

INSTALLATION

86A KEY TELEPHONE ADAPTER

1. **GENERAL**

1.01 This section provides descriptive material and the installation procedure for the 86A key telephone adapter. This section also describes the method by which line pick-up keys of the 86A adapter are converted to signal keys.

1.02 The 86A key telephone adapter (see Fig. 1) contains keys, lamps, and termination facilities for adapting a standard desk or wall telephone to key telephone operation. The 86A adapter is designed for use with the A.E.Co. key telephone system type 10A1 (or W.E.Co. type 1A1). The 86A adapter can be converted for use with the A.E.Co. 10A key telephone system (or W.E.Co. type 1A) by following the instructions in note 2 of Fig. 5.

1.03 Six push-button keys are provided including (from left to right) a hold key, two line pick-up keys, and three line pick-up keys convertible to manual signaling keys. When depressed, pick-up keys engage a locking device which prevents simultaneous operation of two or more pick-up keys. The hold key and signal keys (if converted) are non-locking. Unconnected keys can be blocked by inserting key-stop bushings supplied with each adapter. A designation strip is mounted below the keys and key functions can be designated on the strip by the installer at the time of installation.

1.04 A lamp is located above each pick-up and signal key. The type of lamp indications (steady illumination, flashing, dark) for any given operation will depend on the type of associated

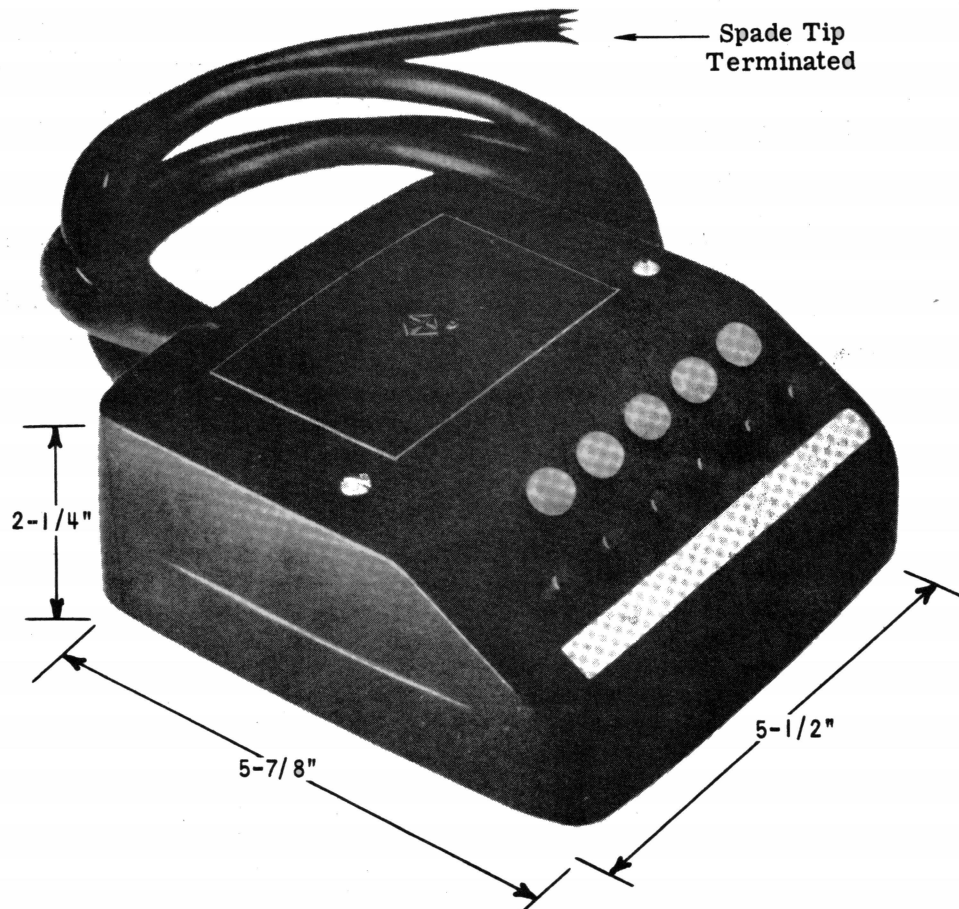


Figure 1. Type 86A Key Telephone Adapter

key telephone system relay equipment used. Usually, the indications will be: dark when the line is not in use, flashing to indicate an incoming call, steady illumination to indicate an outgoing call or call in progress.

1.05 The telephone used in combination with the key telephone adapter must be rewired slightly before the adapter is installed, if the associated key telephone system is A.E.Co. 10A1 (or W.E.Co. 1A1).

2. **CONVERSION OF LINE PICK-UP KEYS
TO SIGNAL KEYS**

2.01 Only the three line pick-up keys on the right end of the key row can be converted to signal keys. Key conversion must start with the pick-up key (or keys) at the right end of the key row, because the lock mechanism will not operate properly if an intermediate key is converted. Pick-up keys are converted to signal keys as follows:

- (1) Remove the two screws from the top of the adapter and remove the housing cover.
- (2) Unclamp and remove the retaining bracket (Fig. 2) from the key row.
- (3) Remove the push-button cap (Fig. 2) from each key.
- (4) Remove the set screw (Fig. 3) from the key to be converted.
- (5) Turn the adapter on its side and allow the locking plate (Fig. 3) to slide out.

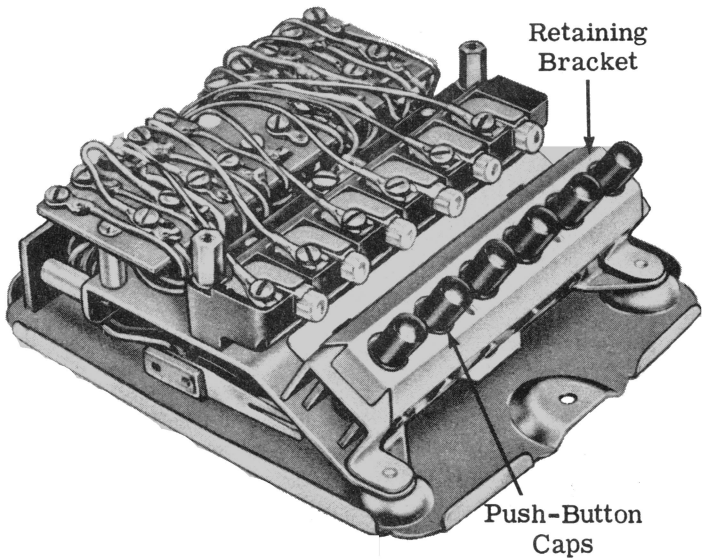


Figure 2. Key Assembly Showing Retaining Bracket and Push-Button Caps

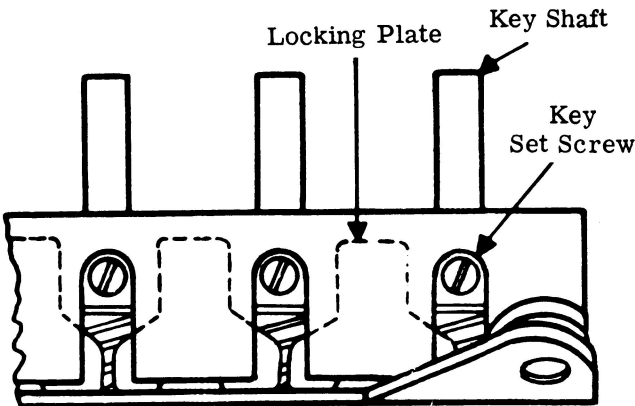


Figure 3. Key Assembly Interior Showing Parts Involved in Pick-Up-To-Signal Conversion

Table 1. Electrical Conversion of Pick-Up Keys to Signal Keys

Converted Key Sequence (Left to Right)	Number of Intercoms with Same Signal Key	Leads to be Changed (Spade-Tipped)							
		Orange		Brown		Green		Slate	
		From	To	From	To	From	To	From	To
*HPPPPS	1					X	SG		
HPPPSS	1							M	SG
HPPSSS	1			M	X			M	SG
HPPPPS	2			M	X	X	SG	M	5H
HPPPPS	3	M	X	M	X	X	SG	M	5H
*H-Hold, P-Pick-Up, S-Signal									

- (6) Rotate the key shaft (Fig. 3) one-half turn (180°) so that the threaded opening in the key shaft is aligned with the slot.
- (7) Replace the set screw in the key shaft.
- (8) Depress the key shaft. Depressing the key shaft should not cause an operated key to restore and should not lock itself.
- (9) Replace the push-button caps and retaining bracket.
- (10) Refer to Table 1 and change the spade-tipped leads as required for the modification being made.
- (11) Replace and screw down the housing cover.

3. ADDITION OF KEY-STOP BUSHINGS

3.01 Key-stop bushings are used to block the operation of unconnected keys. They are installed by removing the housing cover, key row retaining bracket, and key caps as described in Paragraph 2.01 steps (1) through (3) and then placing the key-stop bushing over the key to be blocked. After replacing key caps, bracket, and cover, the blocked key will not depress when pressure is applied.

4. INSTALLATION

Placing and Mounting

4.01 The telephone which is to be used with the adapter must be modified as described in GSP Section 473-000-800 "Modification-Standard A.E.Co. Telephones for Use with 10A1 (or 1A1) Type Key Telephone System", if the associated key telephone system is A.E.Co. 10A1 (or W.E.Co. 1A1). After the telephone has been modified, place or mount it at the location designated by the subscriber, if possible to do so.

4.02 The adapter may be placed on a table or desk, or permanently mounted on any vertical surface near the telephone. For wall mounting, the base of the adapter has openings (Fig. 4) for two wall-mounting screws, and an opening through which station wiring may pass to either a recessed electrical connection box in the wall or 44A connecting block. In general, the

line cord will be removed from an adapter which is mounted on or near an electrical connection box and the running cable will be terminated directly on the adapter.

4.03 The 44A connecting block is usually installed on a convenient vertical surface near the telephone. For installer's wiring at the 44A connecting block terminals, refer to the key telephone adapter wiring diagram in Fig. 5.

Telephone to Key Adapter Connections

4.04 The modified telephone is connected to the adapter by a four-conductor line cord. One end of the cord is connected to the telephone terminals and the other end to the interior terminal strip of the adapter. Connect the line cord leads as shown below.

TELEPHONE TERMINAL		ADAPTER TERMINAL
A	to	A
A1	to	1B
T (L2)	to	R
R (L1)	to	B

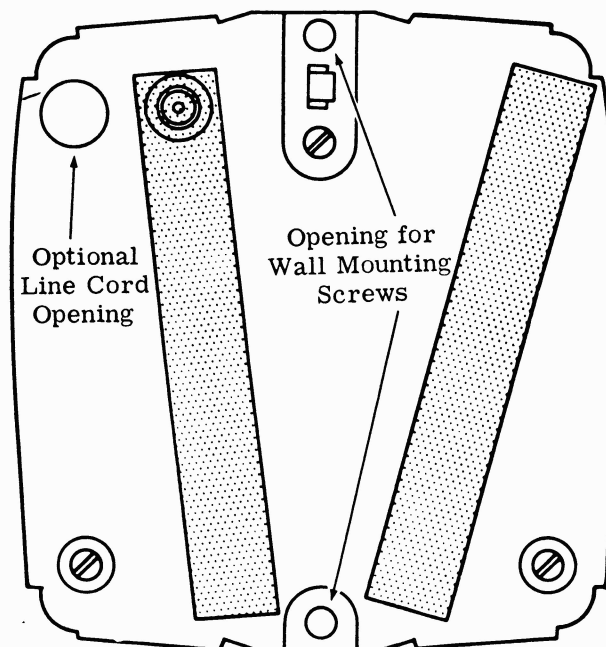


Figure 4. Bottom View of the Type 86A Key Telephone Adapter



2. WIRED FOR OPERATION WITH AUTOMATIC ELECTRIC COMPANY 10A1 OR WESTERN ELECTRIC COMPANY 1A1 SYSTEM. FOR OPERATION WITH AUTOMATIC ELECTRIC COMPANY 10A SYSTEM MODIFY WIRING AS FOLLOWS.

CHANGE	A LEAD	T LEAD	RED	BLUE
FROM TERM.	A	R	M	A
TO TERM.	IB	A	R	M

Figure 5. Type 86A Key Adapter Wiring Diagram for Key Assembly HPPPsPsPs

Ringing Connections

4.05 When the telephone ringer is to sound on all lines as a common audible signal, connect two leads (designated 1 and 2 in Fig. 5) to terminals R (L1) and T (L2), respectively, on the type 80, 90, 90M or 880 telephone.

4.06 The type 182 and type 183 telephones require a type 33 ringer unit for audible signaling. The ringer should be wired for bridged ringing and mounted near the telephone. Two leads from connecting block terminals $\frac{3}{5}$ and $\frac{3}{4}$ should then be connected to ringer unit terminals R (L1) and T (L2).

Optional Equipment

4.07 If required by the nature of the key telephone installation, supplementary equipment such as buzzers, line indicators, etc., may easily be added to the station. Instructions for this equipment is included in the GSP sections covering the various key telephone systems.

Operation

4.08 Before leaving a new key adapter installation, the installer should inquire as to whether or not the customer knows how to operate the key set. If the customer does not know how to operate the set, the installer should demonstrate its operation.