

QUS1A, QUS1B, QUS1C, AND QUS1C1

"COMPANION*" HANDS-FREE UNITS

CONNECTIONS (NORTHERN ELECTRIC TELEPHONE SETS)

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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.

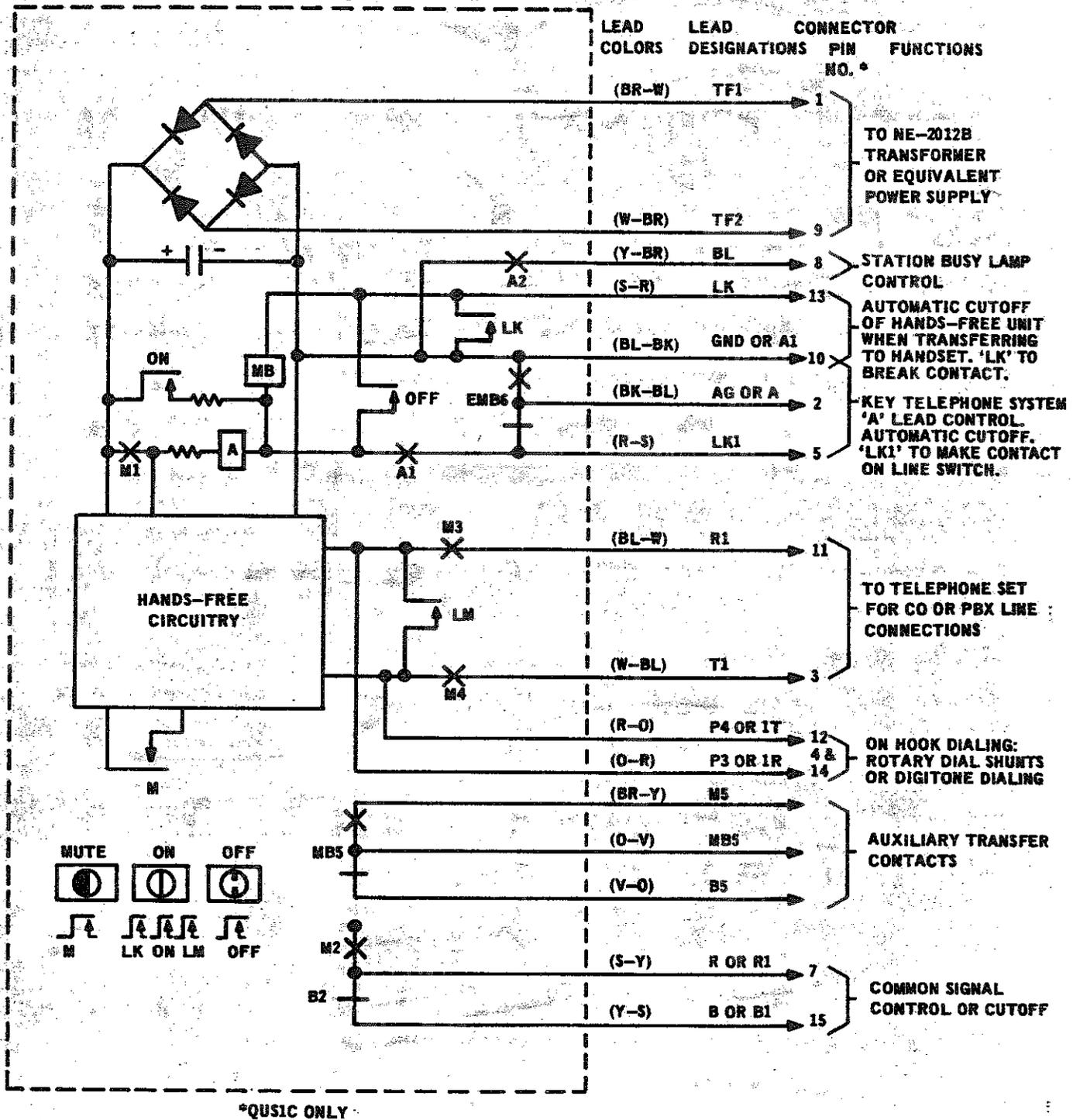
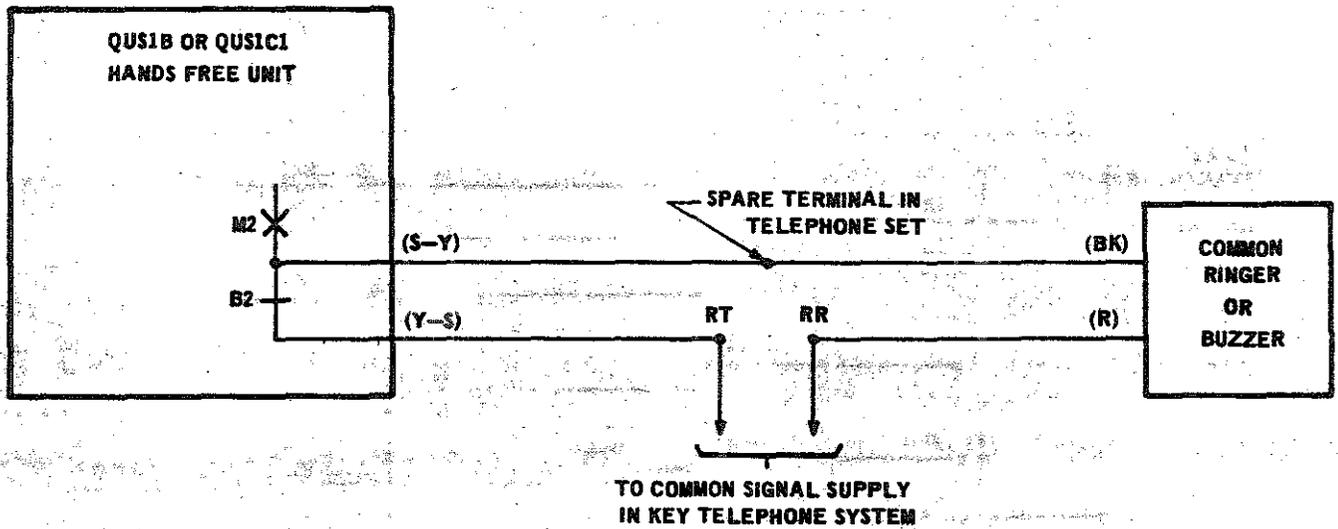
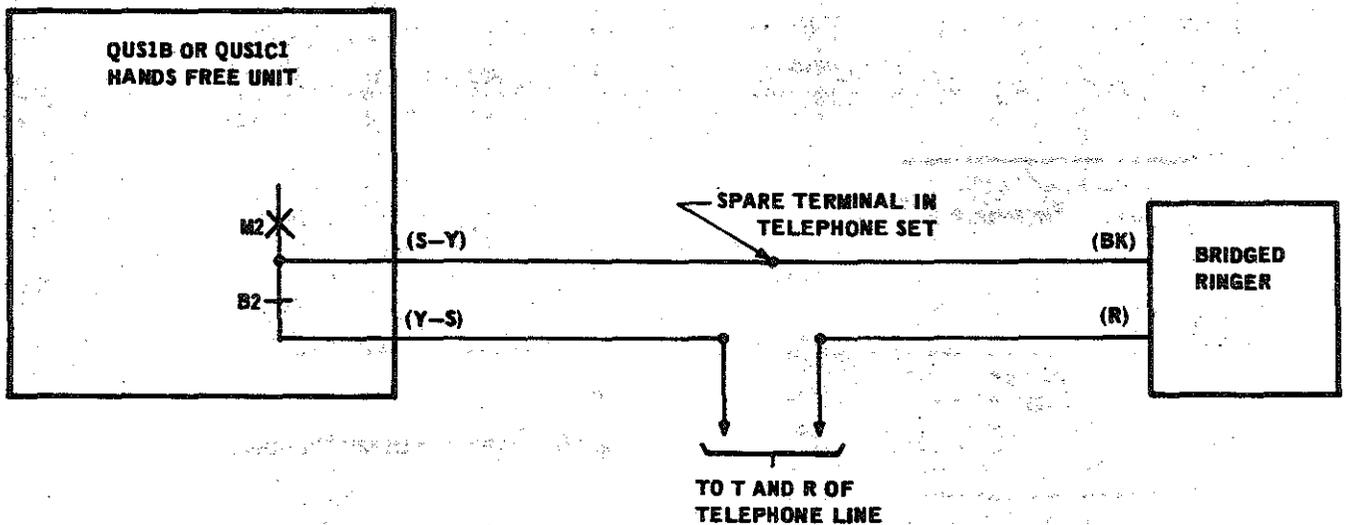


Fig. 2 - QUS1B, QUS1C, and QUS1C1 Hands-Free Unit Block Schematic Diagram Showing Connections to a Telephone Set



(a) Common Signal Cutoff



(b) Bridged Ringer Cutoff

Fig. 4 - Ringer Cutoff

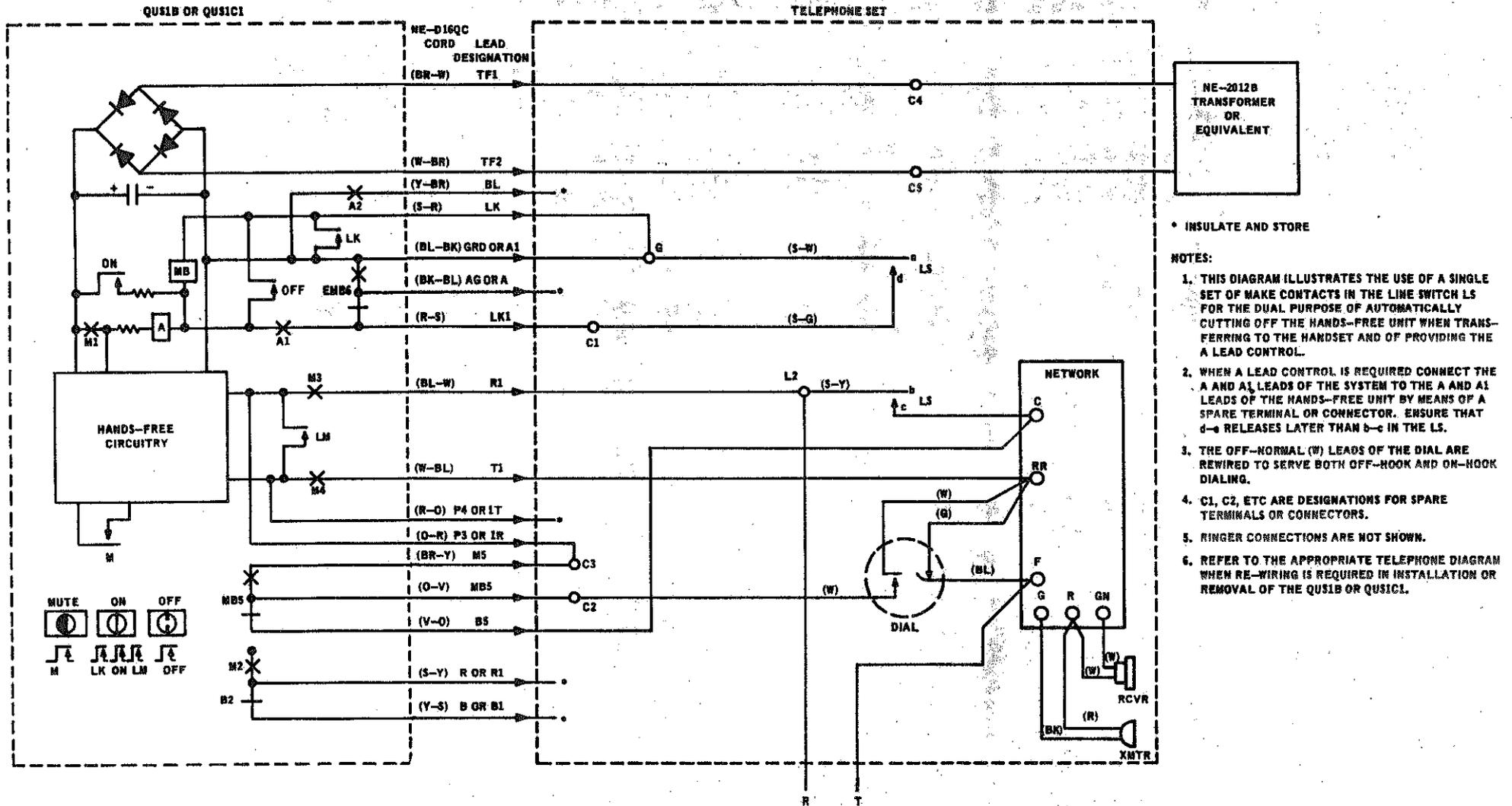


Fig. 7 - Connections to a Typical Single Line Rotary Dial Telephone Set

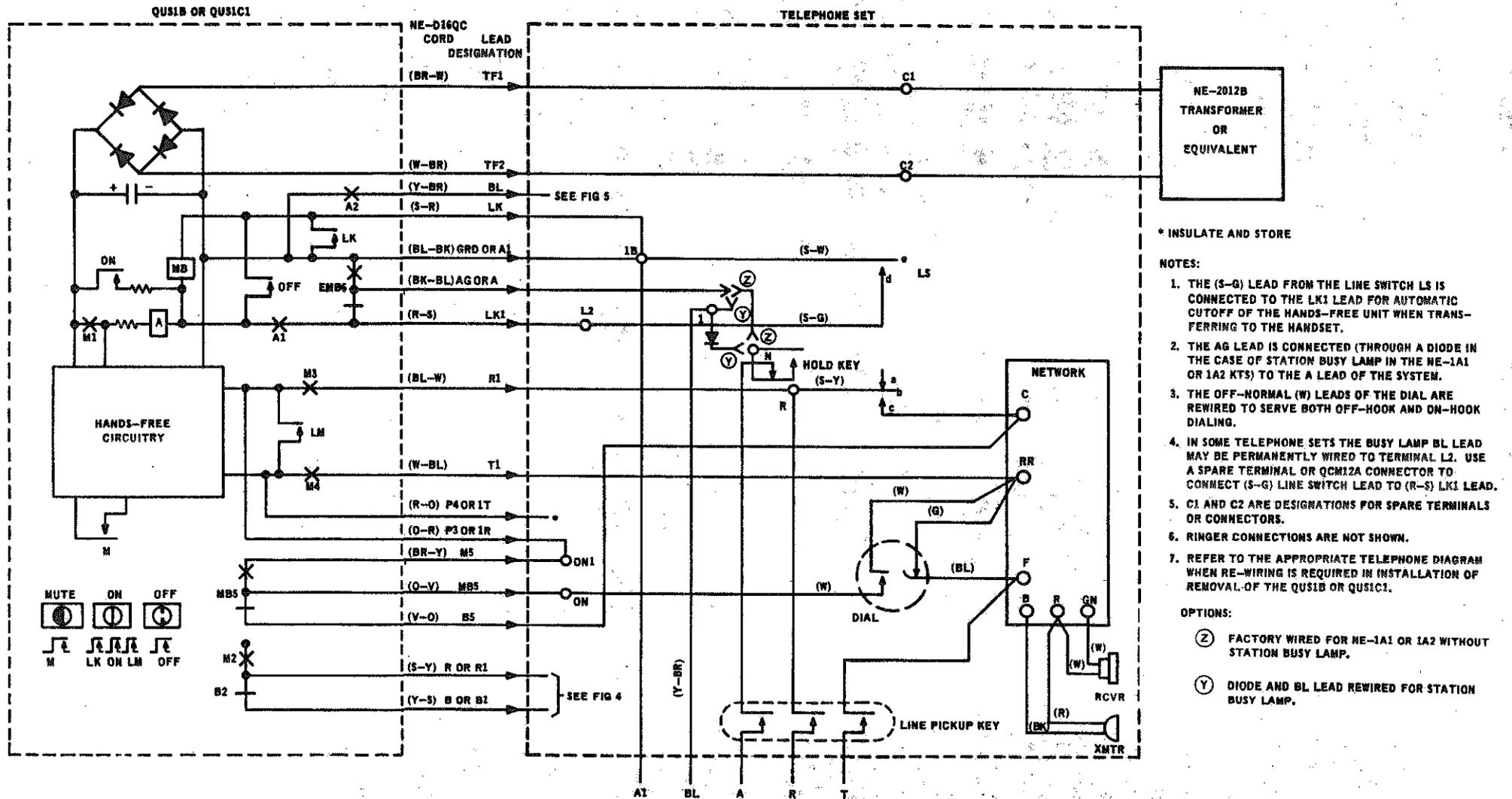
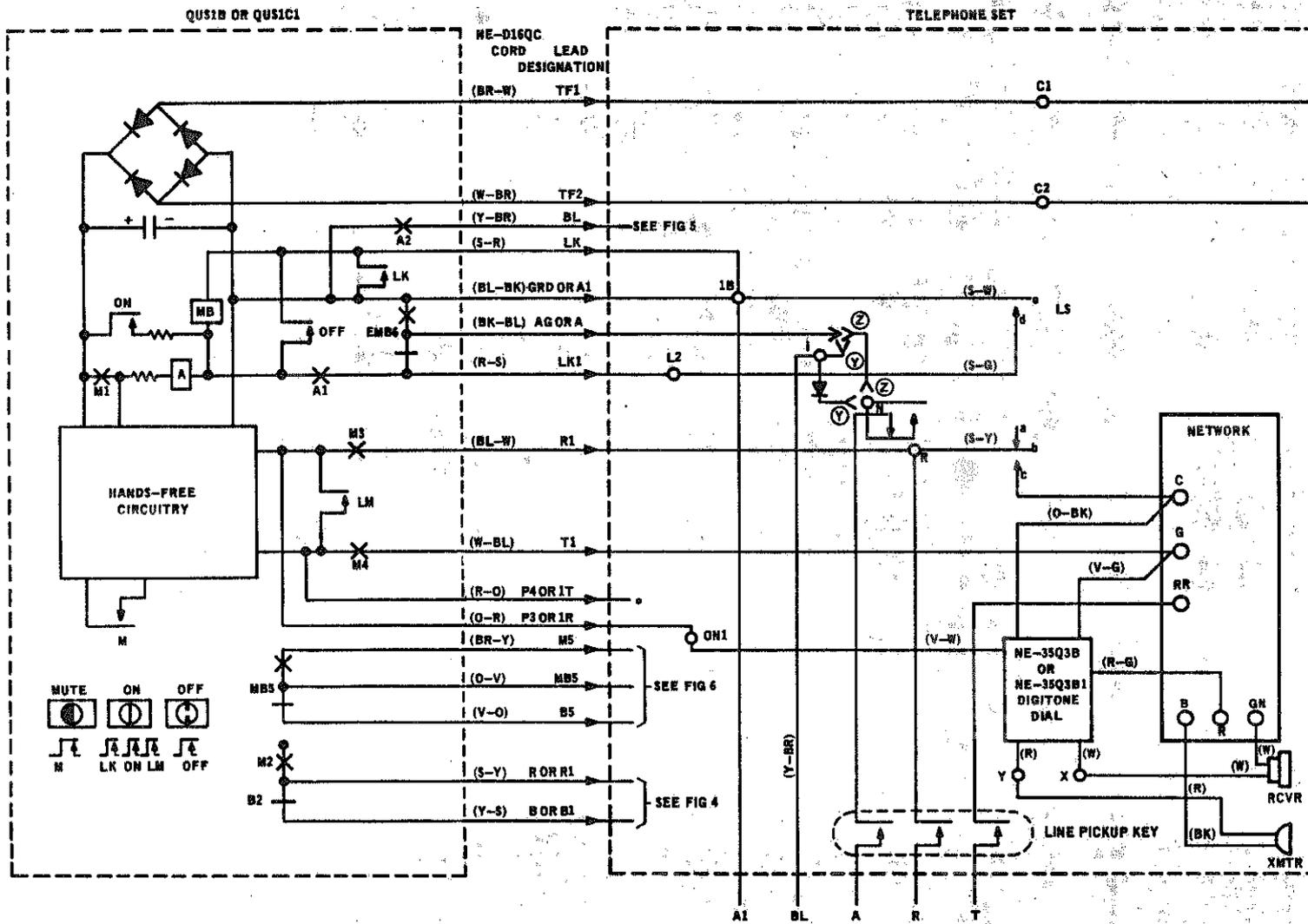


Fig. 8 - Connections to a Typical Rotary Dial Key Telephone Set



NE-2012B
TRANSFORMER
OR
EQUIVALENT

INSULATE AND STORE

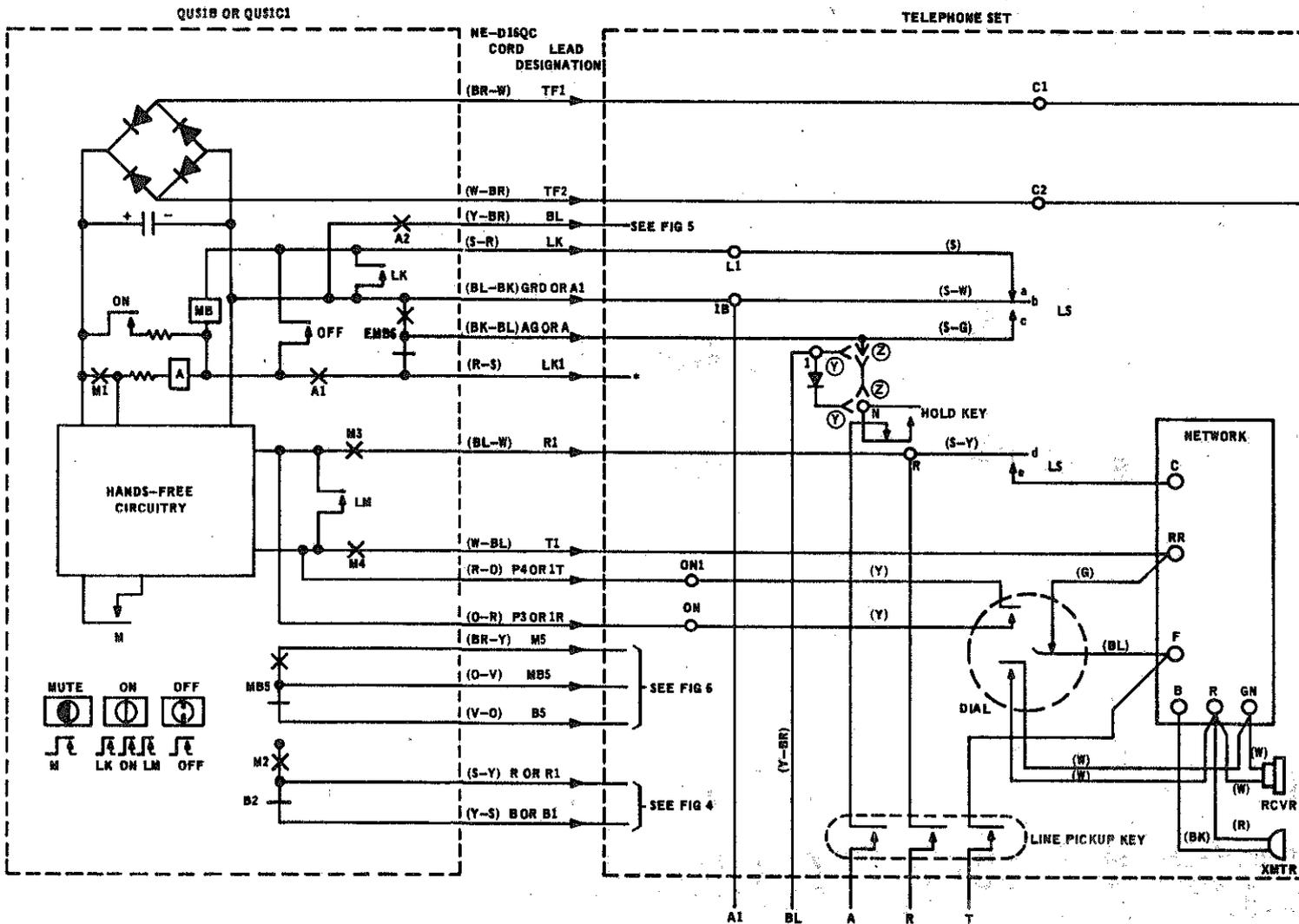
NOTES:

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 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 QCM12A 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 OR REMOVAL OF THE QUS1B OR QUS1C1.

OPTIONS:

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

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



NE-2012B
TRANSFORMER
OR
EQUIVALENT

INSULATE AND STORE

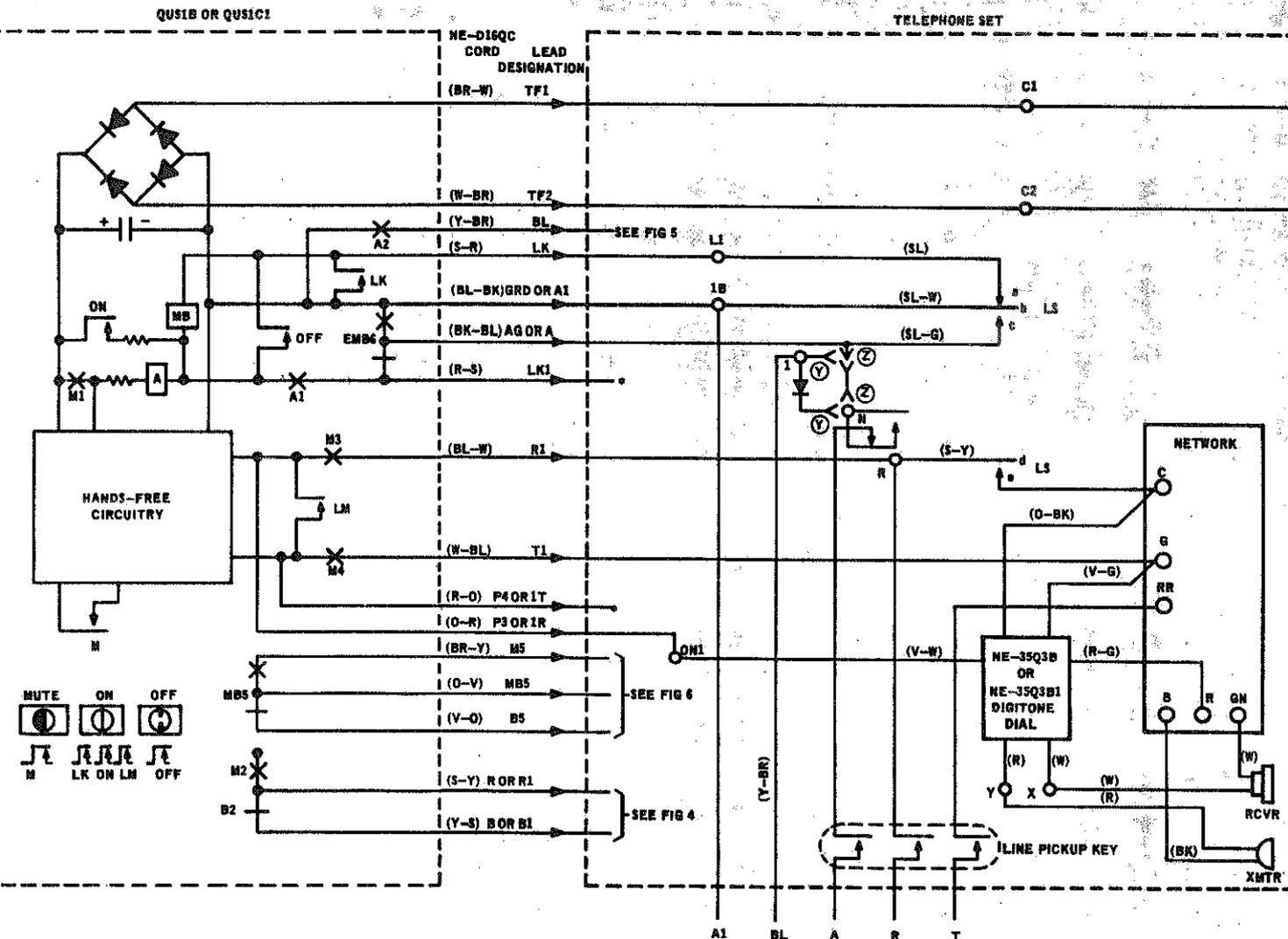
NOTES:

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 REWIRED 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



NE-2012B
TRANSFORMER
OR
EQUIVALENT

* 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.

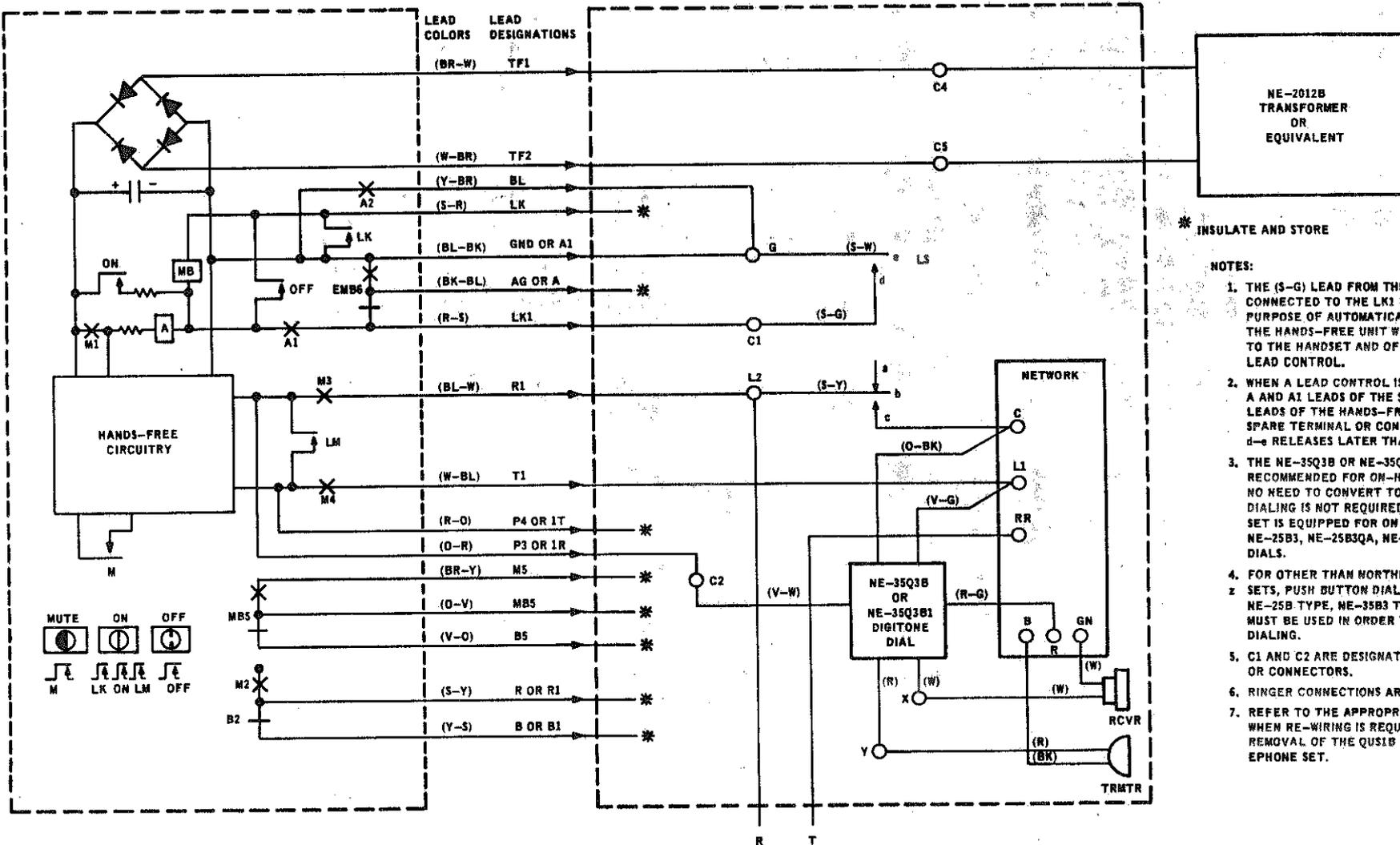
OPTIONS:

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

Fig. 11 - Connections to a DIGITONE Dial Key Telephone Set Equipped With 1 Set of Transfer Contacts and an NE-25B3, NE-35B3 or Equivalent Dial

QUS1B OR QUS1C1

TELEPHONE SET



* 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-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. FOR OTHER THAN NORTHERN ELECTRIC TELEPHONE z 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 QUS1B OR QUS1C1 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-1AC		
	ITEM	LEAD COLORS	LEAD DESIGNATION	SET TERMINALS	NETWORK TERMINALS	NE-D6QB LEAD COLOR	SET TERMINALS	NETWORK TERMINALS	NE-D6QB LEAD COLOR
TELEPHONE SET CONVERSIONS	Line switch leads	(S) (S-Y) (S-BR)		G	L3 G1		G	L3 G1	
	External connection with NE-D6QB mounting cord	(R) (G)	R T	X† L1	(or C)		X† L1	(or C)	
		(Y) (BK)	A1 A	G *(or Y)			G Y		
		(W) (BL)	LK1	*	G1		*	G1	
QUSIB AND QUSICI UNITS NE-D16QC CORD	CO or PBX Telephone line	(BL-W) (W-BL)	R1** T1	X† L1	(or C)	(R) (G)	X† L1	(or C)	(R) (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 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	G G *	G1	(Y) (W) (Y)	G G Y	G1	(Y) (W) (Y) (BK)
	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	See Fig. 6			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		

† 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 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	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				1-LINE PICKUP 2-LINE PICKUP			
TELEPHONE SET CONVERSIONS	ITEM	LEAD COLORS	LEAD DESIGNATION	NETWORK TERMINAL	NE-D6AB LEAD COLOR	NETWORK TERMINAL	NE-D6AB LEAD COLOR	SET TERMINAL	NETWORK TERMINAL	LEAD COLORS	
										NE-D14H	NE-D14L
	External connection	—	—	Connection to an external connecting block with an NE-D6AB mounting cord is recommended. † See Fig. 3b.				Connection to an external connecting block with an NE-D14H or D14L mounting cord is recommended. † See Fig. 3b.			
QUS1B AND QUS1C1 UNITS NE-D16QC CORD	CO or PBX telephone line	(BL-W) (W-BL)	R1 T1	F L1	R G	G L1	R G		L2 RR	O-R O-G	G-V V-G
	Power supply leads	(BR-W) (W-BR)	TF1 TF2	Connect to output leads from NE-2012B transformer (or equivalent) using spare terminals or QCM 12A 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	D * 3 C1	W Y BL	A * 3 S	BL W Y	10 * 7 9		O-BK W O	S-V WS V-S
	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	See Fig. 6		See Fig. 6		See Fig. 6			
	External station busy lamp or relay control	(Y-BR)	BL	See Fig. 5		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		See Fig. 4			

† 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** REWired FOR A LEAD CONTROL	NE-500L/M NE-500LR (nondial)	NE-500R S NE-500RR (nondial)			
KEY TELEPHONE SYSTEMS				NE-1A1, NE-1A2 INDIVIDUAL OR BRIDGED CO OR PBX LINE					
	ITEM	LEAD COLORS	LEAD DESIGNATION	SET TERMINALS	NETWORK TERMINALS	SET TERMINALS	NETWORK TERMINALS	SET TERMINALS	NETWORK TERMINALS
TELEPHONE SET CONVERSIONS	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		
QUSIB AND QUSICI UNITS NE-D16QC CORD	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		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		See Fig. 4	
	<p>* 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.</p>								

TABLE E
NE-1500, 1554, 2500, 2554 TYPE
TELEPHONE SETS

TELEPHONE SETS				NE-1500D, NE-1500DQ1A NE-2500D, NE-2500DQ1A	NE-1500DQ1A, NE-2500DQ1A NE-2500D, NE-2500D NE-1554B, NE-2554B	NE-1500S	NE-2500S	NE-2500SQA					
				REWired FOR A LEAD CONTROL WITH ON-HOOK DIALING	REWired FOR A LEAD CONTROL WITHOUT ON-HOOK DIALING								
KEY TELEPHONE SYSTEMS				INDIVIDUAL OR BRIDGED CO OR PBX LINE NE-1A1, NE-1A2									
	ITEM	LEAD COLORS	LEAD DESIGNATIONS	SET TERMINALS	NETWORK TERMINALS	SET TERMINALS	NETWORK TERMINALS	SET TERMINALS	NETWORK TERMINALS	SET TERMINALS	NETWORK TERMINALS	SET TERMINALS	NETWORK TERMINALS
TELEPHONE SET CONVERSIONS	Line switch leads	(S-W) (S-G)		C1†	G	C1	G						
	CO or PBX Telephone line	(R) (G)	R T		L2 RR		L2 RR	7 8		2 1		E2	RR
	NE-35Q3B or NE-35Q3B1 DIGITONE dial for on-hook dialing	(O-BK) (V-W) (V-G) (R) (R-G) (W)		C2 C3	C Y R X								
QUSIB AND QUSICI UNITS NE-D16QC CORD	CO or PBX telephone line	(BL-W) (W-BL)	R1 T1	C3	L2		L2 RR	7 5		2	L2	E2 5	
	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	C1	G G L1	C1	G G L1	2 3 4†		E1 3 4†		4 3 E1‡	
	On-hook dialing (when using NE-35Q3B or equiva- lent dial)	(O-R) (R-O)	P3 or IR P4 or IT	C2 *				6 9		6 E2		6 2	
	Auxiliary transfer con- tacts for optional control	(V-O) (O-V) (BR-Y)	B5 MB5 M5	See Fig. 6		See Fig. 6		See Fig. 6		See Fig. 6		See Fig. 6	
	External station busy lamp or relay control	(Y-BR)	BL	See Fig. 5		See Fig. 5		See Fig. 5		See Fig. 5		See Fig. 5	
	Common signal cutoff or bridged ringer cutoff	(S-Y)	R or R1	See Fig. 4		See Fig. 4		See Fig. 4		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. ‡ Insulate if not used for A lead control													

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

TELEPHONE SETS				NE-630, NE-631, NE-634, NE-635								NE-1630, NE-1631, NE-1634, NE-1635 NE-2630, NE-2631, NE-2634, NE-2635								
KEY TELEPHONE SYSTEMS				NE-1A				NE-1A1, NE-1A2				NE-1A				NE-1A1, NE-1A2				
STATION BUSY LAMP CIRCUIT				NO		YES		NO		YES		NO		YES		NO		YES		
TELEPHONE SET CONVERSIONS	ITEM	LEAD COLORS	LEAD DESIGNATIONS	TERMINALS		TERMINALS		TERMINALS		TERMINALS		TERMINALS		TERMINALS		TERMINALS		TERMINALS		
				KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY
				Use X wiring as described in BSP 502-630-401CA or NEP 2013Q-201				Use Z wiring		Use X and Y wiring		Use X wiring		Use Z wiring		Use X and Y wiring				
QUSIB AND QUSICI UNITS NE-D16QC CORD	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	9	*	9	*	9	*	9	*	9
	On-hook dialing	(O-R) (R-O)	P3 or IR P4 or IT	W	BB	W	BB	W	BB	W	BB	11	12	11	12	11	12	11	12	
	Auxiliary transfer contacts for optional control	(V-O) (O-V) (BR-Y)	B5 MBS M5	See Fig. 6								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																			

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							
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 NSQ8034L1 (IN4384) for station busy lamp circuit																			
CO or PBX telephone line	(BL-W) (W-BL)	R1 T1		L2 RR		L2 RR		L2 RR		L2 RR		L1 G		L2 G	L2		RR		
Power supply leads	(BR-W) (W-BR)	TF1 TF2	Connect to output leads from NE-2012B (transformer (or equivalent)) using spare terminals or QCM 12A connectors.																
Automatic cutoff of unit when transferring of handset and key telephone system A lead control	(S-R) (R-S) (BL-BK) (BK-BL)	LK LK1 GND or A1 AG or A	10 * 7 9		10 * 7 9		10 * 12 9		10 * 12 9		11 * 7 9		11 * 7 9		11 * 7 10				
On-hook dialing	(O-R) (R-O)	P3 or IR P4 or IT	11	G	11	G	*	*	*	*	12 10		12 10		*	*			
Auxiliary transfer contacts for optional control	(V-O) (O-Y) (BR-Y)	B5 MBS MS	See Fig. 6								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.
† 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

TELEPHONE SETS				NE-2564HQE,F, NE-2565HQE,F								NE-2565LQF								NE-1565HKQ1A, NE-1565HKQ1B							
KEY TELEPHONE SYSTEMS				NE-1A				NE-1A1, NE-1A2				NE-1A				NE-1A1, NE-1A2				NE-1A				NE-1A1, NE-1A2			
STATION BUSY LAMP CIRCUIT				NO		YES		NO		YES		NO		YES		NO		YES		NO		YES		NO		YES	
ITEM	LEAD COLORS	LEAD DESIGNATIONS	TERMINALS		TERMINALS		TERMINALS		TERMINALS		TERMINALS		TERMINALS		TERMINALS		TERMINALS		TERMINALS		TERMINALS		TERMINALS		TERMINALS		
			KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	
Line switch leads	(S-W) (S-G) (S-Y)		1B N	L2**	SG N	L2**	1B R	L2**	1B R	L2**	1B N		SG N	L2	1B N		1B R	L2	1B N		SG N		1B N		1B R		
Hold key leads	(Y) (O-BK)		R M		R M		M N		M N		R M		R M		M N		M N		R M		R M		M N		M N		
NE-35Q3B or NE-35Q3B1 DIGITONE dial for on-hook dialing	(O-BK) (V-W) (V-G) (R-C) (W)		ON1	C G Y R X	ON1	C G Y R X	ON1	C G Y R X	ON1	C G Y R X																	
Diode assembly P0522718 or diode NSQ8034L1 (IN4334) for station busy lamp circuit	NE-M1W Cord																										
CO or PBX telephone line	(BL-W) (W-BL)	R1 T1	N	G	N	G	R	G	R	G	N	G	N	G	R	G	R	G	N	G	N	G	R	G	R	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	1B 1B	L2	SG SG	L2	1B 1B	L2	1B 1B	L2	*	L1	*	L1	*	L1	*	L1	*	L1	*	L1	*	L1	*	L1	
On-hook dialing (when using NE-35Q3B or equivalent dial)	(O-R) (R-O)	P3 or IR P4 or IT	ON1	*	ON1	*	ON1	*	ON1	*	ON	ON1	ON	ON1	ON	ON1	ON	ON1	ON	ON1	ON	ON1	ON	ON1	ON	ON1	
Auxiliary transfer contacts for optional control	(V-O) (O-V) (BR-Y)	B5 MB5 M5	See Fig. 6								See Fig. 6								See Fig. 6								
External station busy lamp or relay control	(Y-BR)	BL	See Fig. 5								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								See Fig. 4								

* Insulate and store.
 † An NE-35Q3B dial (or equivalent) must be installed on NE-2564HQE, F telephone 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-1565HKQ1A, for the NE-1565HKQ1B use terminals ON1 and ON.

TABLE I
NE-544, 545, 564, 565 TYPE
TELEPHONE SETS

TELEPHONE SET	TELEPHONE SYSTEMS												NE-544, NE-545, NE-564, NE-565											
	NE-6410AA, B, C, DA, EA, FA, GA, JA, NI-565HQAA, BA, CA, DA, EA, FA, GA, JA				NE-544RQ, IDPR, IDN				NE-544B, NE-545B, NE-564RBRN, NE-565RBRN, LQF, IDPR, LBRN, IDP, LDRN				NE-544, NE-545, NE-564, NE-565											
	NE-7A		NE-1A1, NE-1A2		NE-1A1, NE-1A2		NE-1A		NE-1A		NE-1A1, NE-1A2		NE-1A		NE-1A1, NE-1A2		NE-1A1, NE-1A2							
ITEM	LEAD COLORES	LEAD DISPOSITIONS	TERMINALS	NO	YES	TERMINALS	NO	YES	TERMINALS	NO	YES	TERMINALS	NO	YES	TERMINALS	NO	YES							
			KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK	KEY	NETWORK						
Line switch leads	(S-W) (S-C) (S-T)		IB	L2**	R	L2**	IB	L1	R	L1	IB	L1	R	L1	IB	L1	R	L1						
Hold key leads	(V)		R	M	N	M	R	M	N	M	R	M	N	M	R	M	N	M						
Dial leads	(W)		OK	RR	ON	RR	ON	RR	ON	RR	ON	RR	ON	RR	ON	RR	ON	RR						
Disc Assembly POC 22718 or disc NS6094E1 (IN 4184) for station busy lamp circuit																								
CO or PBX telephone line	(BL-W) (W-BL)		R	RR	R	RR	R	RR	R	RR	R	RR	R	RR	R	RR	R	RR						
Power supply leads	(BR-W) (W-BR)		TI																					
Automatic cutoff of all when transferring to handset and key telephone system A lead control	(S-R) (R-S) (BL-BK) (BK-BL) (O-R) (R-O) (O-V) (V-O) (BR-T) (T-BR)		IB	L2	IB	L2	IB	L1	IB	L1	IB	L1	IB	L1	IB	L1	IB	L1						
One-hook dialing			ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON	ON						
External station busy lamp or relay control	(V-BR)		BL																					
Common signal cutoff or relay control	(S-Y) (Y-S)		R	RR	R	RR	R	RR	R	RR	R	RR	R	RR	R	RR	R	RR						

Connect to output leads from NE-2012B transformer (or equivalent) using spare terminals or QCN12A connector.

* Inhibit and store.
** Common to telephone sets lead is (V-BL)
*** In one telephone set the busy lamp lead may be factory wired to connect the (S-C) line which lead to the LK1 (R-S) lead.