

**500 SERIES TELEPHONE SETS**  
**(500 AND 501 TYPE)**  
**INSTALLATION**

**1. GENERAL**

1.01 This section covers the installation procedures for the 500 series telephone sets listed below:

500 Type			501 Type	
500A/B	500C/D	500E/F	501A/B	501C/D
500H	500J/K	500L/M	501F	501J/K
500P	500U		501P	501U

1.02 Information is also included regarding permanent silencing of extension station ringers, interference from radio broadcasting stations, conversion of sets for manual service, and use of 500-series sets in noisy locations.

1.03 This section is reissued: To include information on the 500P, 500U, 501P, and 501U telephone sets, and the conversion of 500-type telephone sets for use on polarized ringing lines, and to delete information on the C-type ringer covered in Section C31.207, C-type Ringers, Maintenance.

1.04 Due to extensive changes, marginal arrows have been omitted.

**2. LOCATING**

2.01 In locating the telephone set, be guided by the customer's wishes and the requirements in Section C31.099, Planning Indoor Installations.

**3. RINGER**

3.01 **Biasing Spring Setting:** The proper biasing spring settings for the class of service furnished and the number of ringing bridges are shown in Section C31.207, C-type Ringers, Maintenance.

3.02 **Ringer Cutoff Feature:** If ringer cutoff feature is to be provided, follow the procedure as shown in Section C31.207, C-type Ringers, Maintenance.

**Note:** Ringer cutoff features should not be provided unless authorized by service order or local regulations.

3.03 **Permanent Silencing of Ringers:** To permanently silence station ringers in the 500- and 501-type telephone sets, transfer ringer leads at terminals on network to correspond with the wiring changes indicated in bold face type and associated notes in Tables A and B.

**4. TESTS**

4.01 **Station Testing:** Upon completion of the installation, make tests in accordance with Section C61.711, Tests with Test Desk, Common Battery Stations, or in accordance with local practices.

4.02 Show the customer how to pick up and hold the telephone set with handset in place on the mounting and how to move the ringer volume control adjustment wheel. Obtain a ringback and let customer listen to the different volume levels.

**Note:** There should be a definite reduction in volume when the volume control is moved away from the LOUD position.

4.03 Give instruction card (P-348114) to customer. If customer is not present, leave instruction card where it will be readily seen, and adjust the ringer to the position which seems best for the premises.

**5. RADIO SIGNAL DEMODULATION SUPPRESSION**

5.01 When interference from radio broadcasting is experienced, e.g., in the proximity of a radio transmitting station, a 1542A inductor, as covered in Section C55.804, Radio Signal Suppression in Telephone Sets, 1542A Inductor, shall be used to suppress radio interference. When this equipment is not available, the capacitor method described in 5.02 should be employed.

5.02 A 0.02-mf capacitor (KS-13814, L7) should be added and connected as follows:

Type Set	Connect
500A/B 501A/B	Across terminals L and RW of 311A equalizer and placed against side of equalizer nearest switch.
500J/K 501J/K	Across terminals L2 and GN of network and placed against side of network nearest the ringer.
500C, D, E, F, H, L, M, P, and U  501C, D, F, P, and U	Across terminals F and L2 of network and placed between end of network and ringer gong, except in the case of the tip party on 2-party message rate service where connection should be made across L1 and L2. In some cases an additional 0.02-mf capacitor across terminals R and RR and placed against side of network nearest the ringer is necessary.

**Note:** Capacitors should be located so that they will not interfere with the operation of the set, and the exposed portion of bare wires should be insulated.

5.03 In 500A/B and 501A/B sets a 6-40 by 1/4" BHM screw (P-294615) or an unused screw from the network will be required to connect the capacitor to the L terminal of the 311A equalizer.

**6. CONVERSION FOR MANUAL SERVICE**

6.01 To convert the 500-series sets for manual service, remove the dial and dial leads, replace with a 95A or 95B apparatus blank, and make the wiring change indicated in the following table for the particular type set.

Type Set	Wiring Changes
500B 501B	Transfer <b>slate-brown</b> switch lead to RR terminal on network.
500D 501D	Transfer <b>slate-white</b> switch lead to RR terminal on network.
500F	Strap terminal on plunger switch to RR terminal on network.
500K 501K	Transfer <b>slate-brown</b> switch lead to RR terminal on network.
500M	Transfer <b>green</b> lead from F to RR terminal on network.
500U 501U	Transfer <b>slate-white</b> switch lead to RR terminal on network.

**SECTION C32.537**

**7. POWER SUPPLY ARRANGEMENTS FOR ILLUMINATED DIAL AND NIGHT LIGHT SETS**

7.01 For the 500H, 500P, and 500U, and 501P and 501U sets, a 6- to 8-volt ac or dc power supply must be provided to light the dial lamp. The KS-15675, L1 (black) or L2 (ivory) transformer connected to a 105- to 125-volt ac supply will provide for ac operation. (See Fig. 1.)

7.02 Where possible, the installer should avoid the use of power receptacles that are under the control of a switch.

7.03 On the 500H, 500P, and 501P sets, if a suitable ac supply is not available, dc operation may be obtained by using dry cell batteries or other 6- to 8-volt dc supply. **Batteries should not be used on the 500U or 501U sets because of continuous drain on batteries when used as a night light.**

7.04 The connecting block generally should be not more than 150 feet from the transformer, using standard inside wire. The amount of illumination depends on the line voltage and, therefore, in cases where the voltage is low, it may not be possible to obtain the desired illumination with wire lengths as long as 150 feet.

**8. NOISY LOCATIONS**

8.01 The use of 500-type equalized telephone sets is recommended in noisy locations such as generator rooms in power plants, loading ramps, etc. In locations where noise is extremely severe a 500-type telephone set, equipped with a KS-13491, L1 1-watt, 39-ohm resistor connected across the transmitter circuit, should be used. This transmitter shunt decreases transmitting efficiency and, therefore, reduces sidetone noise. The loss of transmission is compensated for by the natural tendency to raise the voice in noisy locations.

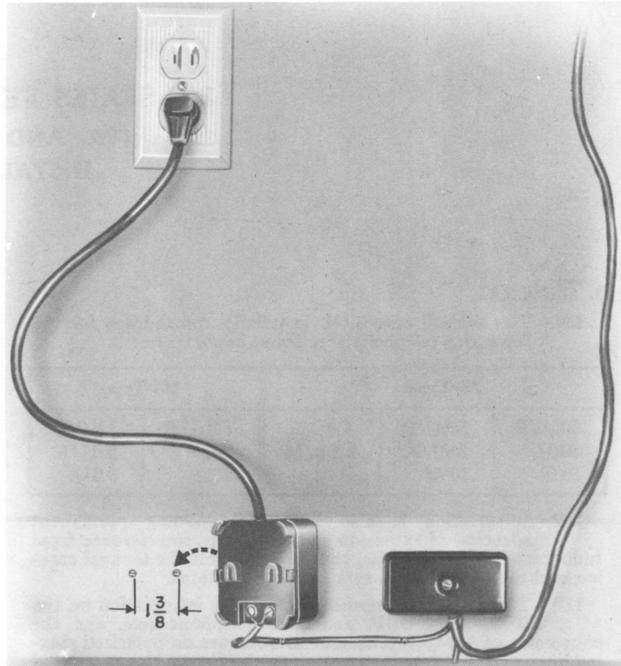
8.02 The KS-13491, L1 resistor should be connected in the 500-series sets as shown below:

Type Set	Connect
500A/B	Between <b>B</b> and <b>RW</b> terminals on equalizer.
500J/K	Between <b>B</b> and <b>RW</b> terminals on terminal strip.
500C/D 500E/F 500H 500L/M 500P 500U	Between <b>R</b> and <b>B</b> terminals on the network.

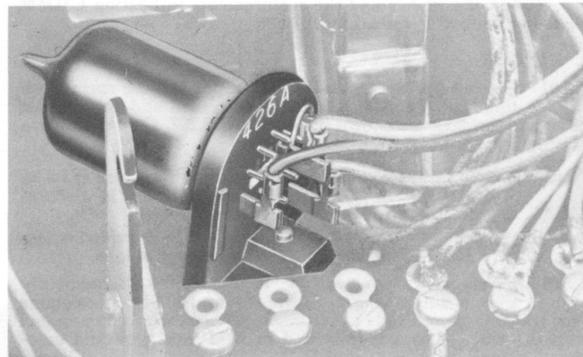
8.03 No mounting arrangements are required since the resistor leads furnish adequate support.

**9. ADDITION OF TUBE TO 500-TYPE TELEPHONE**

9.01 The 500-type telephone set may be converted for use on polarized ringing lines, in the field, by adding the 425A or the 426A electron tube. The tube is mounted in the base of the 500-type telephone set, as shown in Fig. 2, with a No. 6 self-tapping screw (furnished with tube). For connection information refer to Section C63.442, 500 Series Telephone Sets, 501-type, Connections.



**Fig. 1—Typical KS-15675, L1 Transformer and Connecting Block Installation**



**Fig. 2—500-type Telephone Set with Tube Added for Use on Polarized Ringing Lines**

TABLE A  
RINGER LEAD CONNECTIONS

Class of Ringing Service	Type Set	Ringer Leads			
		Red	Black	Slate	Sl-Red
		Network Terminals			
Bridged, Ring Party, and Tip Party of Flat Rate	500A/B	K	K	E	E
	500C/D	L2	K	K	A
	500E/F	L2	K	K	A
	500H	L2	K	K	A
	500J/K	K	K	E	E
	500P	L2	K	K	A
500U	L2	K	K	A	
*Tip Party of 2-party Dial Message Rate, Flat Rate Automatic Message Accounting, Zone Registration	500B	K	G	M	E
	500D	K	G	B	K
	500K	K	G	M	E
	500P	K	G	B	K
	500U	K	G	B	K
*Tip Party of Flat Rate Automatic Ticketing	500B	M	E	K	G
	500D	B	K	K	G
	500K	M	E	K	G
	500P	B	K	K	G
	500U	B	K	K	G

\* Transfer slate switch lead from L2 to A terminal on network.

TABLE B  
RINGER LEAD CONNECTIONS

Class of Ringing Service	Type Set	Ringer Leads				
		Red	Black	Slate	Sl-Red	
		Network Terminals				
4-party Selective 8-party Semi-selective	(+) and (-) Ring and Tip Party Using C3A Ringers	501A/B	E	E		
		501C/D	K	K		
		501J/K	E	E		
		501P	K	K		
		501U	K	K		
	(-) Ring and (-) Tip Party Using C4A Ringer	501A/B	K	K	K	A
		501C/D	K	K	A	K
		501F	K	K	A	K
		501J/K	K	K	K	A
		501P	K	K	A	K
	501U	K	K	A	K	
	(+) Ring and (+) Tip Party Using C4A Ringer	501A/B	A	K	K	K
501C/D		K	K	A	K	
501F		K	K	A	K	
501J/K		A	K	K	K	
501P		K	K	A	K	
501U	K	K	A	K		