TELEPHONE SETS 402-, 410-, AND 411-TYPE DESCRIPTION, USE. AND CONNECTIONS

1. GENERAL

101 This section covers the description, use, and connections of the 402-, 410-, and 411-type telephone sets for key equipments and station wiring plans.

1.02 This section is reissued to convert it to letter size and to incorporate material from the addendum in its proper location. In the process of this conversion, marginal arrows have been omitted.

1.03 These sets are also used for key telephone systems, therefore, pertinent wiring changes for system use are contained in the schematic drawings and tables associated with key telephone systems.

2. DESCRIPTION AND USE

2.01 The 402-Type Telephone Sets are of the combined desk type and are equipped with an exclusion key. This consists of a switch operated by pulling up the right-hand plunger after the hand set is removed. While the switch is operated, its contacts serve to exclude one or more extension stations. When the handset is replaced on its mounting, the switch is automatically restored to normal.

2.02 The principal components of the 402-type sets are the B1AL ringer, the 195A condenser, the F1A or F1G handset, the 101A induction coil, the 5HB or 6A dial or the 82A-3 apparatus blank for manual service.

2.03 **The 410- and 411-Type Telephone Sets** are of the combined set type and are, as shown in Fig. 1, equipped with a combined turn and push button key located in the telephone set housing just below and to the left of the dial. The key has a line engraved in its top to indicate the position of the key. The key is furnished with two sets of transfer contacts operated by turning the button and a set of make contacts operated by pushing it downward. Station number card masks (described in Section C37.321) which are arranged to fit over the regular number cards are available to indicate the various turn button functions of the key. The 411-type telephone sets in addition to the combination turn and push button are equipped with an exclusion key which operates in the same manner as the exclusion key of the 402-type sets.

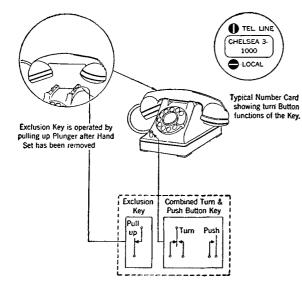


Fig. 1

2.04 The principal components of the 410- and 411-type sets are the B1A ringer, the 195B condenser, the F1A or F1G handset, the 101A induction coil, the 5HB or 6A dial or the 82A-3 apparatus blank for manual service.

2.05 Table 1 shows the features provided and the corresponding codes of the 410- and 411-type telephone sets and cords.

TABLE. 1
Feature Combinations Provided and Corresponding Code
of Telephone Sets and Cords
Combined Turn and Push Button Sets

TELE	PHONE	SET	Γ			FEA	TURE	S		
	CODES								t Off by	Key
MANUAL (See Note I)	DIAL	MOUNTING CORD	Number of Lines Picked Up	Signalling Circuit	Line Ringer (See Note 2)	Common Ringer	Exclusion	Ringer in Set*	Extension Station, External Ringer or Headset Control	Extension Station Ringer Transfer
			1	1	1			1		
410AA	410AC	D4AH	1		/			<u> </u>		1
			1		/		l		/	
<u> </u>			2	·	1		<u> </u>			
'	4IIAC	D6P	1	J	J		1	J		
411AA			1		1		1		ļ <u></u>	_/_
			1		1		. /		1	
			2		✓		/_		<u> </u>	
				✓	1					/
410BA	410BC	D6P	1	1	1				/	
			2	1	1					
			2			√				
				1	V		1			_/
411BA	411BC	D8M	1	1	1		1		J	
	41100	30	2	/_	_/_		1			
			2			1	1			
410CA		D8M	2	√		1				
411CA	411CC	D10C	2	_/_	<u> </u>	✓	/			

Note 1 - Diat is replaced with apparatus blank.

Note2— The connections provide for ringing on line t. If ringing on line 2 is required, connect the red ringer lead and the yellow condenser lead to terminals 3 and 4 respectively.

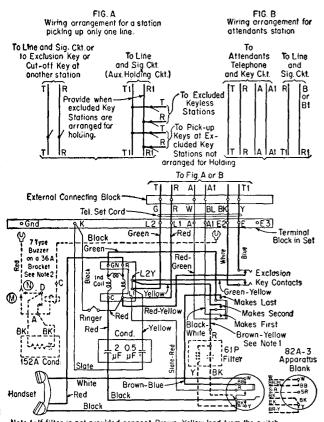
Note 3: When the suffix R is shown added to the code number of any telephone set shown in Table 1, it indicates that the telephone set is equipped with a retractile handset cord. For example: a 440AA-3 key telephone set equipped with a retractile handset cord becomes a 440AAR-3 key telephone set. Sets ordered with the suffix R will be equipped with retractile handset cords when received.

When only feature desired is to silence ringer in set a 305 type set should be used.

3. CONNECTION

402-Type Sets

3.01 Fig. 2 is a schematic drawing for the 402A (manual) and 402C (dial) telephone sets and Table 2 lists the features provided as well as the telephone set connections for those features.



Note 1: If filter is not provided connect Brown-Yellow lead from the switch contacts to Y of dial instead of to Filter Bracket Terminal.

Note 2: Use (M) wiring for AC supply and (N) wiring for DC supply when a 7-Type Buzzer is substituted for the ringer as a common or private fine audible signal

Fig. 2-402-Type Telephone Set

410- and 411-Type Sets

3.02 Fig. 3 is a schematic drawing for the 410- and 411-type telephone sets. Tables 3, 4, 5, and 6 following Fig. 3 lists the telephone set connections required for the features listed in Table 1.

TABLE 2

	Connections To Terminals Inside Set														
FEATURES		untir	ng (ord	Colo	rs	Corđ Code	Ringer Leads		Cond- enser Leads		Exclusion Key Leads			
		G	Y	ВК	BL	W	D6P	R	ВК	Y	S	BL	W	R-Y	G-Y
One Line Pickup Ringer in Set. Exclusion	LI	L2	ε	ES	ΑI	Α		LI	ĸ	* L2	к	ε	E2	L 1	L2
One Line Pickup, Ringer of Extension Station Exclusion	LI	L 2	Ε	E2	ΑI	Α		Gnd	к	L2	К	Ε	E2	L1	L2
One Line Pickup, Common or Private Line Ringer Ringer in Set Cut-Off by Exclusion Key	LI	L2	Ε	E2	Α1	Δ		Gnd	E 2	K	к	E	E3	(nd)	E3

Circle indicates connections that must be changed in set as furnished

Indicates terminals on Induction Coll, Other terminals in table are on Connecting Block

> TABLE 3 410A, B and C Telephone Sets

Connections To Terminals Inside Set													
FEATURES		Mou				Cord	Ringer and						
410 A-Type Set	R	G	Y	ВК		Ţ	Π		D4AH	R	Y	S	
One Line Pickup and Signaling Ringer Cut-Off (Ringer in Set)	LI	L2Y	(§	6		Г	Г			3	(4)	к	
One Line Pickop Extension Cut-Off with Ringer Transfer	L1	L2Y	3	4		Γ				0	2	ĸ	
One Line Pickup Extension Cut-Off, or Ringer Cut-Off (External Ringer), or Head Set Control	LI	L2Y	3	4						LI	L2Y	к	
Two Line Pickup	0	0	3	4			1			0	(2)°	ĸ	
410 B-Type Set	R	G	Y	ВК	BL,	₩	Г	Т	D6P	R	Y	s	
One Lime Pickup and Signoling Extension Cut-Off with Ringer Transfer	LI	L2Y	3	4	s	Gnd				0	@	K	
One Line Pickup and Signaling Extension Cut-Off or Ringer Cut-Off (External Ringer), or Head Set Control	LI	L2Y	3	4	s	Gnd				LI		к	
Two Line Pickup and Signaling	Θ	(2)	3	4	s	Gnd	Г			\bigcirc	2	ĸ	
Two Line Pickup with Common Ringer	0	②	3	4	(A)	(K)				(4)	L2Y	(7)	
410 C Type Set	R	G	γ	вк	BL.	w	R-R	G-G	D8M	R	Υ	\$	
Two Line Pickup and Signaling with Common Ringer	•	2	3	4	\$	Gnd	Α	ĸ		Α	L2Y	(Z)	

Circle indicates connections that must be changed in set as furnished

The connections shown provide for ringing on Line 1. If ringing on Line 2 is required, connect the red ringer Lead gold the yellow condenser Lead to terminots 3 and 4 respectively.

Indicates ferminals on Induction Coll. Other ferminals in table are on Connecting Block.

Connection	ns of S-R (Condenser Lead	
	No of Lines Picked Up	Buzzer or Set Ringer Used for	Connect S-R Cond Lead to Term Block Pchg.
Sets Mfr. up to	1	Common Sig or Line Ringer	L1
No Dot Beside		Common Sig	LI
Date	2	Line Ringer	1 or 3 having Red Ringer Lead
Sets Dated 4-1-41 with	1	Common Sig or Line Ringer	•
Dot Beside Date		Common Sig	i i
and Dated Later without Dat	2	Line Ringer	1 or 3 having Red Ringer Lead

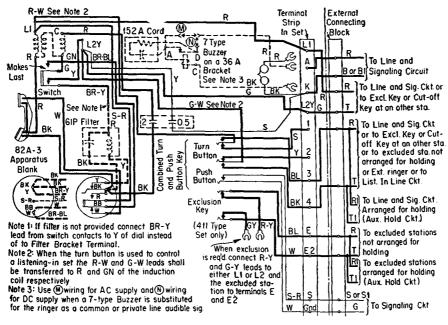


Fig. 3-410- and 411-Type Telephone Set

TABLE 4

410	A, B, a	nd C								
FEATURES	1		Mtg C	ord	Conns.1	io Ext	ernal (Conn.	Block	
PEATURES	To Line 1		To Line 2		To Cut-off Ext. Stas. or Ringers		To Signaling		Comi Ringer	mon
410A-Type Set	Ring	Tip	Ring	Tip	Ring	Tip	Buzz.	Gnd	R-Leod	B-Lead
One Line Pickup and Signaling Ringer Cut-Off (Ringer in Set)	R	G	_		1	1	Υ	вк		
One Line Pickup Extension Cut-Off with Ringer Transfer	R	G	_	-	Y	вк	_	_		
One Line Pickup Extension Cut-Off,or Ringer Cut-Off (External Ringer), or Head Set Control	R	G	_	_	Y	вк	_	_		
Two Line Pickup	R	G	Y	вк		<u> </u>	<u> </u>			
410 B-Type Set										
One Line Pickup and Signaling Extension Cut-Off with Ringer Transfer	R	G	_	_	Y	вк	BL	w		
One Line Pickup and Signaling Extension Cut-Off or Ringer Cut-Off (External Ringer), or Head Set Control	R	G	_	-	Υ	ВК	BL	w		
Two Line Pickup and Signaling	R	G	Y	BK		_	BL	W		ļ
Two Line Pickup with Common Ringer	R	G	Y	₿K				_	BL	W
410C-Type Set										
Two Line Pickup and Signaling with Common Singer	R	G	Y	вк			BL	*	R-R	G-G

TABLE 5

	HIIA	, B and	5 C	1616	pno	ne :	5612							
FEATURES	L			C٥	nnec	tion	s To	Te	rmin	als Ins	ide Sel			
(All 411-Type Sets are Equipped for Exclusion)			Мо	untli	ng C	ord	Col	019			Cord Codes	Ringer and Condenser Connections		
411A-Type Set	R	G	Y	вк	BL	W					D6P	R	Y	S
One Line Pickup and Signaling Ringer Cut-Off (Ringer in Set)	LI	L2Y	<u>(S</u>	6	ε	Е2						3	4	к
One Line Pickup Extension Cut-Off with Ringer Transfer	LI	L2Y	3	4	E	E 2						0	2	к
One Line Pickup Extension Cut-Off, or Ringer Cut-Off (External Ringer), or Head Set Control	LI	L2Y	3	4	E	E 2						L1	LZY	к
Two Line Pickup	\odot	②	3	4	Ε	E2						0	@	К
411B-Type Set	R	G	Y	BK	BL	₩	R∙R	G-G			D8M	R	Y	S
One Line Pickup and Signaling Extension Cut-Olf with Ringer Transfer	LI	LSA	3	4	s	Gnd	Ε	€2				0	2	ĸ
One Line Pickup and Signaling Extension Cut-Off or Ringer Cut-Off (External Ringer), or Head Set Control	L1	L2Y	3	4	S	Gnd	Ε	E 2				LI	L2Y	ĸ
Two Line Pickup and Signaling	0	@	3	4	S	Gnd	ε	E 2	_			\odot	<u> </u>	ĸ
Two Line Pickup with Common Ringer	\odot	@	3	4	(A)	<u>(k)</u>	E	ΕZ				(L2Y	(B)
411 C Type Set	R	G	Y	ВК	BL	w	R-R	G-G	Y-Y	BK-BK	DIOC	R	Y	S
Two Line Pickup and Signaling with Common Ringer	•	2	3	4	s	Gnd	e	E 2	A	к		Δ	LZY	(3)

Circle indicates connections that must be changed in set as furnished

The connections shown provide for ringing on Line 1 if ringing on Line 2 is required, connect the red ringer Lead and the yellow condenser Lead to terminals 3 and 4 respectively.

Indicates terminals an Induction Coll. Other Iterminals in table are on Connecting Block.

Connections of S-R Condenser Lead

Ī		Na of Lines Picked Up	Buzzer or Set Ringer Used for	Connect S-R Cond Lead to Term Block Pchg		
ľ	Sets Mfr. up to	1	Common Sig . or Line Ringer	Lf		
1	No Dot Beside		Common Sig	LI		
	Date	2	Line Ringer	1 or 3 having Red Ringer Lead		
l	Sets Dated 4-1-41 with	1	Common Sig. or Line Ringer	1		
ı	Dot Beside Date		Common Sig	1		
l	and Dated Later without Dat	2	Line Ringer	For 3 having Red Ringer Lead		

TABLE 6
411 A, B, and C Telephone Sets

FEATURES	Mtg Cord Conns. To External Conn. Block													
(All 411-Type Sets are Equipped for Exclusion)		To Line 1		To Line 2		To Excluded Stations				oling uit	To Common Ringer Rela			
411 A-Type Set	Ring	Tip	Ring	Tip	Ring	Tip	Ring	Tip	Buzz	Gnd	R-Cead	B-Lege		
One Line Pickup and Signaling Ringer Cut-Off (Ringer in Set)	R	e	_	_	BL	W	_	-	Y	ВК				
One Line Pickup Extension Cut-Off with Ringer Transfer	R	G	_	-	BL	w	Y	вк	-	-				
One Line Pickup Extension Cut-Off,or Ringer Cut-Off (External Ringer), or Head Set Control	R	G	_	_	BL	w	Y	ВК	_	_				
Two Line Pickup	R	G	Y	вк	BL	₩	_	_	_					
411 B-Type Set	_	-	_	_		740	•							
One Line Pickup and Signaling Extension Cut-Off with Ringer Transfer	R	G	-	_	R-R	G-G	Υ	ВК	BL	w				
One Line Pickup and Signaling Extension Cut-Off or Ringer Cut-Off (External Ringer),or Head Set Control	R	G	_	-	R-R	G-G	Υ	вк	BL	w				
Two Line Pickup and Signaling	R	G	Y	BK	R-R	G-G	_	_	BL	*				
Two Line Pickup with Common Ringer	R	G	Y	ВК	R-R	G-G	_	_	1_	1=	BL	w		
411C-Type Set								-			-			
Two Line Pickup and Signaling with Common Ringer	R	G	٧	Вк	R-R	G-G		-	BL	w	Y-Y	BK-BK		