

## MODULAR TELEPHONE APPARATUS DESCRIPTION AND INSTALLATION

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### 1. GENERAL

1.01 This practice provides the description and installation instructions for modular telephone apparatus.

1.02 Modular telephone apparatus provides the ability to accommodate telephones and other terminal equipment with plug and jack portability. Telephones and other terminal equipment are now being equipped with a miniature plug that is compatible with miniature jack apparatus.

1.03 Desk type apparatus is equipped with a plug-ended, flat silver satin line cord. Wall type instruments are fitted in the field with adapters that enable a plug and jack installation on modular type wall hardware.

1.04 The modular concept relies on a miniature plastic plug and jack arrangement. The plug is shaped to be inserted in one position only which guarantees polarity. The plug contacts are recessed in a comblike configuration and are precious metal covered. The plug has an integral snap lock that secures the plug into the jack. The jack has flexible wire spring contacts that are precious metal covered. When the jack receives the plug, the comb on the plug separates and insulates the contacts from one another. The design of the plug and jack allows for wire spring travel, ensuring good contact. See Figure 1.

1.05 The plug is removed by depressing the tab on the snap lock and at the same time pulling the plug out of the jack. The snap lock tab protrudes out of the jack allowing removal without the aid of any tools.

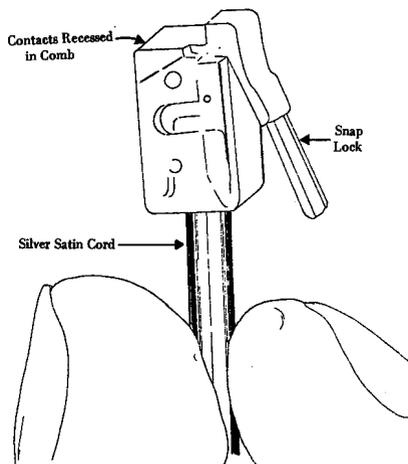


FIGURE 1. Miniature Plug

### 2. DESCRIPTION OF MODULAR CONNECTING APPARATUS

2.01 The following modular items are described in this practice.

- a. Silver Satin Line Cord: 7 feet, CSS No. 30-54-627-3; 14 feet, CSS No. 30-54-628-0; and 25 feet, CSS No. 30-54-629-0.
- b. (1) 625A Surface Mounted Jack, CSS No. 30-51-273-5.  
(2) NT-625QA4 Surface Mounted Jack, CSS No. 30-51-273-5.
- c. 625C Conversion Cover for 42A Connecting Block, CSS No. 30-51-255-7.

Distribution IV (C D)

- d. 625F Flush Mounted Jack, CSS No. 30-51-256-5.
  - e. 630A Wall Telephone Jack Mounting, 6-Term, CSS No. 30-59-248-8 and 4-Term, CSS No. 30-59-247-0.
  - f. 228A Wall Adapter for 554 type telephones, CSS No. 30-59-460-0.
  - g. 229A Wall Adapter for 2554 type miniwall telephone, CSS No. 30-59-462-6.
  - h. 230A Wall Adapter for Trendline type telephone, CSS No. 30-59-461-8.
  - i. 191B Backboard for wall telephone, ash, CSS No. 30-90-006-9.
  - j. Spacer for surface wiring of wall telephones, CSS No. 30-97-240-0.
- 2.02 Additionally, the following hardware is discussed. For convenience, CSS numbers are provided.
- a. 42A Connecting Block, CSS No. 30-51-251-4.
  - b. 43A Bracket, CSS No. 30-51-210-3.
  - c. 19A Faceplate, CSS No. 30-59-474-0.
  - d. 63A Junction Box, CSS No. 62-33-043-8.
  - e. 60 Type Mounting Ring, CSS No. 30-62-161-5.
  - f. 16A Faceplate, CSS No. 30-59-470-7.
  - g. Weatherproof Cover Assembly, CSS No. 30-59-122-8.
- 2.03 Some of the new modular hardware has been designed to be used with existing connecting apparatus described in the applicable paragraphs.

2.04 **Modular Silver Satin Line Cords (Figure 2):** Modular silver satin line cords are flat four-conductor cords with spade tips on one end and a miniature plug on the other end. In modular installations, the terminal apparatus will be hardwired by the spade tipped end. The miniature plug will mate with the miniature jack. Silver satin line cords are available in 7, 14, and 25 foot lengths.

2.05 **625A or NT-625QA4 Surface Mounted Baseboard Jack (Figure 3):** These jacks are designed to replace existing baseboard mounted connecting blocks. It is used for desk telephone applications.

2.06 **625C Conversion Cover for 42A Connecting Block (Figure 4):** This jack consists of a cover and jack assembly which fits over an existing 42A connector block, making it compatible with the modular system. The jack has spade-tipped leads which are connected to the existing screw terminals on the 42A block.

2.07 **625F Flush-Mounted Jack (Figure 5):** This flush-mounted jack is designed to accommodate plug-ended mounting cords used in modular installations. It can be mounted in any standard electrical outlet box by using a 43A bracket and 19A faceplate. This jack can also be used in prewired installations in conjunction with a 63A junction box, 60 ring, and a 16A faceplate.

2.08 **630A Wall Telephone Jack Mounting (Figure 6):** These jacks are designed for use with all wall-mounted telephone sets which have been equipped with the appropriate adapters. The metal cover assembly of the jack has two lugs which mate with corresponding keyholed slots in the telephone set adapter and permit installation or removal of the set for portability. These jacks can be mounted to a standard electrical outlet box for prewired installations, or directly to a wall surface using the optional spacer and the appropriate mounting hardware. See paragraph 2.11.

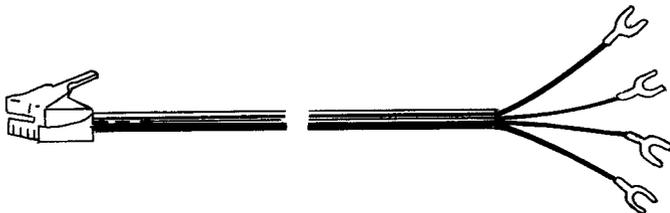


FIGURE 2. Modular Silver Satin Line Cord

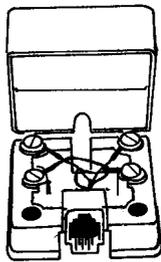
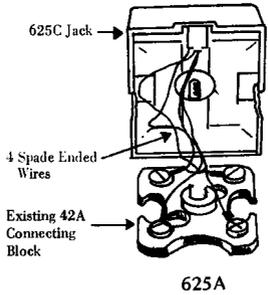


FIGURE 3. Surface Mounted Modular Jacks

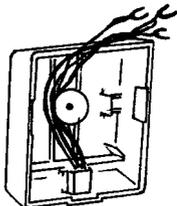


FIGURE 4. 625C Connecting Block Conversion

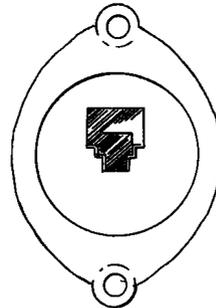


FIGURE 5. 625F Modular Jack

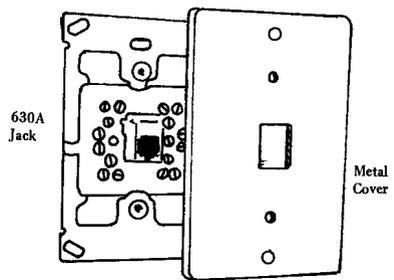


FIGURE 6. 630A Wall Telephone Modular Jack

**2.09 Wall Telephone Adapters (Figure 7):** Wall telephone adapters mount on the baseplate of standard wall-type telephone sets to adapt them for use with the miniature jack. All adapters have a self-aligning plug with four spade-tipped leads from each plug terminal to connect the plug to the telephone set circuitry. The adapters also have two keyholed slots which correspond to the mounting lugs on the jack cover assembly to permit installation or removal of the set.

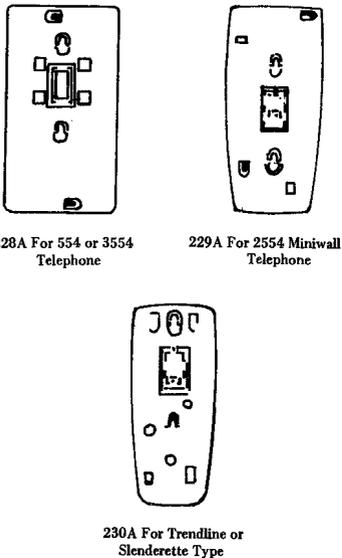


FIGURE 7. Adapters for Wall Telephones

**2.10 191B Backboard (Figure 8):** This backboard is designed to act as a frame around the 630A jack. It is used to cover up wall imperfections adjacent to the jack. It is held in place by a self-adhesive backing.

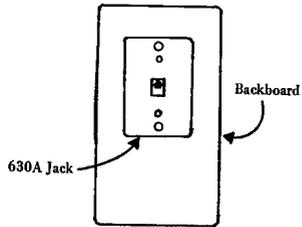


FIGURE 8. 191B Backboard

**2.11 Spacer (Figure 9):** The spacer adapts the 630A type jacks to wall surface mounting with surface wiring or concealed wiring. The 630A jack mounts on top of the spacer.

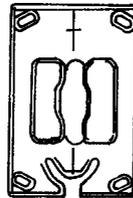


FIGURE 9. Spacer

### 3. INSTALLATION

3.01 Generally, instrument installation procedures are:

- a. Install appropriate jack for a desk and/or wall set.
- b. Plug telephone set into jack and test for proper operation.

*NOTE: When mounting a modular wall set, the first thing that must be done is to guide the plug into the receptacle. It must remain*

*slightly engaged while the studs are being located. This is necessary to prevent damage to the plug caused by bumping against the jack. While mounting, it is helpful to view the wall set from the side. See paragraphs 3.06 and 3.07 for detailed information on installation of wall telephones.*

c. Stamp Station Number Card "Q" to identify modular installation. See Figure 10.

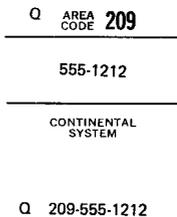


FIGURE 10. Station Number Cards

d. Test for proper operation.

**3.02 Installation of Jacks:** The 625A or NT-625QA4 jack provides a termination for station wire and the mounting cord as follows:

a. These jacks are intended for new installations of modular desk sets using a surface mounted jack. See Figure 11.

(1) The jacks are mounted on a baseboard or similar mounting surface with the jack opening facing downward or to the left or the right.

*NOTE: The plug entrances of the jacks should be positioned facing downward if at all possible or to the right or left, never facing upward, to prevent foreign matter and cleaning fluids from entering the jack.*

(2) Inside wiring is routed through the desired slot and connected to the appropriate terminals.

(3) The NT-625QA4 cover has knockouts to permit alternate wiring entries. The cover snaps over the jack base. To remove cover, insert a screwdriver in the slot on either side of the rear wire entry hole and twist screwdriver.

(4) The cover of the 625A (625C) is secured by a center screw.

b. The 625C is to convert existing 42A connecting blocks to accept plug-ended mounting cords. Remove the cover from the 42A block. Connect the leads from the 625C jack to the matching colors designated on the 42A block. Mount the jack on the connecting block with the screw provided. See Figure 12.

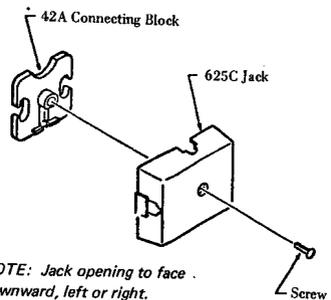


FIGURE 12. Conversion of 42A Connecting Block Using 625C Jack

c. The 625F (Figure 13) is intended for new or existing installations requiring flush-type connections. For an electrical box installation, use a 43A bracket (CSS No. 30-51-310-3) and a 19A faceplate (CSS No. 30-59-474-0). See Figure 14.

d. The 625F jack may be flush-mounted on a baseboard or wall panel as follows (Figure 15):

(1) Drill a 1 1/4-inch hole in the baseboard.

(2) Connect the inside wire to the R, G, Y, B terminals of the jack.

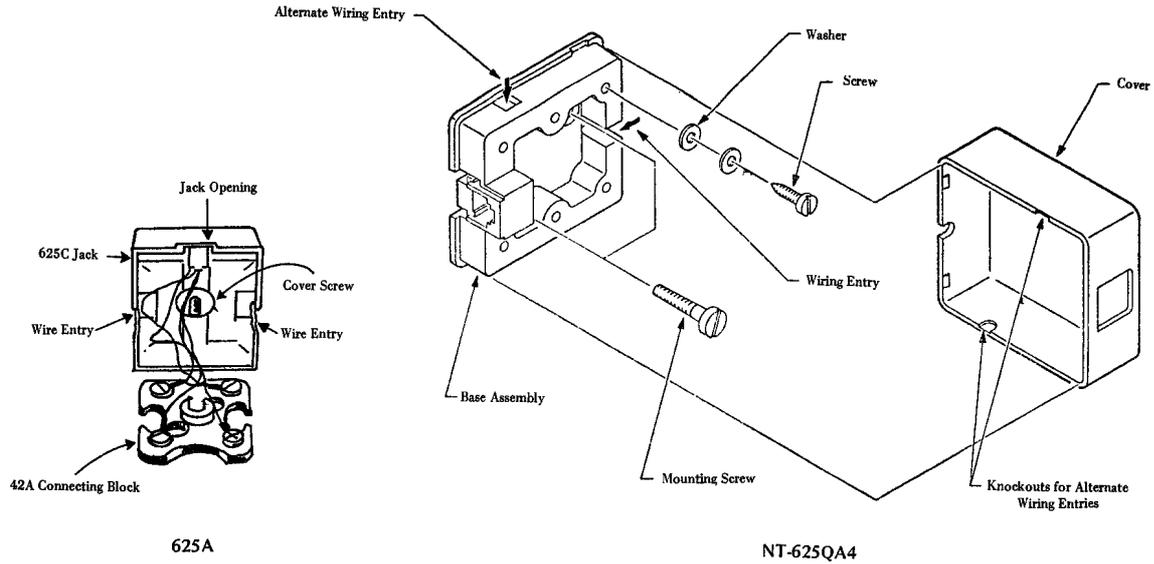
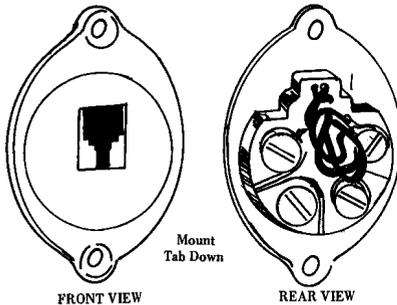


FIGURE 11. Baseboard Jacks



Flush-mounted jack for use in:

- a. Standard Electrical Box using 43A bracket and 19A faceplate.
- b. Prewired installation using 63A junction box and 16A faceplate.
- c. Flush-mounted to baseboard or wall using 1 1/4-inch hole.

FIGURE 13. 625F Miniature Jack

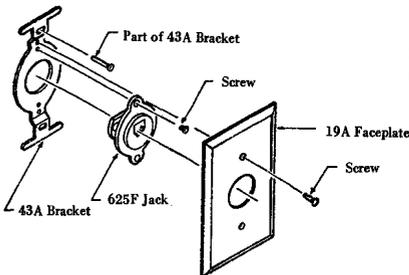


FIGURE 14. Installation of 625F in Flush Electrical Box

- (3) Insert the jack in the hole and fasten with 2 screws provided.
- e. For prewired installation, a 63A junction

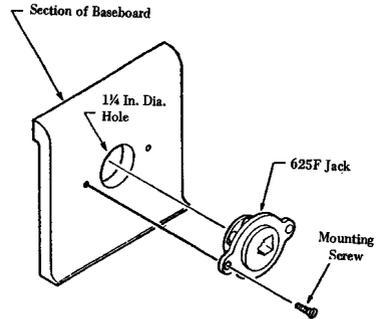


FIGURE 15. Baseboard Mounted 625F Miniature Jack

tion box (CSS No. 62-33-043-8), 60 type mounting ring (CSS No. 30-62-161-5), the 625 jack and a 16A faceplate (CSS No. 30-59-470-7) should be used. See Figure 16.

f. Outdoor installation can be accomplished using the 625F jack with a weatherproof cover assembly (CSS No. 30-59-122-8) installed in a weatherproof electrical box.

**3.03 630A Wall Telephone Jack:** This jack mounts on a standard electrical outlet box as described in the following steps:

- a. Route the inside wire from the outlet box through one of the holes in the jack.
- b. Fasten the jack to the outlet box with the two screws provided. See Table A.
- c. Connect the inside wire to the appropriate terminals. Plumb jack. Tighten screws. In some cases, such as when mounting hardware is underflush, the jack will distort if screws are too tight. In such cases, tighten screws until just tight enough to make the assembly tight on the wall once mounting plate is attached.

TABLE A. Fasteners for 630A Jack (Note 1)

To Fasten Jack To:	USE TWO (2) EACH OF FASTENERS INDICATED			
	Flat Head No. 6-32 Machine Screw 3/4-Inch	Hollow Wall Anchor or Toggle Bolts	Plastic Screw Anchor	No. 8-15 By 1 Inch Flat Head Tapping Screw Type AB (Note 2)
63A Bracket, Device Box, Plaster Ring	X			
Stucco or Plaster on Wood Lath				X
Plaster on Metal Lath, Paneling on Furring Strips, or Plaster-board on Studs		*		X
Hollow Masonry		X		
Solid Masonry			X	X

\* Alternate Fasteners

NOTES:

1. If jack is not securely fastened to the wall with the recommended number of fasteners, additional fasteners should be used.
2. Or other available screw of equivalent (or greater) size, and thread engagement.

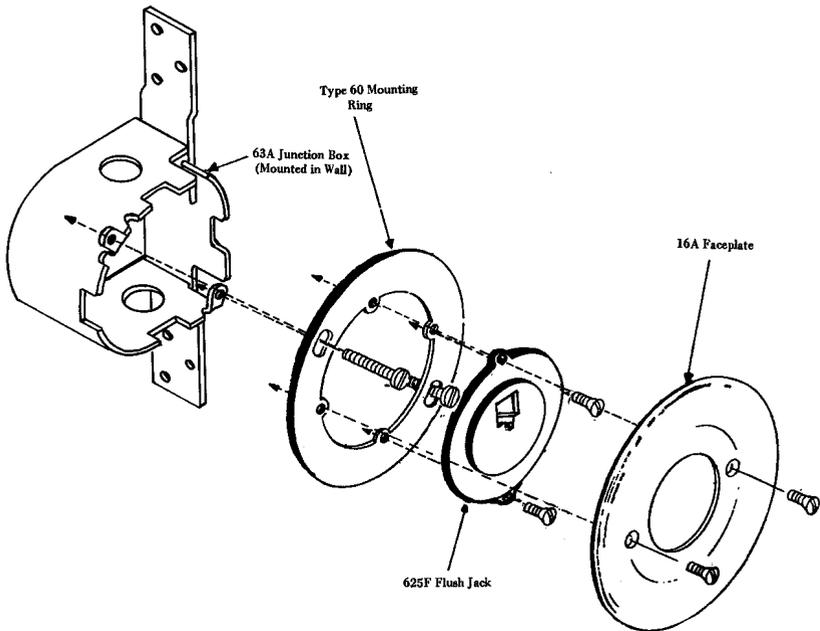


FIGURE 16. Installation of 625F Jack Using 63A Junction Box, 60 Ring and 16A Faceplate

d. Install the wall telephone mounting cover using the screws provided. See Figure 17.

3.04 If no outlet box is provided, the 630A can be mounted on a spacer (CSS No. 30-97-240-0). Provision is made in the spacer for entry of concealed wiring through the back or for surface wiring through the bottom. Install as follows:

a. Using the spacer as a template, drill

the required mounting holes.

b. Route the inside wire through the spacer and through one of the holes in the jack.

c. Align the jack with the spacer and fasten both to the wall using four screws (not provided).

d. Connect the wires to the appropriate terminals.

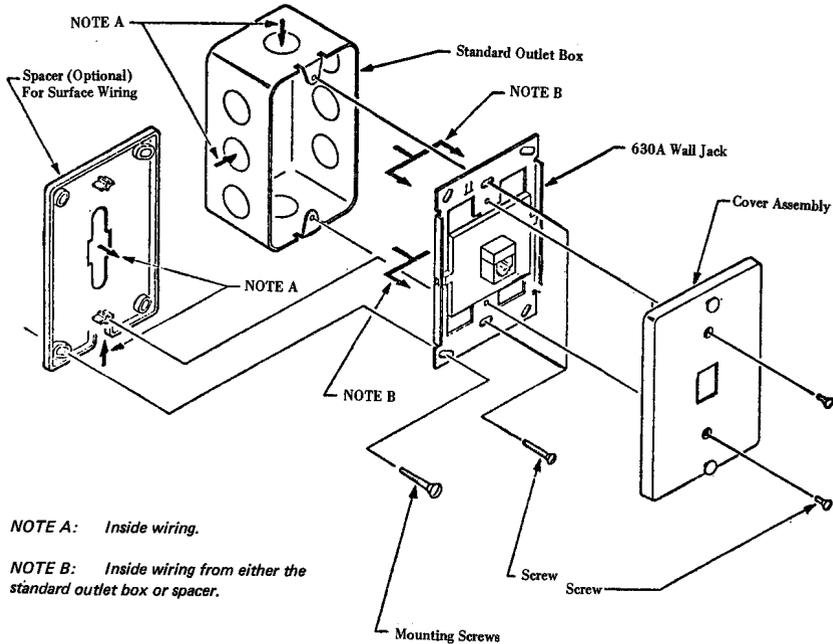


FIGURE 17. 630A Miniature Wall Jack

e. Install the cover plate using the two screws provided. See Figure 17.

*NOTE: Care must be taken when mounting this wall jack to allow sufficient space to mount the telephone set when locating the set adjacent to door frames or cupboards, above moldings or counter tops.*

**3.05 191B Backboard:** This backboard is used to cover an unpainted or damaged area surrounding the wall telephone jack. The backboard fits around the cover plate of the wall jack and is fastened to the wall using self-adhesive tape. See Figure 18.

**3.06 Installation of 228, 229 or 230 Wall Telephone Adapters:** The 228A adapter is used with 554 and 3554 type wall telephones. The 229A adapter is used with the 2554 type miniwall telephone. The 230A adapter is used with Trendline type wall telephones. Install all adapters as follows:

- a. Remove the telephone set housing.
- b. Route the wiring from the adapter through the hole in the back of the set. See Figures 19 and 20.
- c. Fasten the adapter to the baseplate using the screws supplied.

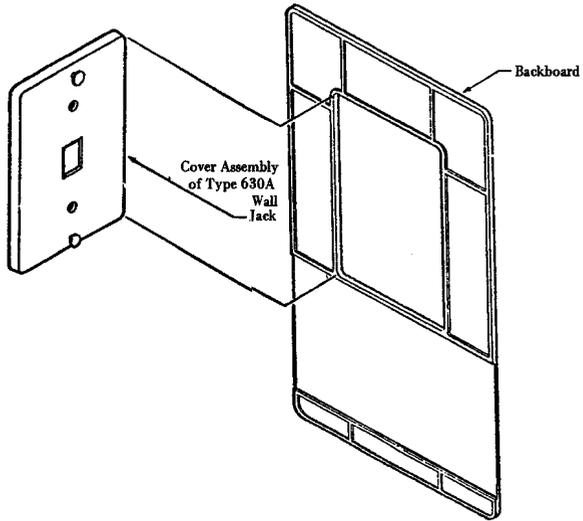


FIGURE 18. Backboard Installation Around a 630A Wall Jack

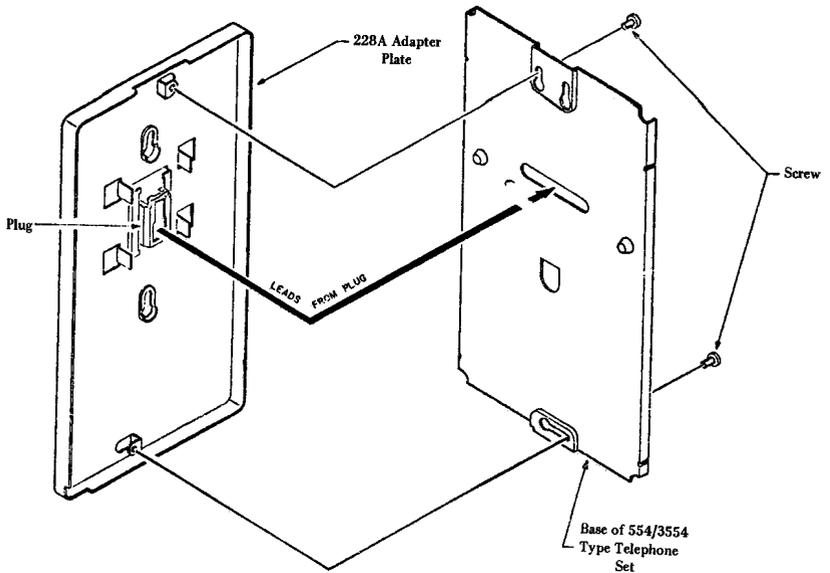


FIGURE 19. 228A Adapter Plate

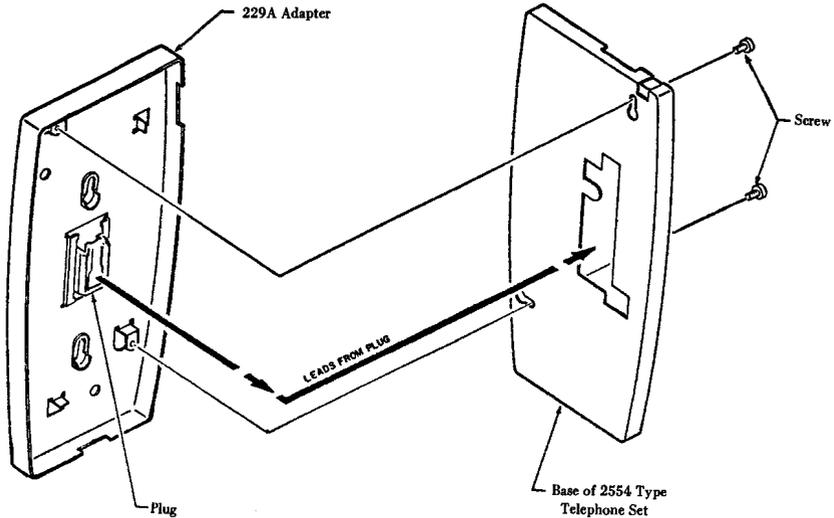


FIGURE 20. 229A Adapter Plate

d. Connect the adapter leads to the telephone as instructed in paragraph 4.

### 3.07 Installation of Adapter Equipped Wall Set Telephone:

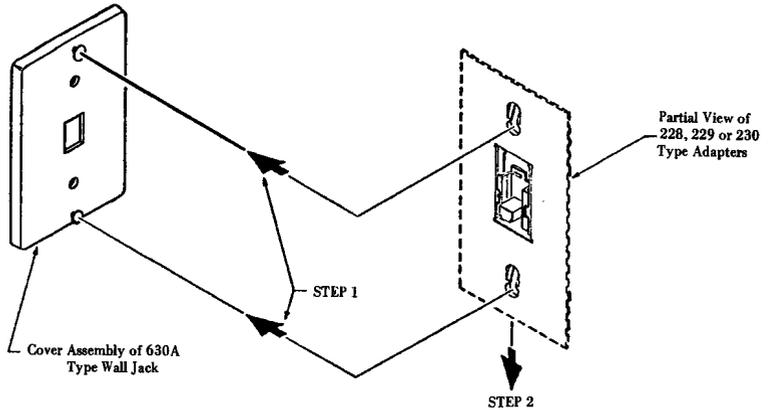
a. Move the adapter plug down as far as it will go toward the bottom of the telephone.

b. Align the plug with the jack and the

keyholed slots with the studs on the adapter.

c. Raise the telephone with plug slightly engaged and push toward wall to engage studs in corresponding slots of wall telephone adapter.

d. Pull set downward until firmly seated. See Figures 21 and 22.



**NOTES:**

1. *Begin with slight engagement of plug in receptacle.*
2. *Raise set (with plug slightly engaged) and push toward wall to engage studs in corresponding slots of wall set adapter. (The plug will slide up and down in the back of the wall set.)*
3. *Pull set downward until firmly seated.*

**FIGURE 21. Mounting Wall Set With Adapter on 230A Wall Jack**

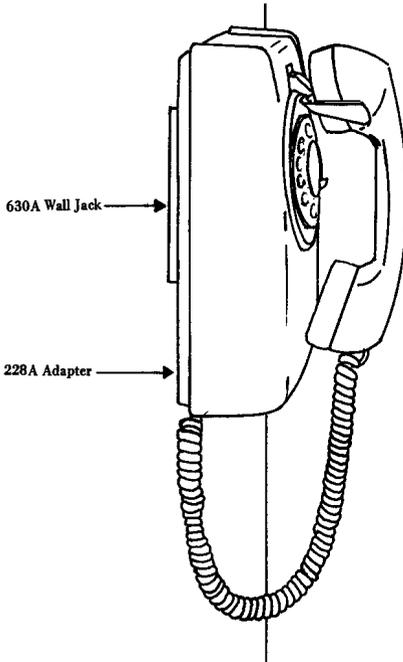


FIGURE 22. 554 Wall Telephone Mounted on 630A Wall Jack

4. CONNECTION OF MODULAR EQUIPMENT

the same manner to be compatible with all modular telephones. Connect as shown in Table B.

4.01 All modular equipment must be wired in

TABLE B. Modular Jack Connections

INSIDE WIRE					CONNECTING BLOCK	
ONE-LINE SERVICE			TWO-LINE SERVICE	WIRE OR LEAD COLOR	TERMINAL	
NO DIAL LIGHT	DIAL LIGHT	1A1, 1A2 KTS			625-TYPE	630A4
Tip	Tip	Tip	Line 1 (T)	Green	G	T
Ring	Ring	Ring	Line 1 (R)	Red	R	R
	TRNSF	A	Line 2 (T)	Black	B	Aux
Ground*	TRNSF	A1	Line 2 (R)	Yellow	Y	Ground

\*Supply ground for all one-line installations