

## REFERENCE

### 701B AND 702B TELEPHONE SETS

#### 1. GENERAL

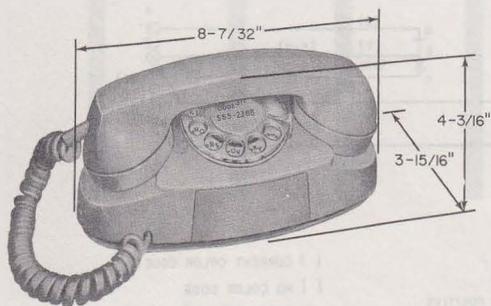
**1.01** This section provides identification, installation, maintenance, and connection information for 701B (MD) and 702B telephone sets.

**1.02** This section is reissued to:

- Show D4BT mounting cord replacement for D5AK mounting cord, Fig. 17
- Add 10A extender, Fig. 19
- Revise Tables F, G, and I

#### 2. IDENTIFICATION

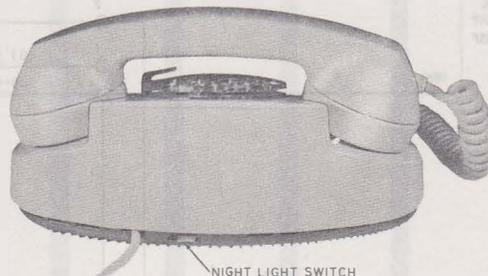
**2.01** These sets are equipped with a concealed lamp which illuminates the dial when the handset is removed. This lamp also serves as a night light under control of a slide switch located in the base at rear of set (Fig. 2).



**Fig. 1—700-Type Telephone Set**

**2.02** Table A lists the major components of 701B and 702B PRINCESS® telephone sets.

**2.03** These sets are available in promoted telephone colors.



**Fig. 2—700-Type Telephone Set, Rear View**

**2.04** The 701B telephone set is not equipped with an internal ringer. When a ringer is required, an E1- or F1-type external ringer may be used. With either ringer, individual line, or 2-party flat rate service is available. Internal wiring changes must be made when other services are required.

**2.05** 701B telephone sets may be used with the following services:

- 4-party selective and 8-party semiselective service
- 1A1 and 1A2 key telephone systems

**2.06** The 702B telephone sets (Fig. 3) are similar to the 701B which it replaces, except that an internal ringer (M1A) is provided.

#### 3. INSTALLATION

**3.01** When possible, be guided by the customer's wishes in placing apparatus. Consider the following:

- Safety for yourself, customer, and maintenance personnel.
- Availability of power outlet for transformer.

TABLE A

## COMPONENTS AND FEATURES OF THE 701B AND 702B TELEPHONE SETS

TYPE SET	HOUSING	MOUNTING CORD	NETWORK	INTERNAL RINGING	3-TYPE SPEAKER-PHONE	USED WITH 1A, 1A1, 1A2 KTS
701B(MD)	P-81M2*	D6AB	495A	No	No	Yes
702B	P-89A8*	D5AK or D4BT (Note 2)	4010B	Yes	Yes	Yes

\* The last two digits of housing part number must be replaced by the code number which corresponds to the color desired.

## Notes:

1. The following components are common to both the 701B and 702B PRINCESS telephone sets:

- Dial 8A
- Dial lamp, KS-19387 (GE259); order by KS number
- Dial lamp, socket, KS-19240L2
- Handset, G3-type
- Handset cord, H4CJ

◆ 2. D4BT mounting cord may be used to replace D5AK cord, refer to Table G and Fig. 17 for connections. ◆

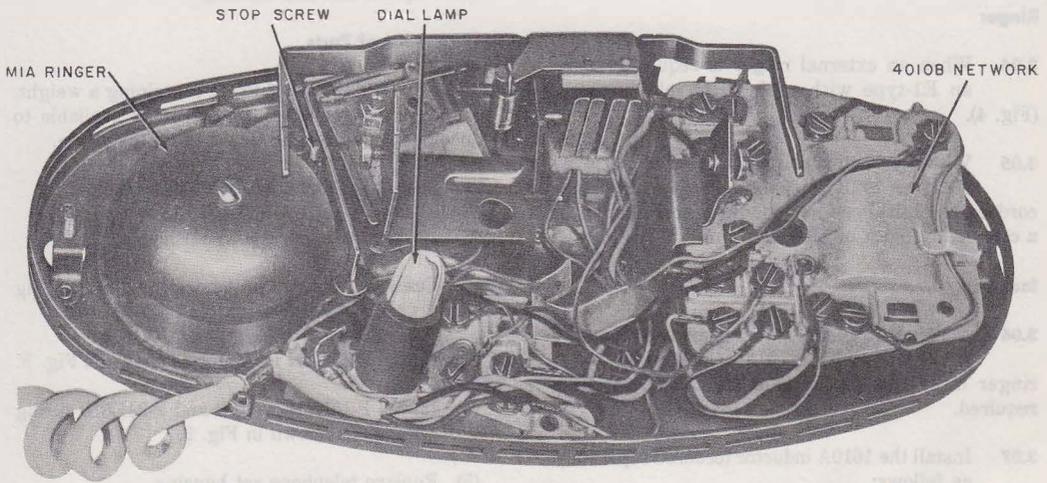


Fig. 3—702-Type Telephone Set, Dial and Housing Removed

- Location of telephone set so ringer volume is adequate for area.
- General appearance of installation.

### Dial Light Transformer

**3.02** Select a 105-120 volt AC receptacle on a circuit not controlled by a switch for dial lamp transformer. A 2A clamp is available to secure the 2012A transformer to the service outlet. Current production transformers have folded-blade prongs and the 2A clamp is not required. For multiple dial lamp sets, refer to section covering station transformers for selection information.

**3.03** For proper illumination of the dial, the length of the wire between the transformer and the telephone set should not exceed 250 feet of standard inside wire. *Do not use a 25-foot mounting cord because the added resistance may result in decreased illumination.*

### Ringer

**3.04** When an external ringer is required, install an E1-type with each 701B telephone set (Fig. 4).

**3.05** When no external ringer is used with the 701B or 702B telephone set, the mounting cord of the telephone set should be terminated on a connecting block or plug as required.

### Inductors

**3.06** A 1610A or 1635A inductor must be installed in the base of the 701B telephone set when ringer is not used and tip party identification is required.

**3.07** Install the 1610A inductor (ordered separately) as follows:

- (1) Remove housing from telephone set.
- (2) Loosen dial and mounting cord stay hook, lay aside.
- (3) Install inductor as shown in Fig. 5 and 6.
- (4) Insert wedge in position (Fig. 6).

(5) Connect inductor between terminals B of network and 3 of terminal board.

(6) Replace mounting cord stay hook, dial, and housing.

**3.08** Install the 1635A inductor (ordered separately) as follows:

- (1) Remove housing from telephone set.
- (2) Loosen dial and lay it aside.
- (3) Remove left screw from dial mounting bracket.
- (4) Install inductor as shown in Fig. 7.
- (5) Replace screw in dial mounting bracket.
- (6) Connect inductor between terminals B of network and 3 of terminal board.
- (7) Replace dial and housing.

### D-179924 Kit of Parts

**3.09** A D-179924 Kit of Parts containing a weight, spring retainer, and insulator is available to reduce sliding while dialing the 701B telephone.

**3.10** Install D-179924 Kit of Parts as follows:

- (1) Remove telephone set housing.
- (2) Dress all leads to prevent wiring from being caught between weight and base of set.
- (3) Install P-25E307 insulator as shown in Fig. 8.
- (4) Install P-15E719 weight and P-24E510 spring retainer as shown in Fig. 9.
- (5) Replace telephone set housing.

### Cold-Cathode Tube

**3.11** If 4-party selective or 8-party semiselective service is desired, a 425A or 426A cold-cathode tube may be ordered and installed in the base of 701B or 702B telephone sets as follows (Fig. 10):

- (1) Remove telephone set housing.

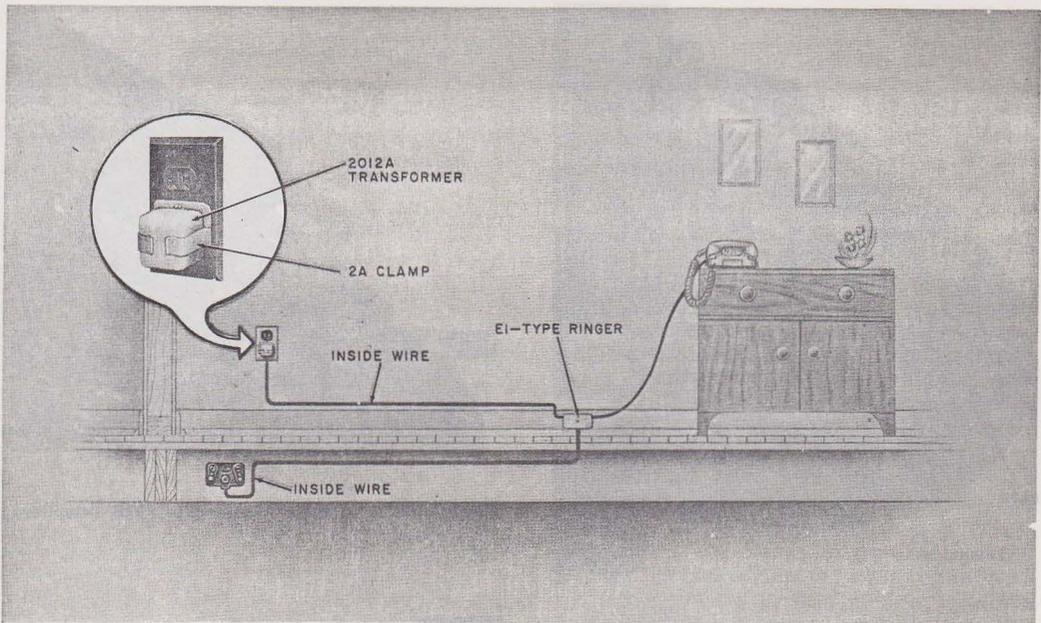


Fig. 4—Typical Installation of 701B Telephone Set

- (2) Remove dial.
- (3) Remove and discard the mounting screw furnished as part of the electron tube.
- (4) Install and connect tube as shown in Fig. 15 and Table E for 701B or Fig. 19 and Table I for 702B telephone set.
- (5) Replace dial and housing.

#### ▶10A Ringing Range Extender

**3.12** The 10A extender can be used to replace the 426A cold-cathode gas tube in the 702B telephone set on long subscriber loops. The 10A is not intended as a general replacement for the 426A tube but should only be used on long loops where increased ringing range is required.

**3.13** The 10A extender is to be used for 4-party full selective and 8-party semiselective ringing on loops greater than 1600 ohms (if used on shorter loops it may cause pretrip problems). Make connections as shown in Table I.



*For negative parties, the (R) lead should always be connected to ground to avoid the possibility of bell tap.*

**3.14** For additional information on 10A extender, refer to Section 501-322-100.▶

#### Portable Installation

**3.15** Jacks and plugs are available for portable installation of telephone sets. Refer to appropriate section for selection of proper types.

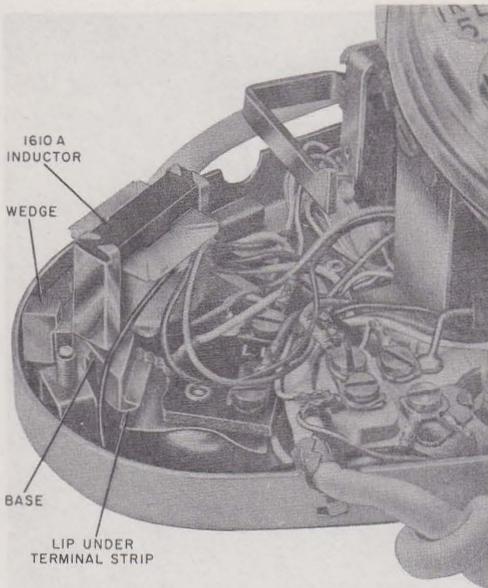


Fig. 5—Location of 1610A Inductor

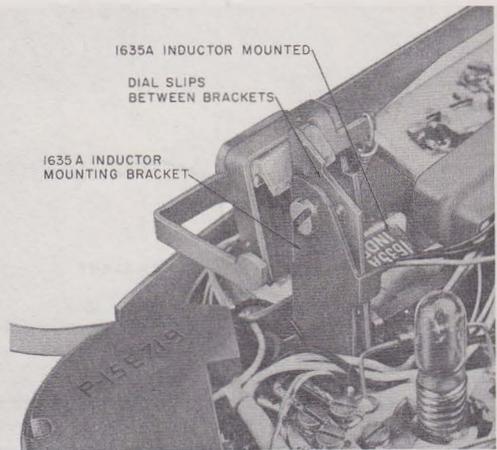


Fig. 7—1635A Inductor Mounted in 701B Telephone Set

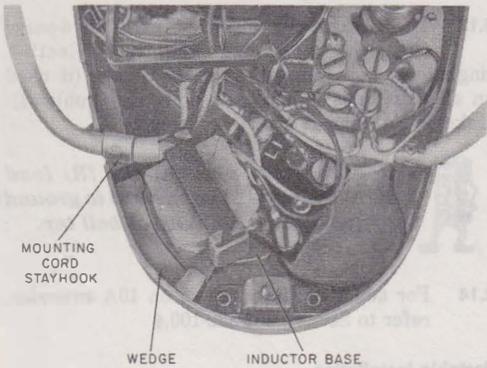


Fig. 6—Top View, Location of Wedge

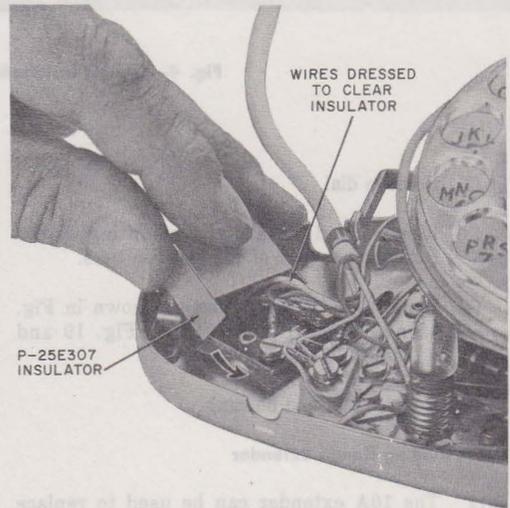


Fig. 8—Placing Insulator Over Terminal

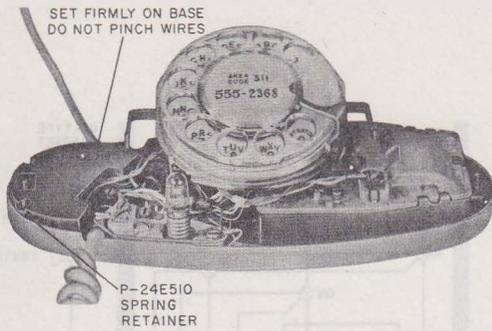


Fig. 9—Location of P-24E510 Spring Retainer and P-15E719 Weight

4. MAINTENANCE

4.01 Maintenance of the 701B or 702B PRINCESS® telephone sets is limited to replacing defective components (Table A) and burnishing or adjusting line switch contacts.

4.02 Refer to sections covering dials, handsets, cords, ringers, networks, line keys, etc., for maintenance of these components.

4.03 Housings, dial plates, and handsets may be cleaned with a damp KS-2423 cloth. **Do not use scouring cleaners on colored components as this may damage finish.**

4.04 If replacement of the mounting cord is required, either the D5AK or D4BT cord may be used.

3

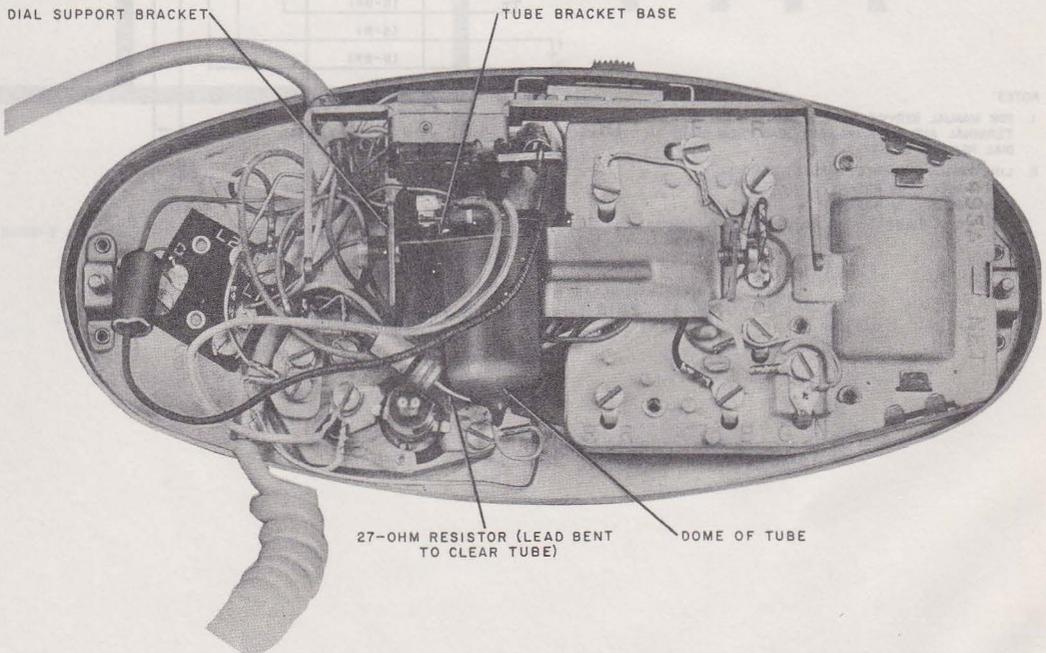


Fig. 10—Location of Cold-Cathode Tube in 701B Telephone Set



TABLE 9

## 701B TELEPHONE SET CONNECTIONS WITH INDUCTOR

WIRE OR LEAD		COLOR	INDIV OR BRIDGED	TIP PARTY ‡	TIP PARTY WITH IDENT GRD	
					1000Ω	2500Ω
Line Wire at Conn Block	Ring	R	R	R	R	R
	Tip	G	G	G	G	G
	Grd	Y	Y	Y	Y	Y
Trnsf Leads at Conn Block		Y BK	Y B	Y B	Y B	Y B
Mtg Cord at Conn Block		R	R	R	G	G
		G	G	G	R	R
		Y	Y	Y	Y	Y
		BL	B	B	B	B
		W	R	R	G	G
		BK	B	B	B	B
Mtg Cord at Set		R	L2	L2	L2	L2
		G	L1	L1	C†	C†
		Y	3	3	3	3
		BL	4	4	4	4
		W	D	D	D	D
		BK	4	4	4	4
Inductor Leads at Set		BK R S			3 L1 L1	3 * L1
Line Switch		S-W S-BR S-G	F† C† L1†	F† C† L1	B† F† L1	B† F† L1

\* Insulate and store or connect to spare terminal.

† Terminal on network.

‡ For ring party service reverse (R) and (G) mounting cord leads at set.

**Notes:**

- Connections include modifications to prevent false billing due to incomplete hang-up.
- When connecting the D6AB mounting cord leads for tip party identifying ground use D-161488 connectors and M1W straps as required to extend conductor leads.

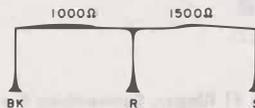


Fig. 12—Schematic For 1610A or 1635A Inductor

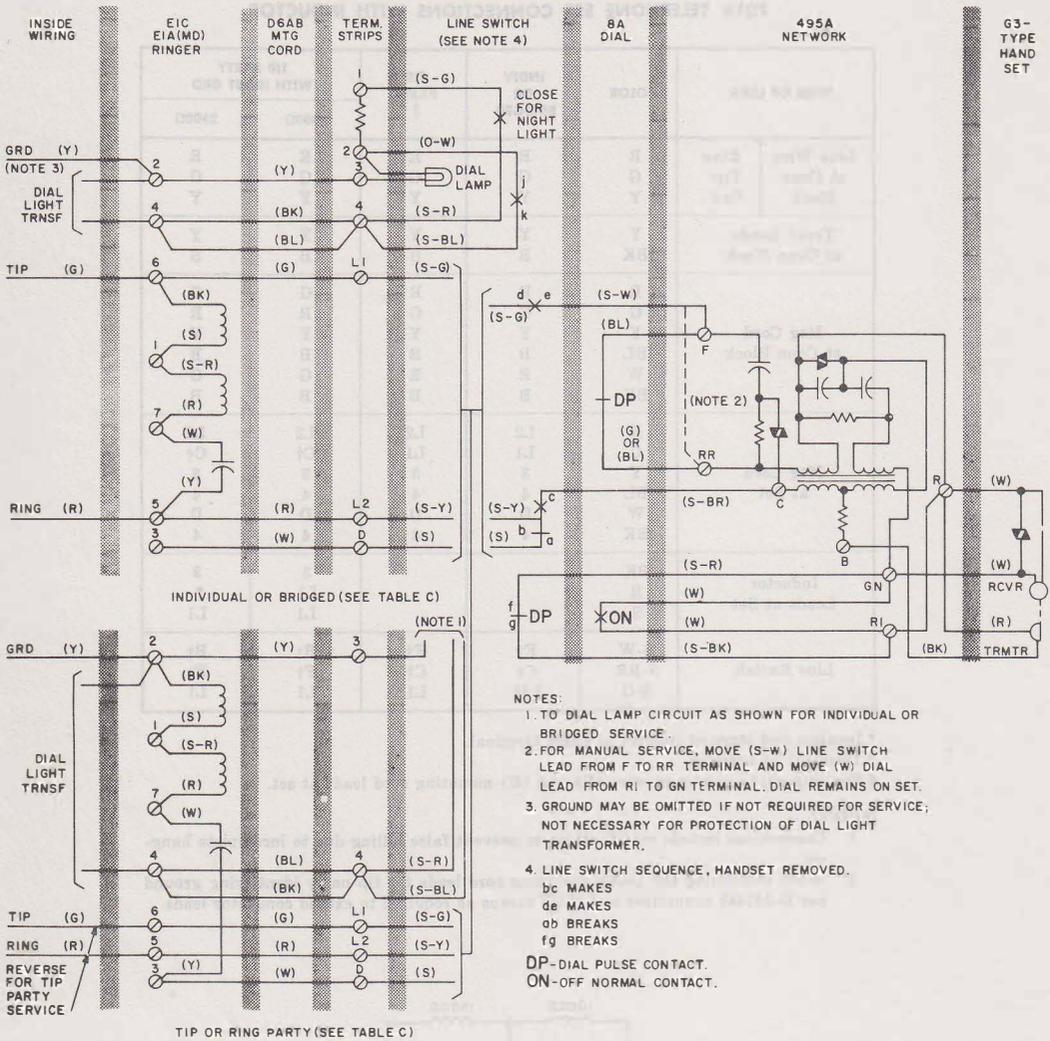


Fig. 13—701B Telephone Set With E1 Ringer, Connections For Bridged, Ring, or Tip Party Service



TABLE C

## 701B TELEPHONE SET CONNECTIONS WITH E1C OR E1A (MD) RINGER

WIRE OR LEAD		COLOR	INDIV OR BRIDGED	RING PARTY †	TIP PARTY WITH IDENT GRD	
					1000Ω	2650Ω
Line or Ringer	Ring	R	5	5	5	5
	Tip	G	6	6	6	6
	Grd	Y	2	2	2	2
Ringer		R	7	7	7	1
		S-R	1	1	1	2
		BK	6	2	2	1
		S	1	1	1	7
Capacitor in Ringer		W	7	7	7	7
		Y	5	3	3	3
Trnsf Leads		Y	2	2	2	2
		BK	4	4	4	4
Mtg Cord at Ringer		R	5	5	6	6
		G	6	6	5	5
		Y	2	2	2	2
		BL	4	4	1	1
		W	3	3	3	3
Mtg Cord at Set		BK	4	4	4	4
		R	L2	L2	L2	L2
		G	L1	L1	F*	F*
		Y	3	3	3	3
		BL	4	4	L1	L1
Line Switch		W	D	D	D	D
		BK	4	4	4	4
		S-BR	C*	C*	C*	C*
		S-G	L1	L1	L1	L1
		S-W	F*	F*	B*	B*

\* Terminal on network.

† For tip party service reverse (R) and (G) mounting cord leads at set.

TABLE D

## 701B TELEPHONE SET CONNECTIONS WITH F1A RINGER

WIRE OR LEAD			COLOR	INDIVIDUAL OR BRIDGED	RING PARTY	TIP PARTY	TIP PARTY WITH IDENTIFYING GROUND (NOTE 2)	
							1000Ω	2650Ω
F1A Ringer Term.	Line	Ring	R	6	6	1	1	1
		Tip	G	4	1	6	5	5
		Grd	Y	1	4	4	4	4
	Ringer Coil		R	7	7	7	7	2
			S-R	2	2	2	2	4
			BK	4	4	4	4	2
			S	2	2	2	2	7
			BL	4	4	4	4	4
	Network Straps	G	BL	4	4	4	4	4
		A	R	7	7	7	7	7
		B	G	6	6	6	6	6
	Dial Light Trnsf		1	1	4	4	4	4
			2	3	3	3	3	3
	Mtg Cord		R	6	6	6	5	5
			G	4	1	1	1	1
			Y	1	4	4	4	4
			BL	3	3	3	2	2
			W	5	5	5	6	6
		BK	3	3	3	3	3	
Set Term.	Mtg Cord		R	L2	L2	L2	L2	L2
			G	L1	L1	L1	C*	C*
			Y	3	3	3	3	3
			BL	4	4	4	L1	L1
			W	D	D	D	D	D
			BK	4	4	4	4	4
	Line Switch	S-BR	C*	C*	C*	F*	F*	
		S-G	L1	L1	L1	L1	L1	
		S-W	F*	F*	F*	B*	B*	

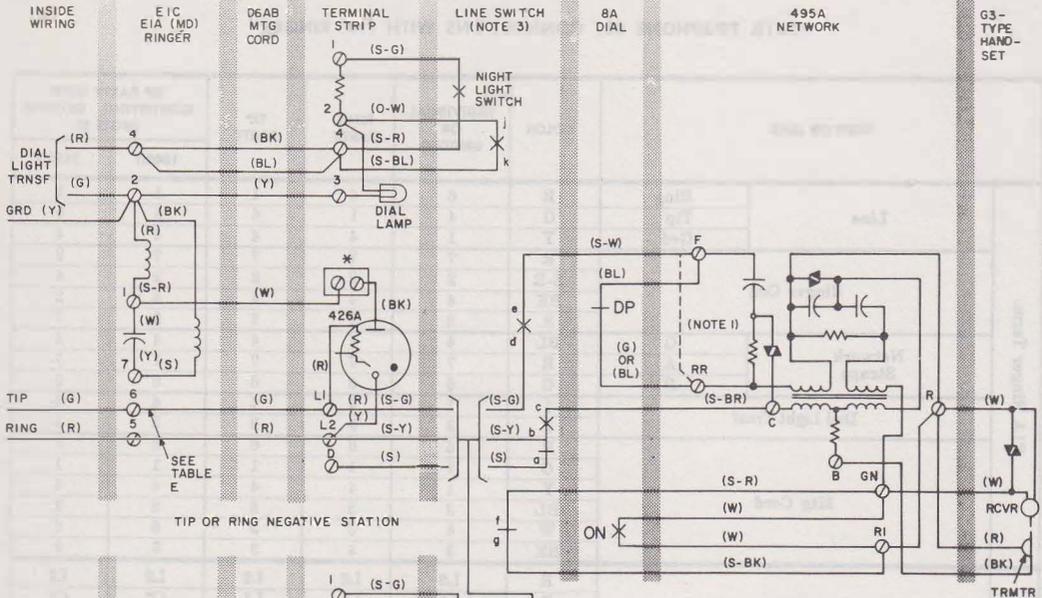
3



The F1A ringer is not intended to be used with 4-party selective or 8-party semiselective service, or any other service where code ringing would not be distinguishable in CHIME position. For schematic drawing and maintenance information on F1A ringer, see section on the F1A ringer.

- Notes:**
1. Ringer wired at factory for individual or bridged, ring, and tip party service.
  2. Connections include modification to prevent false billing due to incomplete hangup.
  3. When connecting the D6AB mounting cord leads for tip party identifying ground use D-161488 connectors and M1W straps as required to extend conductor leads.

\* Terminals on network of telephone set.



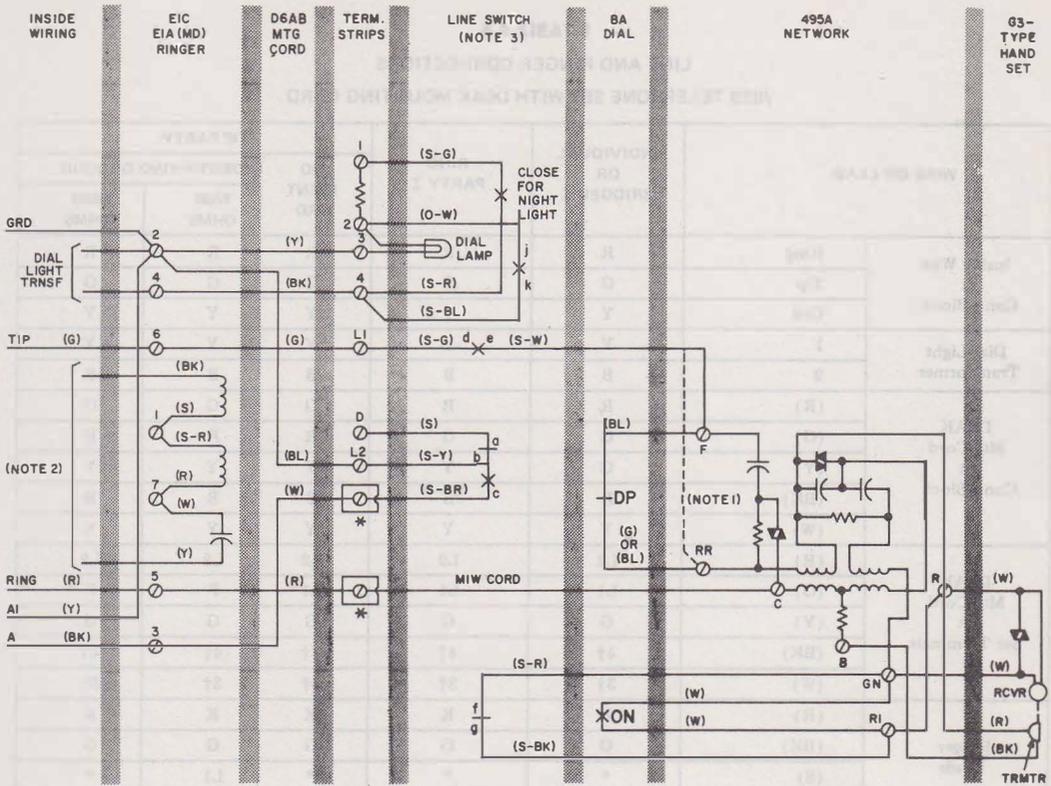
**TABLE E  
4-PARTY SELECTIVE AND  
8-PARTY SEMISELECTIVE  
SERVICE (701B)**

LOCATION	WIRE OR LEAD	COLOR	NEGATIVE STATIONS		POSITIVE STATIONS		
			1 & 5	2 & 6	3 & 7	4 & 8	
Terminals on EIC or EIA (MD) Ringer	Line	Ring	R	5	6	5	6
		Tip	G	6	5	6	5
		Grd	Y	2	2	2	2
	Ringer Coil Leads	R	R	2	2	5	5
		S-R	S	1	1	1	1
		S	7	7	7	7	7
		BK	2	2	5	5	
	Capacitor Leads	Y	7	7	7	7	7
		W	1	1	1	1	
		R	5	5	5	5	
		G	6	6	6	6	
		W	1	1	1	1	
Y		2	2	2	2		
Mtg Cord	BL	4	4	4	4	4	
	BK	4	4	4	4		
	G	2	2	2	2		
	R	4	4	4	4		
Terminals in 701B Telephone Set	Mtg Cord	R	L2	L2	L2	L2	
		G	L1	L1	L1		
		W	*	*	*	*	
	Y	3	3	3	3		
	BL	4	4	4	4		
	BK	4	4	4	4		
	BK	*	*	*	*		
	R	L1	L1	L2	L2		
	Y	L2	L2	3	3		

- NOTES:
- FOR MANUAL SERVICE MOVE (S-W) LINE SWITCH LEAD FROM F TO RR TERMINAL. DIAL LEAD FROM R1 TO GN TERMINAL. DIAL REMAINS ON SET4 TUBE MAY BE CONNECTED TO (G) IF RINGER OPERATION IS MARGINAL.
  - FOR NEGATIVE STATIONS IN OFFICES WITHOUT ANI, (R) LEAD FROM 426A
  - LINE SWITCH SEQUENCE, HANDSET REMOVED.
- bc MAKES    ob BREAKS  
de MAKES    fg BREAKS
- \* REMOVE W LEAD FROM D PUNCHING IN SET AND CONNECT TO BK TUBE LEAD USING D-16148B CONNECTOR.
- DP - DIAL PULSE  
ON - DIAL OFF - NORMAL CONTACT

B-555406

**Fig. 15—701B Telephone Set With 426A Cold-Cathode Tube**



3

NOTES:

1. FOR MANUAL SERVICE, MOVE (S-W) LINE SWITCH LEAD FROM F TO RR TERMINAL AND MOVE (W) DIAL LEAD FROM RI TO GN TERMINAL. DIAL REMAINS ON SET.
  2. FOR INDIVIDUAL LINE RINGER, CONNECT BK TO TIP (6) AND Y CAPACITOR LEAD TO RING (5). FOR COMMON AUDIBLE RINGER, CONNECT TO SIGNAL LEADS FROM EQUIPMENT CABINET. USING D-161488 CONNECTORS.
  3. LINE SWITCH SEQUENCE, HANDSET REMOVED.  
 bc MAKES      ab BREAKS  
 de MAKES      fg BREAKS
- \* CONNECT WITH D-161488 CONNECTOR.  
 DP-DIAL PULSE CONTACT.  
 ON-DIAL OFF-NORMAL CONTACT.

8-190417

Fig. 16—701B Telephone Set, Wired for 1A1 and 1A2 Key Telephone System

◆ TABLE F ◆  
 LINE AND RINGER CONNECTIONS  
 702B TELEPHONE SET WITH D5AK MOUNTING CORD

WIRE OR LEAD		INDIVIDUAL OR BRIDGED †	RINGER PARTY ‡	TIP PARTY		
				NO IDENT GRD	IDENTIFYING GROUND	
					1000 OHMS	2650 OHMS
Inside Wire at Conn Block	Ring	R	R	R	R	R
	Tip	G	G	G	G	G
	Grd	Y	Y	Y	Y	Y
Dial Light Transformer	1	Y	Y	Y	Y	Y
	2	B	B	B	B	B
D5AK Mtg Cord at Conn Block	(R)	R	R	G	G	G
	(G)	G	G	R	R	R
	(Y)	G	Y	Y	Y	Y
	(BK)	B	B	B	B	B
	(W)	Y	Y	Y	Y	Y
D5AK Mtg Cord at Set Terminals	(R)	L2	L2	L2	L2	L2
	(G)	L1	L1	L1	F	F
	(Y)	G	G	G	G	G
	(BK)	4†	4†	4†	4†	4†
	(W)	3†	3†	3†	3†	3†
Ringer Leads	(R)	K	K	K	K	K
	(BK)	G	G	G	G	G
	(S)	*	*	*	L1	*
	(S-R)	*	*	*	*	L1
Line Switch	(W) [S-W]	F	F	F	B	B
Strap from H	(BK) [S-BK]	A	A	A	*	*

\* Insulated and stored.

† Terminals on lamp terminal block.

‡ Factory-wired for bridged or ringer party

( ) Current color code.

[ ] MD color code.

- Note:**
- To silence ringer permanently (for all classes of service), disconnect (R) ringer lead from K; insulate and store or use spare terminal.
  - When connecting the D5AK mounting cord leads for tip party identifying ground, use D-161488 connectors and M1W straps as required to extend conductor leads.

♦ TABLE G ♦

**LINE AND RINGER CONNECTIONS**  
**702B TELEPHONE SET WITH D4BT MOUNTING CORD**

WIRE OR LEAD		INDIVIDUAL OR BRIDGED	RING PARTY	TIP PARTY		
				NO IDENT GRD	IDENTIFYING GROUND	
					1000 OHMS	2650 OHMS
Inside Wire at Conn Block	Ring	R	R	R	R	R
	Tip	G	G	G	G	G
	Grd	Y	Y	Y	Y	Y
Dial Light Transformer	1	Y	Y	Y	Y	Y
	2	B	B	B	B	B
D4BT Mtg Cord at Conn Block	(R)	R	R	G	G	G
	(G)	G	G	R	R	R
	(Y)	Y	Y	Y	Y	Y
	(BK)	B	B	B	B	B
D4BT Mtg Cord at Set Terminals	(R)	L2	L2	L2	L2	L2
	(G)	L1	L1	L1	F	F
	(Y)	3†	3†	3†	3†	3†
	(BK)	4†	4†	4†	4†	4†
Ringer Leads	(R)	K	K	K	K	K
	(BK)	L1	3†	3†	3†	3†
	(S)	*	*	*	L1	*
	(S-R)	*	*	*	*	L1
Line Switch	(W) [S-W]	F	F	F	B	B
Strap from H	(BK) [S-BK]	A	A	A	*	*

\* Insulated and stored.

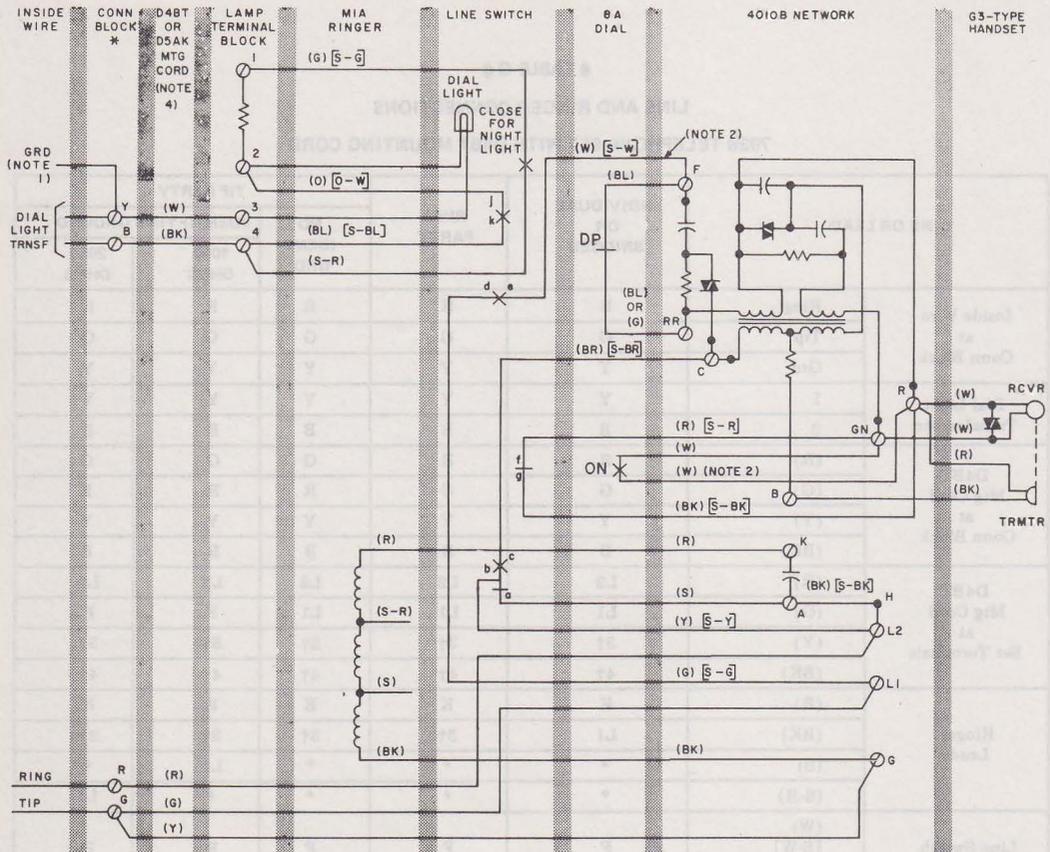
† Terminals on lamp terminal block.

() Current color code.

[] MD color code.

**Note:** To silence ringer permanently (for all classes of service), disconnect (R) ringer lead from K; insulate and store or use spare terminal.

3



## NOTES:

- GROUND MAY BE OMITTED IF NOT REQUIRED FOR SERVICE; NOT REQUIRED FOR PROTECTION OF DIAL LIGHT TRANSFORMER.
- FOR MANUAL SERVICE, MOVE (W) [S-W] LINE SWITCH LEAD FROM F TO RR TERMINAL AND MOVE (W) DIAL LEAD FROM R TO GN TERMINAL. THE DIAL REMAINS ON THE SET.
- LINE SWITCH SEQUENCE, HANDSET REMOVED:  
bc MAKES  
de MAKES  
ab BREAKS  
fg BREAKS
- CONNECTIONS SHOWN ARE FOR D5AK MOUNTING CORD, FOR D4BT CORD SEE TABLE G.

\* JACKS AND PLUGS ARE AVAILABLE FOR PORTABLE INSTALLATION. REFER TO DIVISION 461 FOR SELECTION OF APPROPRIATE TYPES.  
( ) CURRENT COLOR CODE  
[ ] MD COLOR CODE  
DP - DIAL PULSE CONTACT  
ON - DIAL OFF-NORMAL CONTACT

B 682233

Fig. 17—702B Telephone Set, Factory Wiring

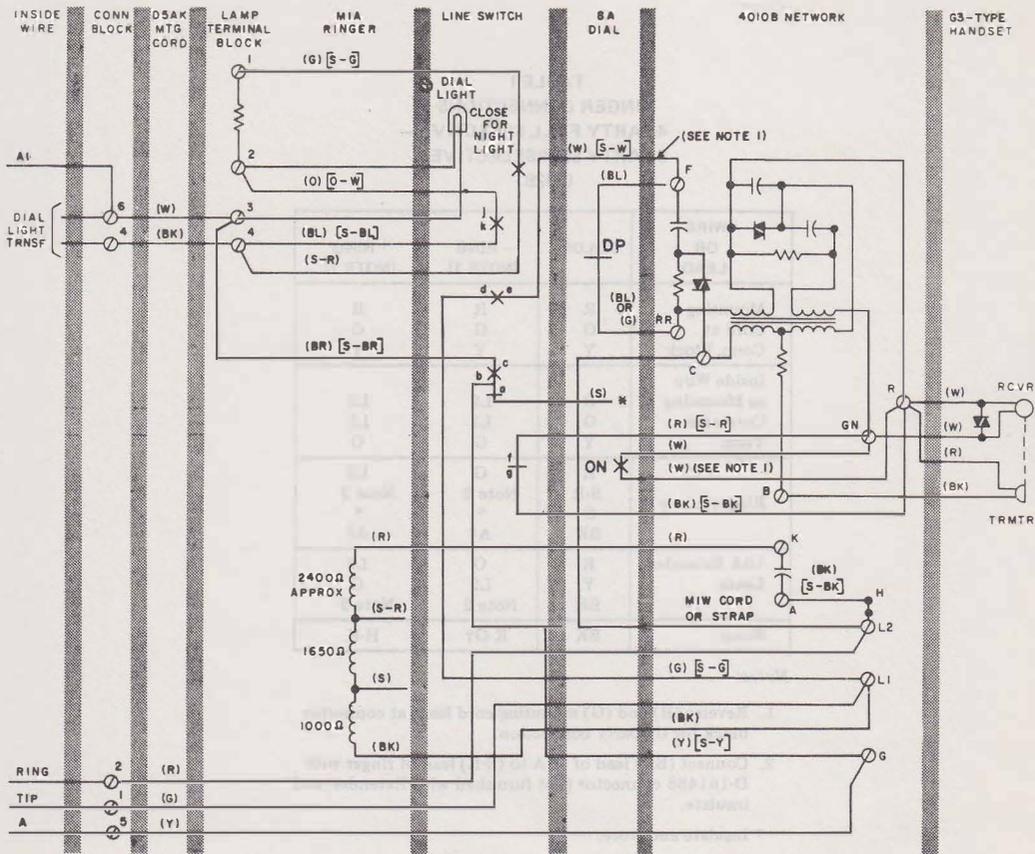


TABLE H  
WIRING CHANGES FOR IA1 AND IA2

LEAD OR CONDUCTOR	FROM	TO
RINGER	(BK)	G L1
LINE SWITCH	(S)	A INSULATE AND STORE
	[S-Y] (Y)	L2 G
	[S-BR] (BR)	C 3
STRAP		L2 C
NETWORK	[S-BK] (BK)	* A

NOTES:

1. FOR MANUAL SERVICE, MOVE (W) [S-W] LINE SWITCH LEAD FROM F TO RR TERMINAL, AND MOVE (W) DIAL LEAD FROM R TO GN TERMINAL. THE DIAL REMAINS ON THE SET.
2. LINE SWITCH SEQUENCE, HANDSET REMOVED.

bc MAKES

de MAKES

ob BREAKS

fg BREAKS

\* INSULATE AND STORE.

( ) CURRENT COLOR CODE.

c 3MD COLOR CODE.

DP - DIAL PULSE CONTACT

ON - DIAL OFF-NORMAL CONTACT

B-682234

Fig. 18—4702B Telephone Set Used With 1A1 and 1A2 Key Telephone Systems

TABLE I  
 RINGER CONNECTIONS  
 4-PARTY FULL SELECTIVE —  
 8 PARTY SEMISELECTIVE  
 (702B)

WIRE OR LEAD	COLOR	- RING (NOTE 1)	+ RING (NOTE 1)
Mounting Cord at Conn. Block	R G Y	R G Y	R G Y
Inside Wire or Mounting Cord at Set Term	R G Y	L2 L1 G	L2 L1 G
Ringer Leads	R S-R S BK	G Note 2 * A†	L2 Note 2 * A†
10A Extender Leads	R Y BK	G L2 Note 2	L2 G Note 2
Strap	BK	K-G†	H-K

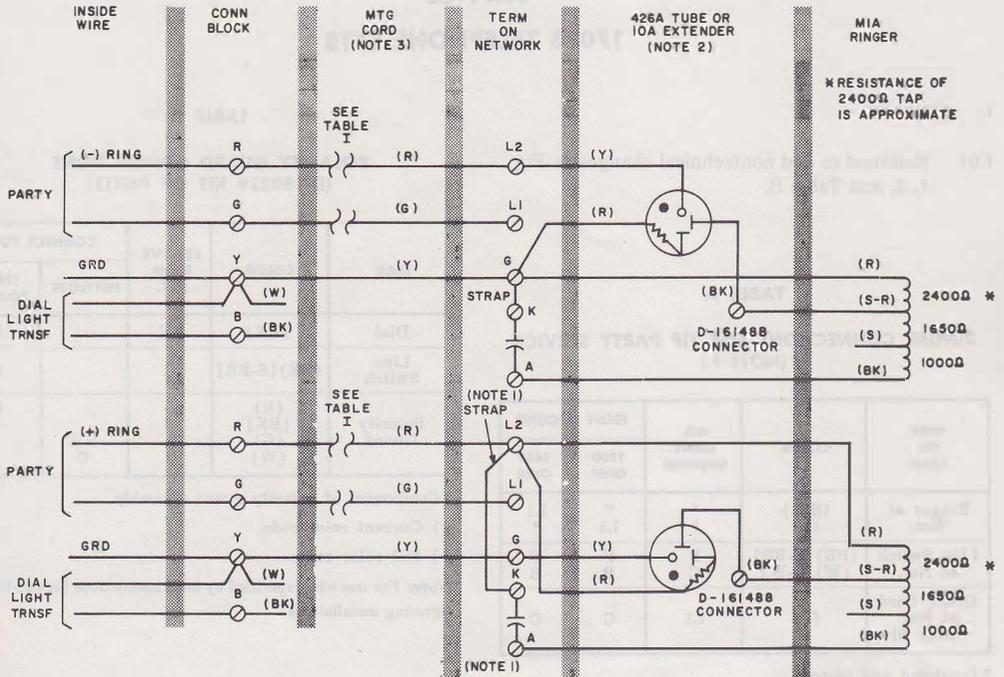
Notes:

- Reverse (R) and (G) mounting cord leads at connector block for tip party connection.
- Connect (BK) lead of 10A to (S-R) lead of ringer with D-161488 connector (not furnished with Extender) and insulate.

\* Insulate and store.

† Use M1W Cord or equivalent (not furnished with Extender) and insulate and store (BK) strap.

‡ Remove (S) line switch lead from terminal A, insulate and store.



NOTES:

1. REMOVE (S) LINE SWITCH LEAD, INSULATE AND STORE THE LEAD OR CONNECT TO SPARE TERMINAL.
2. CONNECTIONS SHOWN FOR 426A TUBE. FOR 10A EXTENDER CONNECTIONS, REFER TABLE I.

3. IF D4BT CORD IS USED, WIRE A STRAP (MIW CORD OR EQUIVALENT) FROM TERMINAL 3 OF THE LAMP TERMINAL BLOCK TO THE K TERMINAL FOR (-) RING AND TO THE G TERMINAL FOR (+) RING.

B-858715

Fig. 19—702B Telephone Set With 426A Cold-Cathode Tube or 10A Extender