013Q-201		Use X and Y wiring		Use Z wiring		Use X wiring		Use X wiring		Use Z wiring		Use X and Y wiring			
CO or PBX Telephone line	(BL-W) (W-BL)	R1 T1	1	RR	1	RR	1	RR	1	RR	2	10	2	10	2	10	2	10
Power supply leads	(BR-W) (W-BR)	TF1 TF2	Connect to output leads from NE-2012B transformer (or equivalent) using spare terminals or QCM12A connectors.															
Automatic cutoff of unit when transferring to hand set and key telephone system A lead control	(S-R) (R-S) (BL-BK) (BK-BL)	LK LK1 GND or A1 AG or A	L1	L1	L1	L1	L1	L1	L1	L1	L1	L1	L1	L1	L1	L1	L1	L1
On-hook dialing	(O-R) (R-O)	P3 or IR P4 or IT	W BB	W BB	W BB	W BB	W BB	W BB	W BB	W BB	W BB	W BB	W BB	W BB	W BB	W BB	W BB	W BB
Auxiliary transfer contacts for optional control	(V-O) (O-V) (BR-Y)	B5 M5 M5	See Fig. 6															
External station busy lamp or relay control	(Y-BR)	BL	See Fig. 5															
Common signal cutoff or bridged ringer cutoff	(S-Y) (Y-S)	R or R1 B or B1	See Fig. 4															
* Insulate and store																		



TABLE G  
NE-511, 1511, 1558, 2511, 2558 TYPE  
TELEPHONE SETS

TELEPHONE SETS		NE-511C/D				NE-558C/D†				NE-1511DR, NE-1511DQA, NE-2511DQA				NE-1558DR†, NE-2558DR†				
KEY TELEPHONE SYSTEMS		NE-1A1, NE-1A2		NE-1A1, NE-1A2		NE-1A1, NE-1A2		NE-1A1, NE-1A2		NE-1A1, NE-1A2		NE-1A1, NE-1A2		NE-1A1, NE-1A2		NE-1A1, NE-1A2		
STATION BUSY LAMP CIRCUIT ‡		NO		YES		NO		YES		NO		YES		NO		YES		
ITEM	LEAD COLORS	LEAD DESIGNATION	SET TERMINALS	NETWORK TERMINALS	SET TERMINALS	NETWORK TERMINALS	SET TERMINALS	NETWORK TERMINALS	SET TERMINALS	NETWORK TERMINALS	SET TERMINALS	NETWORK TERMINALS	SET TERMINALS	NETWORK TERMINALS	SET TERMINALS	NETWORK TERMINALS	SET TERMINALS	NETWORK TERMINALS
Diode assembly P0522718 or diode NSQ034L1 (IN4384) for station busy lamp circuit			9	CI	9	CI	9	CI	9	CI	9	CI	9	CI	9	CI	9	CI
CO or PBX telephone line	(BL-W) (W-BL)	R1	L2	RR	L2	RR	L2	RR	L2	RR	L2	RR	L2	RR	L2	RR	L2	RR
Power supply leads	(BR-W) (W-BR)	TF1																
Automatic cutoff of unit when transferring of hand-set and key telephone system A lead control	(S-R) (R-S) (BL-BK) (BK-BL)	LK LK1 GND or A1 AG or A	10	9	10	9	10	9	10	9	10	9	10	9	10	9	10	9
On-hook dialing	(O-R) (R-O)	P3 or IR P4 or IT	11	G	11	G	11	G	11	G	11	G	11	G	11	G	11	G
Auxiliary transfer contacts for optional control	(V-O) (O-V) (BR-Y) (Y-BR)	BS MBS MS																
External station busy lamp or relay control	(Y-RR)	BL																
Common signal cutoff or bridged finger cutoff	(S-Y) (Y-S)	B or B1 B or B1																

Connect to output leads from NE-2012B transformer (or equivalent) using spare terminals or QCM 12A connectors.

† Install and store.  
‡ On-hook dialing is not available with these telephone sets.  
‡ When station busy lamp circuit is used connect the BL lead from KTS to terminal 9 and A lead to C1.

TABLE H  
NE-1565, 2564, 2565 TYPE  
TELEPHONE SETS

ITEM	LEAD COLORS	LEAD DESIGNATIONS	TELEPHONE SETS											
			NE-2564HQE.F, NE-2565HQE.F				NE-1A1, NE-1A2				NE-1565HQE.F, NE-1565HKQIB			
			NE-1A		NE-1A1, NE-1A2		NE-1A		NE-1A1, NE-1A2		NE-1A		NE-1A1, NE-1A2	
NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES			
TERMINALS	KEY	NETWORK	TERMINALS		TERMINALS		TERMINALS		TERMINALS		TERMINALS			
			KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK		
Line switch leads	(S-W) (S-G) (S-Y)		IB N	L2**	IB N	L2**	IB N	L2	IB N	IB N	IB N	IB N		
Hold key leads	(Y) (O-BK)		R M		R M		R M		R M	R M	R M	R M		
NE-3503B or NE-3503B1 DIGITONE dial for on- hook dialing	(O-BK) (V-W) (V-G) (R) (R-G) (W)		ON1 G Y R X	C G Y R X	ON1 G Y R X	C G Y R X	C G Y R X							
Diode assembly P052271B or diode NSQ8034L1 (IM3334) for station busy lamp circuit	NE-M1W Cond													
CO or PBX telephone line	(BL-W) (W-BL)		R T1	R G	R G	R G	R G	R G	R G	R G	R G	R G		
Power supply leads	(BR-W) (W-BR)		TF1 TF2											
Automatic cutoff of unit when transferring to hand- set and key telephone system A lead control	(S-R) (R-S) (BL-BK) (BK-BL)	LK LKI GND or A1 AG or A	IB L2	L2	IB L2	L2	IB L2	L2	IB L2	IB L2	IB L2	IB L2		
On-hook dialing (when using NE-3503B or equiva- lent dial)	(O-R) (R-O)	P3 or IR P4 or IT	ON1 *	ON1 *	ON1 *	ON1 *	ON1 *	ON1 *	ON1 *	ON1 *	ON1 *	ON1 *		
Auxiliary transfer con- trol for optional	(V-O) (O-V) (BR-Y)	B5 MBS M5												
External station busy lamp or relay control	(Y-BR)	BL												
Common signal cutoff or bridged ringer cutoff	(S-Y) (Y-S)	R or R1 B or B1												

Connect to output leads from NE-2012B transformer (or equivalent) using spare terminals of QCM12A connectors.

\* Inside and store.  
† An NE-3503B dial (or equivalent) must be installed on NE-2564HQE, F telephones sets for on-hook dialing.  
\*\* In some telephone sets the busy lamp lead may be factory wired to terminal L2. In this case use a spare terminal or QCM12A connector to connect the (S-G) line switch lead to the LK1 (R-S) lead.  
‡ Terminals 5 and 2 are for the NE-1565HQE.F, for the NE-1565HKQIB use terminals ON1 and ON2.

