

CONNECTING BLOCKS, JACKS, AND PLUGS

1.00 INTRODUCTION

This section covers the identification, installation, fasteners, and connections for connecting blocks and jacks, and the termination of wire and cable thereon. It also includes the identification of plugs used with jacks.

2.00 GENERAL

Termination and dressing of cord conductors on connecting blocks and in plugs are covered in the C series of Bell System Practices governing the installation of telephone sets.

3.00 CONNECTING BLOCKS—IDENTIFICATION AND USE

3.01 Connecting blocks are used for making connections between wires and/or cables and between wires or cables and conductors of telephone set cords.

3.02 Table A provides information on the selection, identification, and use of connecting blocks.

4.00 CONNECTING BLOCKS—TERMINATIONS AND CONNECTIONS

4.01 Terminations of cables, wires, and cords are shown in Fig. 1.

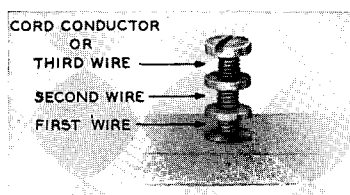


FIG. 1—CONNECTING BLOCKS—TERMINATIONS

TABLE A

Selection, Identification, and Use of Connecting Blocks

Principal Use	Type of Mounting	No. of Conductors	Type	Cover Color	Blocks Shown in Figs.	Furnished with	Associated Equipment (Order if Required)		
							Covers	Backboards	Bracket
Keyless (Regular) Telephone Sets and Bridging of Wire	Flush	4	47B	Ivory (-4) Brown (-9)	2, 3, 4, and 5				43A
	Nonflush	4	42A	Ivory (-4) Brown (-9)	7	Cover		168A	
Key Telephone Sets and Bridging of Wire and Cables—Inside Wiring and Lead	Nonflush	10	1044A	Ivory (-4) Brown (-9)	8	Cover		168A	
		10	44A	Ivory (-4) Brown (-9)	Similar to Fig. 9		101A	168A	
		20	Two 44A Blocks	Ivory (-4) Brown (-9)	Similar to Fig. 9		101C	168B	
		30	Three 44A Blocks	Ivory (-4) Brown (-9)	Similar to Fig. 9		101C	168B	
		40	Four 44A Blocks	Ivory (-4) Brown (-9)	9		101D	168C	
		50	Five 44A Blocks	Ivory (-4) Brown (-9)	Similar to Fig. 9		Two 101C Covers	Two 168B Backboards	
Terminations At Remote Pick-up Points and Bridging of Wire	Nonflush	2	11A	No Cover	6			168A	
			11B	Black	6	Cover		168A	
			11C	Black	6	Insulated Cover		168A	
		3	12C 12E	No Cover	6	Cord Stay Hook		168A	
			12D 12F	Black	6	Cover Cord Stay Hook		168A	

4.02 Connections are made at connecting blocks used with 4- and 6-button key telephone sets as follows:

- For Key Telephone Sets Used With 1A and 1A1 Key Telephone Systems, see the C series of Bell System Practices governing the connections of 1A and 1A1 key telephone systems.
- For key telephone sets used with 755A PBXs, see the C series of Bell System Practices governing connections of key telephone sets at 755A PBXs.

4.03 Connections are made at connecting blocks used with turn button telephone sets, keyless telephone sets, and for bridging cables or wires as follows:

- For 11-type connecting block, mounted with arrows horizontal, connect green conductor to top terminal and red conductor to bottom terminal (see Fig. 6).
- For 12-type connecting block, mounted with arrows horizontal, connect green conductor, red conductor, and yellow conductor to top terminal, middle terminal, and bottom terminal, respectively (see Fig. 6).
- For all 4-conductor connecting blocks, connections should be as indicated by the color designations stamped adjacent to the terminals. The red wire should be connected to the terminal designation R, etc.
- The 44A and 47B connecting blocks are used for connecting five conductors as indicated in Table B.

TABLE B

Station Wire		Terminal Designations for Connecting Blocks	
Type	Conductor Color	44A	47B
Triple	Red	1	Red
	Green	2	Green
	Yellow	4	*
Paired	Red	5	Yellow
	Green	6	Black

*Designation not shown. Use screw which supports cord stay hook. Add necessary washers.

- The 44A connecting blocks are used for connecting a maximum of ten conductors as indicated in Table C.

TABLE C

C or D Inside Wiring Cable Conductor Color	Connecting Block Terminal Number
Blue	1
White	2
Orange	4
White	5
Green	6
White	7
Brown	9
White	10
Slate	3
White	8

5.00 CONNECTING BLOCKS — FLUSH-TYPE INSTALLATIONS

5.01 The 47B connecting blocks may be flush-mounted in outlet boxes or fittings of under-floor duct systems. They may also be mounted in baseboards and wall panels. Figs. 2 through 5 show these mounting arrangements.

5.02 In outlet box, mount connecting block as shown in Fig. 2.

1. Mount block on 43A bracket, using screws furnished with bracket.
2. Connect station wire to block, and dress as shown. Bring cord through block and connect.
3. Mount block-equipped bracket in outlet box, using screws furnished with bracket.
4. Mount coverplate, using screws furnished with coverplate.
5. Coverplate is normally furnished by customer.

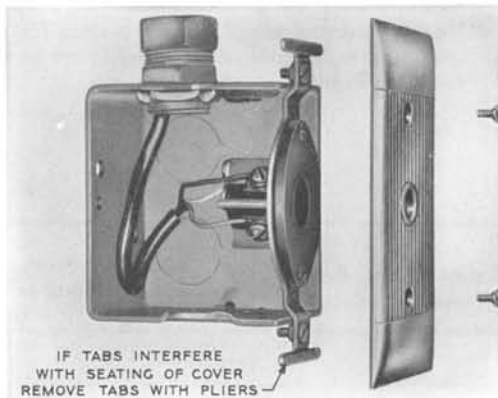


FIG. 2—47B CONNECTING BLOCK ON 43A BRACKET MOUNTED IN OUTLET BOX

5.03 In typical customer-provided underfloor duct system fittings, the connecting block may be mounted as shown in Fig. 3, Example A.

- Mount block on 43A bracket.
- Connect station wire to block.
- Bring cord through block and connect.
- Mount block-equipped 43A mounting bracket in outlet box.
- Mount coverplate (part of fitting) with special screws furnished with fitting.

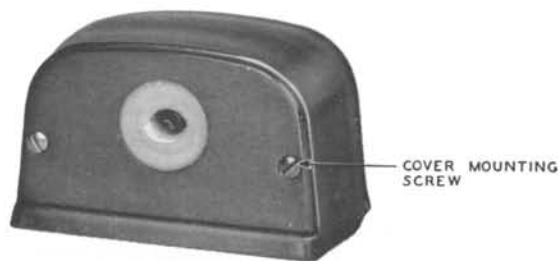
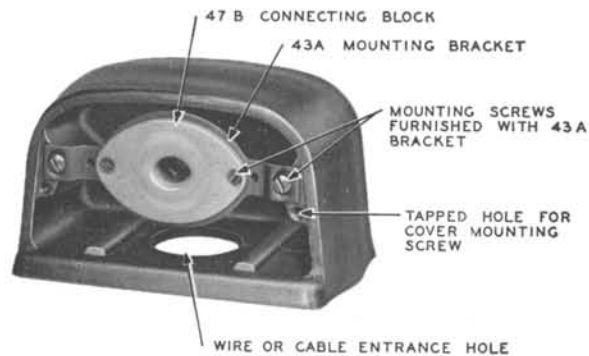


FIG. 3—EXAMPLE A—47B CONNECTING BLOCK MOUNTED IN FITTINGS OF UNDERFLOOR DUCT SYSTEM

5.04 In typical customer-provided underfloor duct system fittings, the connecting block may be mounted as shown in Fig. 4, Example B.

- Mount block on 43A bracket.
- Connect station wire to block.
- Bring cord through block and connect.
- Fasten the coverplate (part of fitting) and the block-equipped 43A mounting bracket, using the two screws furnished with fitting.

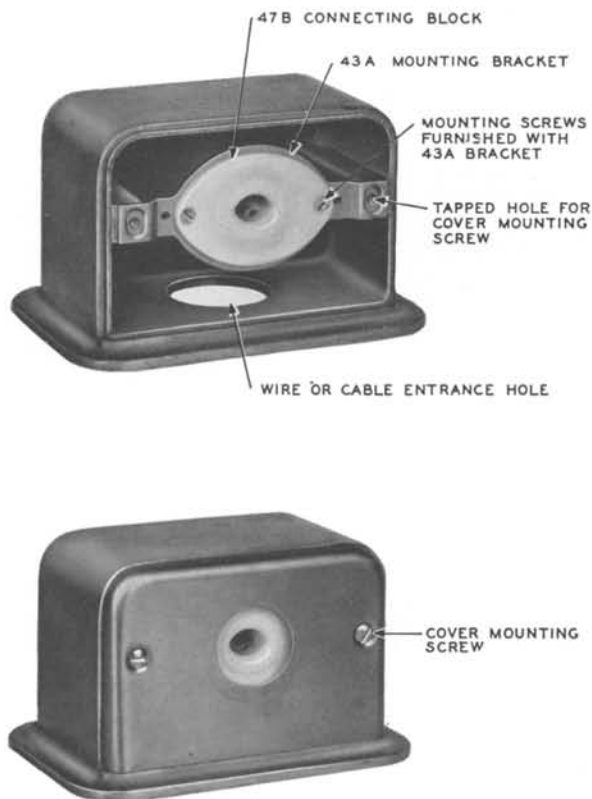


FIG 4—EXAMPLE B—47B CONNECTING BLOCK MOUNTED IN FITTINGS OF UNDERFLOOR DUCT SYSTEM

5.05 In baseboard or wall panel, mount connecting block as shown in Fig. 5.

1. Place front side of block against baseboard or other mounting surface at desired location.
2. Place pencil through hole in center of block and mark center of hole.
3. Drill a lead hole at the point marked.
4. Drill a hole for block with a 1-1/4 inch station bit or approved equivalent, using lead hole.
5. Place block in hole and mark locations for block-mounting screws.
6. Drill mounting holes.
7. Connect station wire to block.
8. Bring cord through block and connect.
9. Fasten block, using screws furnished with block.

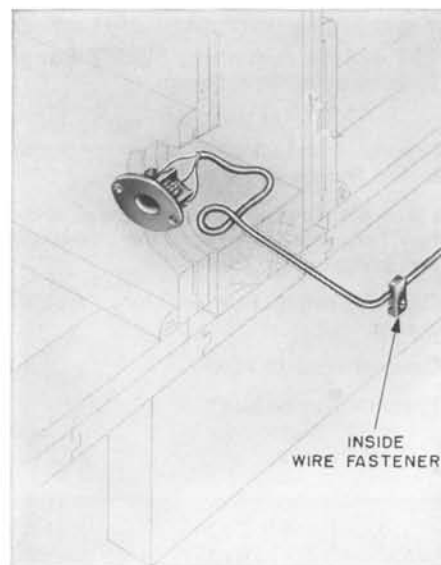


FIG. 5—47B CONNECTING BLOCK MOUNTED IN BASEBOARD

6.00 CONNECTING BLOCKS — NONFLUSH-TYPE INSTALLATIONS

6.01 Connecting blocks of types 11, 12, 42, 44, and 1044 may be mounted on all types of surfaces. Backboards should be used only when mounting on damp walls and where the use of a backboard will facilitate the installation.

6.02 The 11- and 12-type connecting blocks (shown in Fig. 6) are installed as follows:

1. Connect separate conductors of wires approximately 4 inches from the end.
2. Lay conductors parallel to each other.
3. Place block over conductors and secure with one fastener for 11-type and two fasteners for 12-type connecting blocks. Fasteners for various surfaces are indicated in Table D.
4. Connect conductors to block, and dress as shown.
5. Snap cover on block.

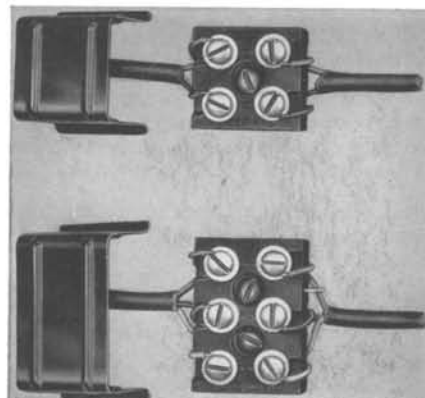


FIG. 6—INSTALLATION OF 11- AND 12-TYPE CONNECTING BLOCKS

6.03 The 42-type connecting block (shown in Fig. 7) is installed as follows:

1. Separate conductors of wires approximately 4 inches from end.
2. Place block over conductors and secure with two fasteners. Fasteners for various surfaces are indicated in Table D.
3. Connect conductors to block, and dress as shown.
4. Connect cord to block.
5. Fasten cover to block.

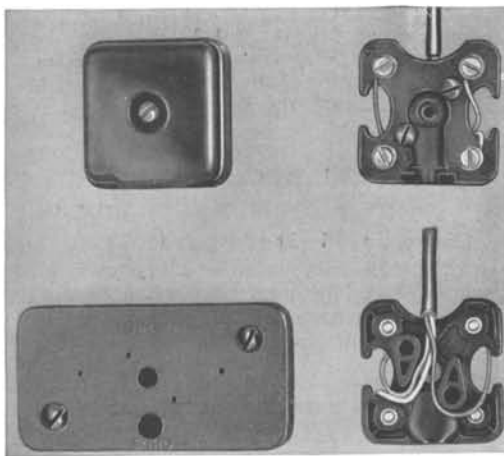


FIG. 7—42-TYPE CONNECTING BLOCK AND 168A BACKBOARD

6.04 The 44- and 1044-type connecting blocks are shown in Figs. 8 and 9. They are installed as follows:

- When backboard is used, mount backboard with fasteners indicated in Table D.
- Backboards accommodating three and four blocks require four fasteners, while backboards accommodating one block require only two fasteners.
- Fasten block(s) to backboard or other mounting surface with fasteners of the type shown in Table D.
- Connect cable or wire conductors to block(s), and dress as shown.
- Connect cord to block.
- Fasten cover to block(s), using screw furnished with it.

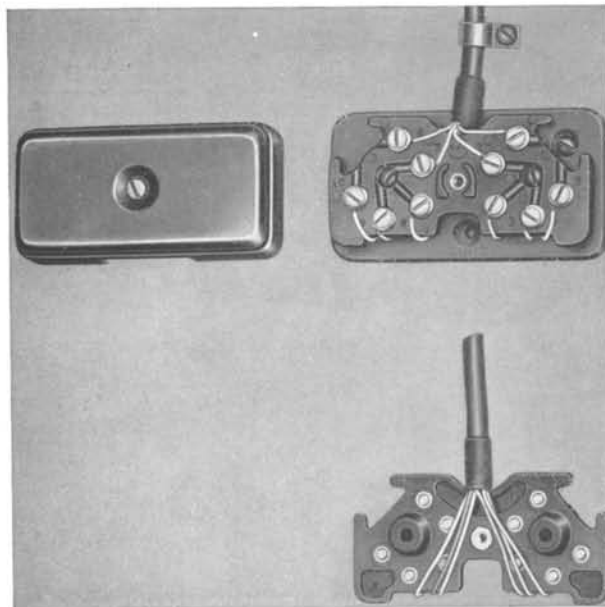


FIG. 8—1044A CONNECTING BLOCK WITH 168A BACKBOARD

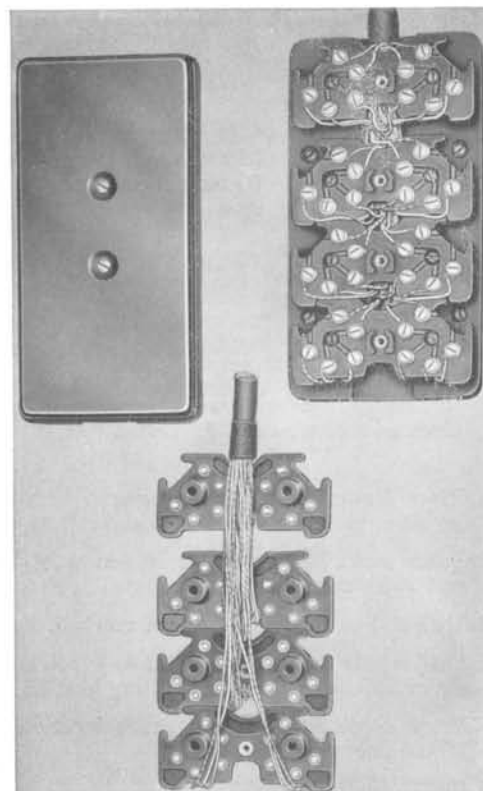


FIG. 9—FOUR 44A CONNECTING BLOCKS MOUNTED ON A 168C BACKBOARD AND EQUIPPED WITH A 101D COVER

TABLE D
Fasteners for Connecting Blocks and Backboards

Equipment	Surface	Fasteners
Connecting Block	Hardwood	3/4 in., No. 8 RH Blued Wood Screws.
	Backboard	5/8 in., No. 8 RH Blued Wood Screws.
	All Wood (Except Above)	1 in., No. 8 RH Blued Wood Screws.
	Lath and Plaster	2 in., No. 8 RH Blued Wood Screws.
	Metal (Desk or Paneling)	5/8 in., No. 8 RH Self-tapping Screws.
Backboard	Masonry — Plastered	2 in., No. 8 RH Blued Wood Screws in 6-8 x 1-1/2 in. Screw Anchors.
	Masonry — Unfinished	1-1/4 in., No. 8 RH Blued Wood Screws in 6-8 x 3/4 in. Screw Anchors.
	Hollow Tile and Similar Surfaces	1/8 in. x 4 in., RS Toggle Bolts.
	Metal Desks (Where More than One Block Is to Be Mounted)	5/8 in., No. RH Self-tapping Screws.

7.00 JACK AND PLUG SYSTEMS — REQUIREMENTS

7.01 All telephone instruments used with jack and plug systems may be portable. However, at least one ringer must be permanently connected to the line.

7.02 Hand telephone sets (those requiring a subset) and telephone sets should not be used together in the same jack and plug system.

7.03 Jack mounting should be uniform so that plug insertion will be the same throughout the customer's premises.

8.00 JACKS AND PLUGS — IDENTIFICATION AND USE

8.01 Jacks and plugs permit one or more telephone sets to be used at one or more locations. They also permit the rapid disconnection and reconnection of telephone service to ships, boats, trains, etc.

8.02 Table E provides information on the selection, identification, and use of jacks.

TABLE E

Jacks

Principal Use	Location	Type of Mounting		No. of Conductors	Type	Color	Jack Shown in Fig.	Furnished with	
								Quantity	Equipment
Portable Telephone Sets	Inside Buildings	Flush	Baseboard	4	493A	Brown (-9) Ivory (-4)	16	2	Self-tapping Screws
			Outlet Box	4	497A	Brown (-9) Ivory (-4)	14	1	493A Jack
								1	43-Type Bracket
								1	Coverplate
								4	Metal Screws
								1	Flush Coverplate
		Nonflush	Baseboard or Outlet Box	8	391A	Brown (-9) Ivory (-4)	15		Mounting Screws
									Washers
				4	404B	Brown (-9) Ivory (-4)	19	2	Wood Screws
				8	392A	Brown (-9) Ivory (-4)	20	1	Metal Cover
	Patios, Terraces, Breezeways, Porches	Nonflush		4	KS-16151, List 1	Aluminum	23	1	493A Jack (Modified) Aluminum Housing with Hinged Cover
				4	KS-16151, List 2	Aluminum	23	1	Aluminum Housing with Hinged Cover
Fixed Locations for Ships, Boats, Trains, etc	Outdoors at Ships, Boats, Wharves, Trains, etc	Flush		3	KS-8420	Brass	18	1	Cover
		Nonflush		3	KS-8421	Brass	24	1	Cover

8.03 Table F provides information on the selection, identification and use of plugs.

8.04 The 283B and 274A plugs are shown in Figs. 10 and 11, respectively.

TABLE F
Plugs

Principal Use	No. of Conductors	Type	Color	Plug Shown in Fig.
Portable Telephone Sets	4	283B	Ivory (-4) Brown (-9)	10
	8	274A	Ivory (-4) Brown (-9)	11
Fixed Locations for Ships, Boats, Trains, etc	3	KS-8419	Brass	13

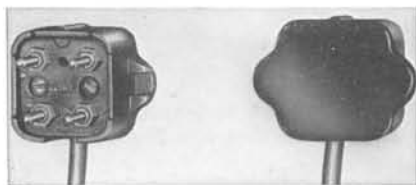


FIG. 10—283B PLUG



FIG. 11—274A PLUG

9.00 JACKS AND PLUGS—TERMINATIONS AND CONNECTIONS

9.01 Only one wire or cable conductor should be terminated on screw terminals of jacks, due to absence of washers.

9.02 JACKS FOR INDOORS AND PATIOS—CONNECTIONS

- For all types of 4-conductor jacks, connections should be as indicated by the color designations stamped adjacent to the terminals. The red conductor should be connected to the terminal designated R, etc. **Where 404-type jacks are used with 304-type telephone sets at tip-party stations** on 2-party selective, dial message-rate lines and at tip-party automatic ticketing stations, terminate the green conductor of station wiring on black terminal instead of on green terminal. A corresponding change is required in the associated plugs.

- For all types of 8-conductor jacks, see Table G.

TABLE G

Connections for 8-Conductor Jacks

Inside Wire		C or D Inside Wiring Cable	8-Conductor Jacks Terminal Designations
1st Quad	Red	Blue	Red
	Green	White	Green
	Yellow	Orange	Yellow
	Black	White	Black
2nd Quad	Red	Green	White
	Green	White	Red-Red
	Yellow	Brown	Yellow-Yellow
	Black	White	Black-Black

9.03 JACKS AND PLUGS FOR SHIPS, BOATS, AND TRAINS—CONNECTIONS (See Figs. 12 and 13.)

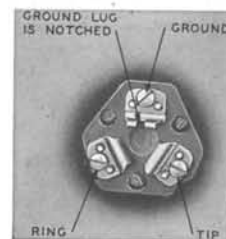


FIG. 12—CONNECTIONS FOR KS-8420 AND KS-8421 JACKS



FIG. 13—KS-8419 PLUG

10.00 FLUSH-TYPE JACKS — INSTALLATION

10.01 The 391A and 497A jacks may be flush-mounted in outlet boxes or in baseboards and panels. Figs. 14 through 17 show these mounting arrangements.

10.02 The 497A jack in outlet box (shown in Fig. 14) is mounted as follows:

1. Mount jack on 43A bracket with screws furnished.
2. Connect station wire to block, and dress as shown in Fig. 14.
3. Mount block-equipped bracket in outlet box with screws furnished.
4. Mount coverplate with screws furnished.

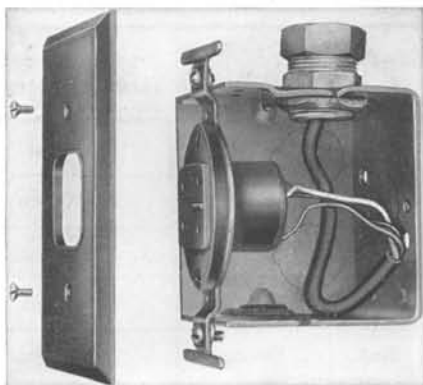


FIG. 14—497A JACK MOUNTED IN OUTLET BOX

10.03 The 391A jack in outlet box (shown in Fig. 15) is mounted as follows:

1. Connect station wire to jack, and dress as shown in Fig. 15.
2. Mount jack in outlet box, using screws furnished with jack.
3. Fasten coverplate on jack, using screws furnished with jack.

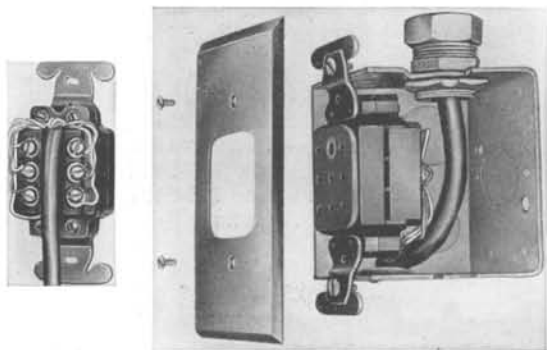
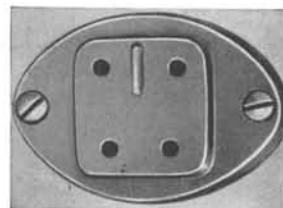


FIG. 15—391A JACK AND 391A JACK MOUNTED IN OUTLET BOX

10.04 The 493A jack is installed in baseboard or wall panel, as shown in Fig. 16, and as follows:

1. Place front side of jack against baseboard or other mounting surface at desired location.
2. Mark outline of jack on surface.
3. Drill a lead hole in the center of the marked jack outline.
4. Drill a hole for jack with a 1-1/4 inch station bit or equivalent, using lead hole.
5. Place jack in hole and mark locations for mounting screws.
6. Drill mounting holes.
7. Connect station wire to jack.
8. Fasten jack, using screws furnished with jack.

FIG. 16—493A JACK MOUNTED IN BASEBOARD



10.05 The 391A jack is installed in baseboard or wall panel, as shown in Fig. 17, and as follows:

1. Place coverplate against baseboard or other mounting surface at desired location.
2. Insert the point of a pencil through the coverplate screw holes and mark the centers of these holes on the supporting surface.
3. Measure from center of holes and draw rectangle as shown in Fig. 17.
4. Bore holes within the corners of the rectangle and remove material.
5. Connect station wire to jack.
6. Fasten jack to mounting surface with two 1/2 inch, FH bright wood screws.
7. Fasten coverplate with screws furnished with jack.

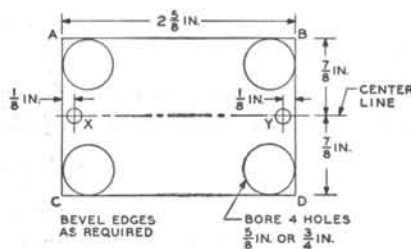


FIG. 17—METHOD OF PREPARING RECESS HOLE FOR 391A JACK

10.06 Install the KS-8420 jack at outdoor locations (for ships, boats, trains, etc), as shown in Fig. 18, and as follows:

1. Arrange for a 2-11/16 inch hole at desired location.
2. Temporarily insert jack in hole and mark fastener holes.
3. Remove jack and drill fastener holes.
4. Connect wire as shown in Fig. 12.
5. Secure jack to mounting surface with four No. 8 RH brass wood screws or No. 8 RH brass machine screws.

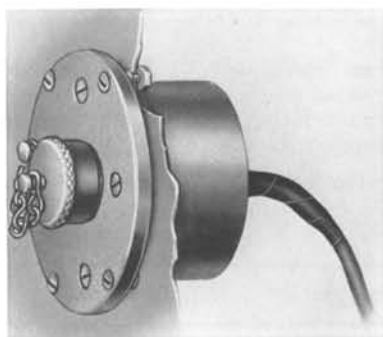


FIG. 18—INSTALLATION OF KS-8420 JACK

11.00 NONFLUSH-TYPE JACKS — INSTALLATION

11.01 Install 404B jack, as shown in Fig. 19, and as follows:

1. Connect station wire to jack, and dress as shown in Fig. 19.
2. Fasten jack to baseboard or other mounting surface, using screws furnished with jack.

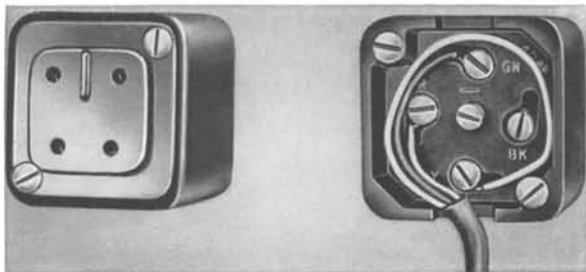


FIG. 19—INSTALLATION OF 404B JACK

11.02 Install 392A jack, as shown in Fig. 20, and as follows:

1. Connect station wire to jack, and dress as shown in Fig. 20.
2. Fasten jack to baseboard or other mounting surface.

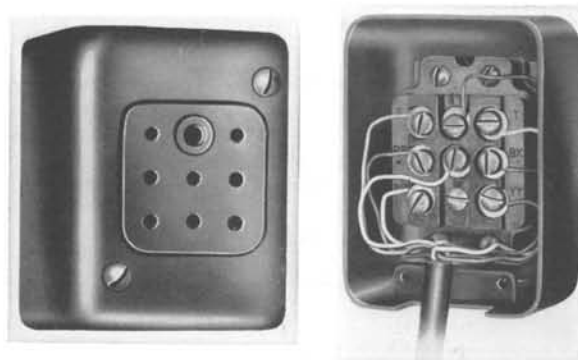


FIG. 20—INSTALLATION OF 392A JACK

11.03 The 493A jack may be modified to fit into the KS-16151, List 2 outdoor jack, as shown in Fig. 21, and as follows:

1. Mark ends of jack as shown in Fig. 21.
2. Remove ends with hack saw.

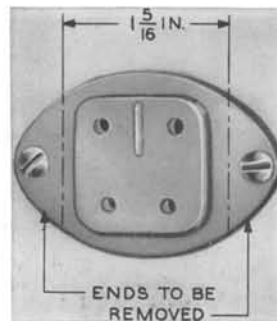


FIG. 21—MODIFICATION OF 493A JACK TO FIT INTO KS-16151, LIST 2 JACK

11.04 Assemble and install the KS-16151, List 1 jack as shown in Figs. 22, 23, and 24, Tables H and J, and as follows:

- When used without conduit, turn jack so that wire entrance hole faces downward.
- Fasten jack housing with two fasteners.

TABLE H

Surface	Fasteners
Wood	1-1/4 in., No. 8 RH Galvanized Screws.
Masonry	1-1/2 in., No. 6-8 Screw Anchor and 2 in., No. 8 RH Galvanized Screws.
Hollow Tile	3/16 in. Toggle Bolts.

- Run station wire through gland nut, friction washer, grommet, and through entrance hole into housing.
- Connect wire to jack.
- Assemble as shown, with hinge of cover at top of jack.
- If the cover spring should become inoperative, remove the bottom locking screw and replace the entire cover.

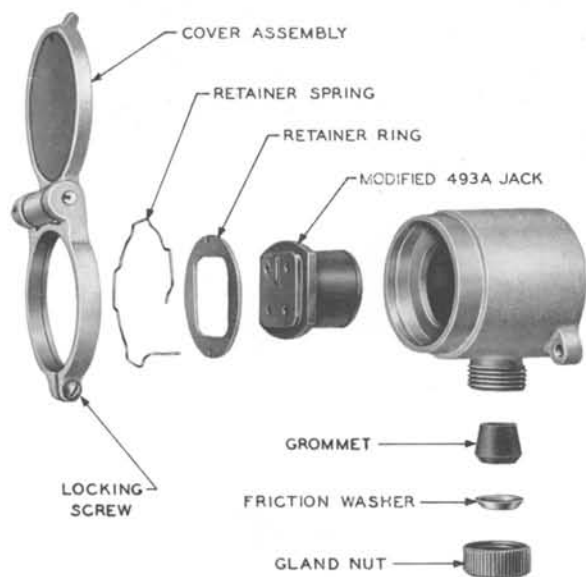


FIG. 22—ASSEMBLY OF KS-16151, LIST 1 JACK

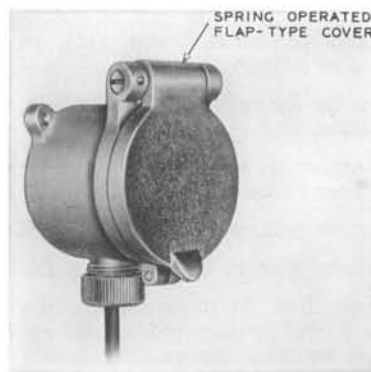


FIG. 23—TYPICAL INSTALLATION OF KS-16151 JACK INSTALLED WITHOUT CONDUIT

- When used with 1/2-inch conduit, screw threaded portion of jack housing into 1/2-inch conduit fitting. Screw other end of conduit fitting on conduit.
- Fasten jack housing with two fasteners.

TABLE J

Surface	Fasteners
Wood	1-1/4 in., No. 8 RH Galvanized Screws.
Masonry	1-1/2 in., No. 6-8 Screw Anchor and 2 in., No. 8 RH Galvanized Screws.
Hollow Tile	3/16 in. Toggle Bolts.

- Pull wire through conduit into fitting.
- Connect wire to jack.
- Assemble as shown, with hinge of cover at top of jack.
- If the cover spring should become inoperative, remove the bottom locking screw and replace the entire cover.

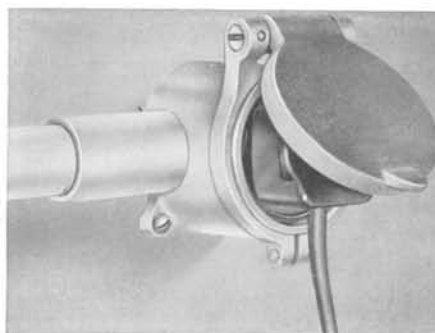


FIG. 24—TYPICAL INSTALLATION OF KS-16151 JACK INSTALLED ON 1/2-INCH CONDUIT

11.05 Install the KS-8421 jack, as shown in Fig. 25, and as follows:

1. Mount jack as shown in Fig. 25. Connect wire to jack.
2. Fasten cover, using screws furnished with jack.

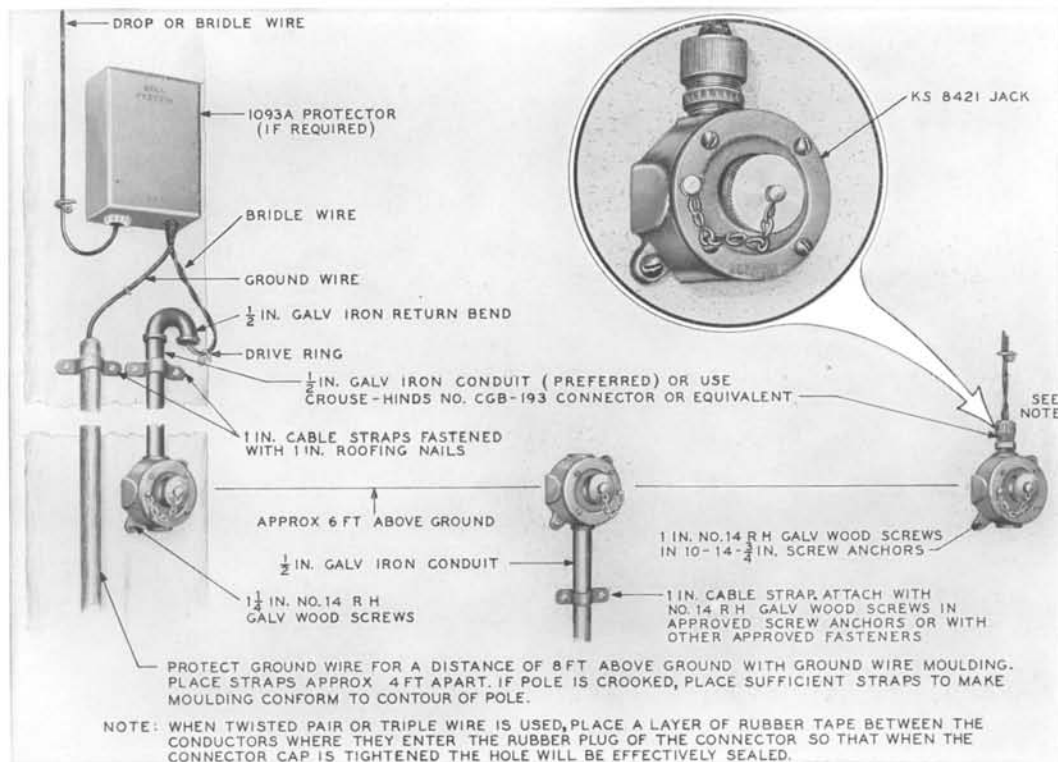


FIG. 25—TYPICAL INSTALLATION OF KS-8421 JACK