5-TYPE CLOSURES
DESCRIPTION AND INSTALLATION

CONTENTS PAGE

1. GENERAL

1.01 This section covers the description and installation of the 5-type closure used for pole or wall mounted installations.

1.02 This section is reissued to include wiring information on 57-type connecting block in the 5A3 and 5B3 closures.

1.03 Information on the manufacture discontinued 5A1, 5B1, 5A2-200, 5B2-300, and 5B5 closures is contained in Part 7.

1.04 Wiring arrangments for the 5-type closures used as control and access points are outlined in Section 642-220-201.

2. DESCRIPTION

5A3 and 5B3 CLOSURES

2.01 The 5A3 and 5B3 closures (Fig. 1) consist of a weatherproof metal box having a hinged cover and mounting bracket for either pole or wall mounting and provides the following features.

(a) A 196A adapter (Fig. 2) which consists of a sealing gland that will accommodate PIC cables up to 1.6 inches in diameter.

(b) A blank end plate to enclose either the top or bottom of the closure.

(c) Locking mechanism for securing the cover in the open position while a craftsman is working in the closure.

(d) Mounting bracket P-21E157 for mounting closure to either pole or wall.

2.02 Table A lists other characteristics of the 5A3 and 5B3 closures.

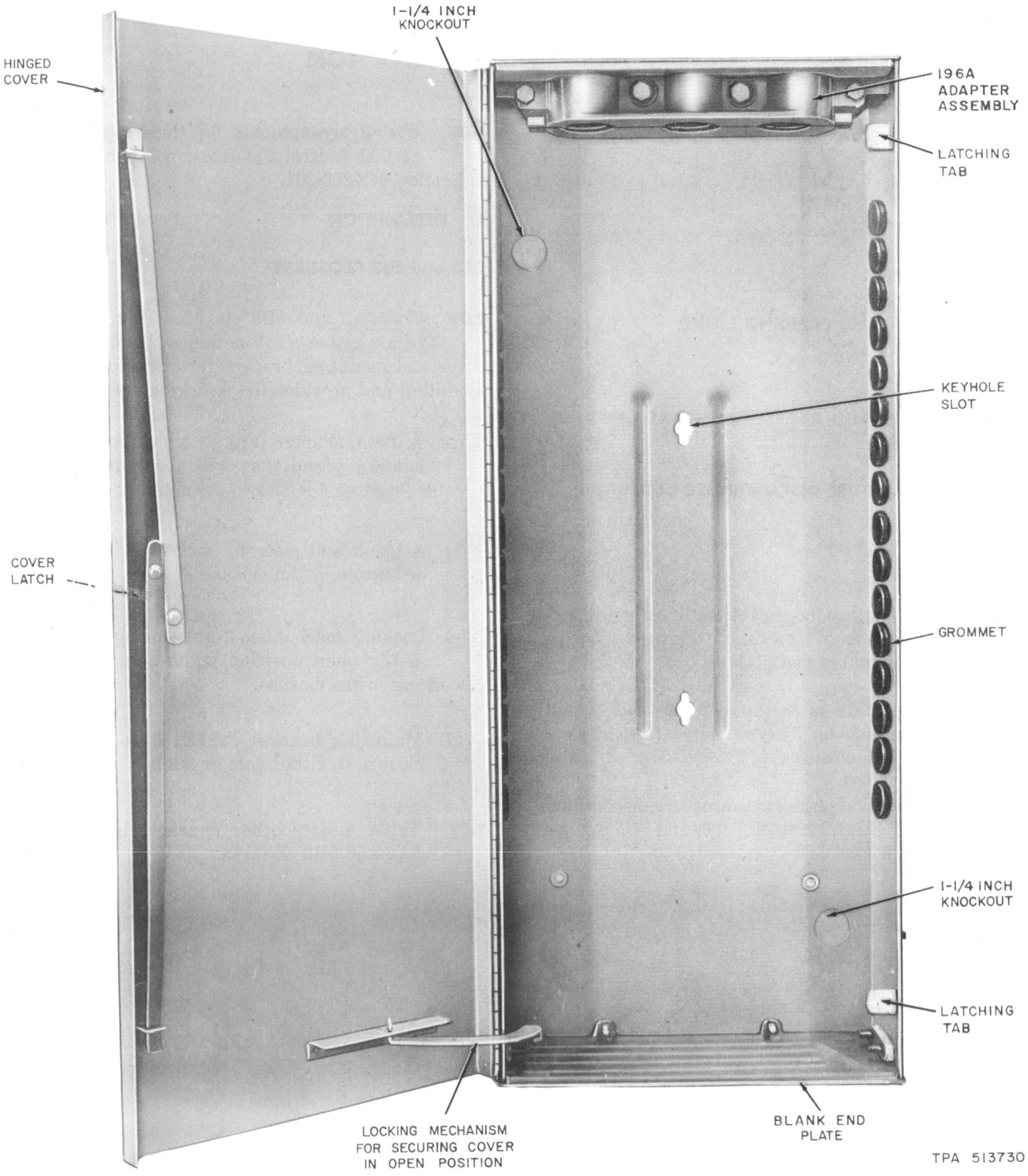

Fig. 1—5B3 Closure

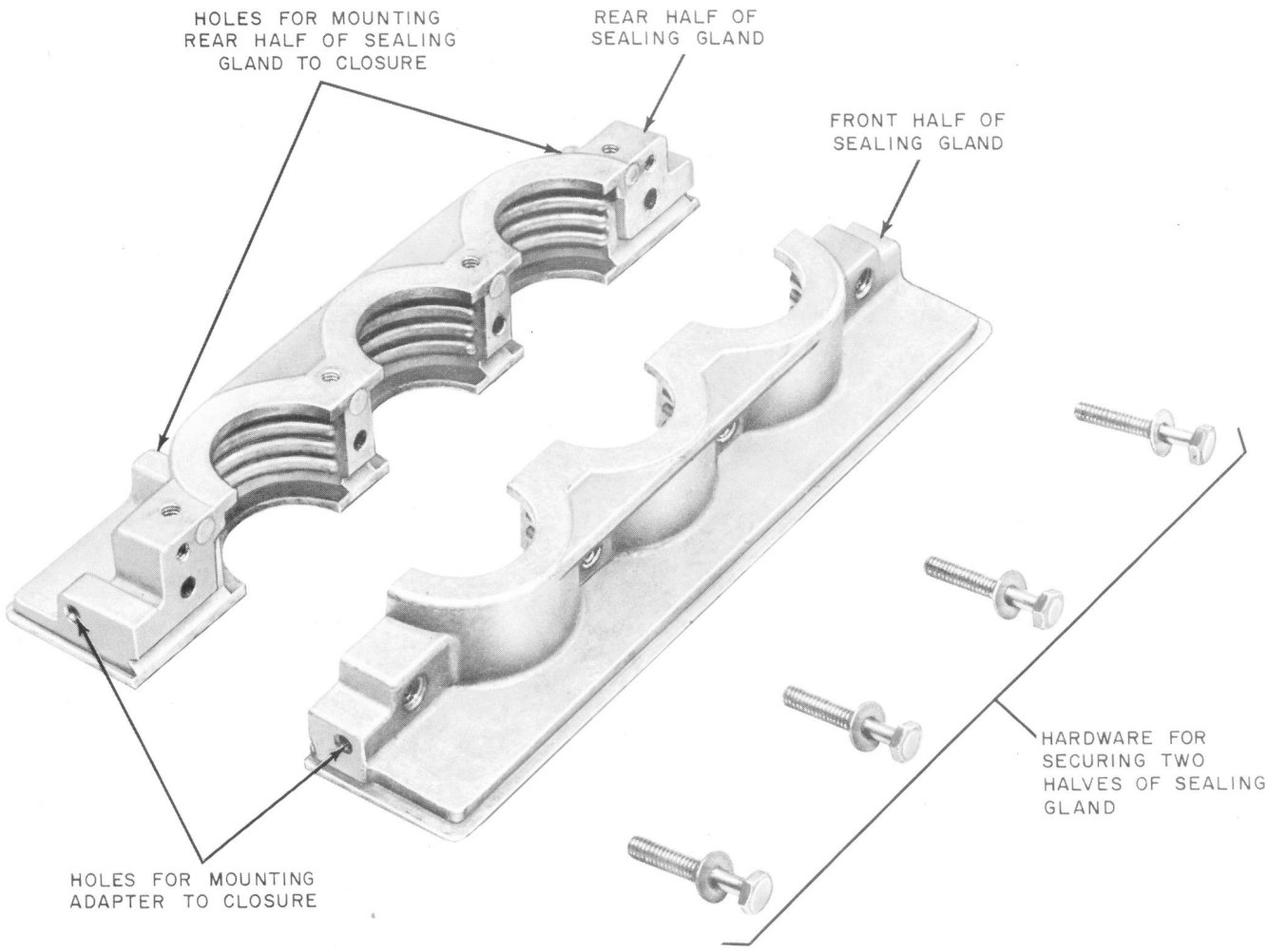

Fig. 2—196A Adapter

TABLE A

CHARACTERISTICS OF 5A3 AND 5B3 CLOSURES

CLOSURE	DIMENSIONS (INCHES)			GROMMETS ON EACH SIDE	QUANTITY AND TYPE BLOCKS
	HEIGHT	WIDTH	DEPTH		
5A3	22	10-1/2	4	10	(2) 57A2-10, 57A2B-10, or 57A3A-10
5B3	27	10-1/2	4	16	(2) 57A2-16, 57A2B-16, or 57A3A-16

5A4-200 and 5B4-300 CLOSURES

2.03 The 5A4-200 and 5B4-300 closures (Fig. 3) consist of weatherproof metal box having a hinged cover and mounting bracket for either pole or wall mounting and provides the following features:

(a) A backboard equipped with brackets and distributing rings for use as control or access points in dedicated plant.

(b) A blank end plate to enclose either the top or bottom of the closure.

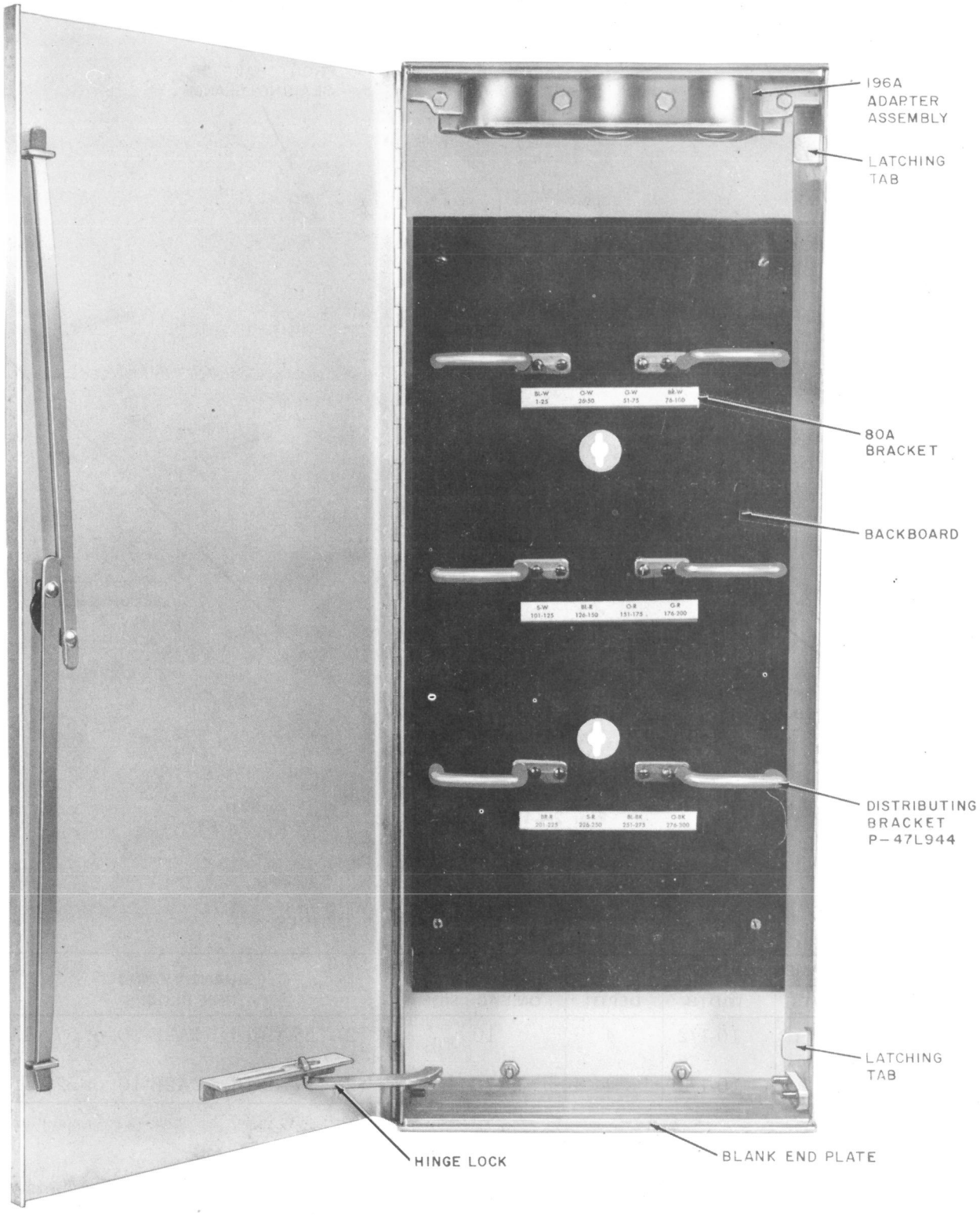

Fig. 3—5B4-300 Closure

(c) A locking mechanism for securing the cover in the open position while a craftsman is working in the closure.

(d) A 196A adapter assembly (Fig. 2) which consists of a sealing gland that will accommodate PIC cable up to 1.6 inches in diameter.

(e) Mounting bracket P-21E157 for mounting closure to either pole or wall.

2.04 Table B lists other characteristics of the 5A4-200 and 5B4-300 closures.

3. MOUNTING

3.01 The 5-type closure should be mounted 40 inches above ground level for low level installation or 24 inches below the strand in aerial installation as shown in Fig. 4.

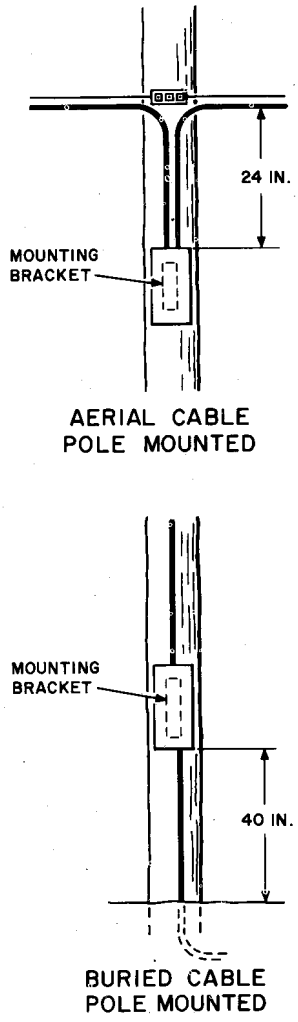

Fig. 4—Mounting Location

TABLE B
CHARACTERISTICS OF 5A4-200 AND 5B4-300 CLOSURES

CLOSURE	DIMENSIONS (INCHES)			CAPACITY							
				IN CABLE PAIRS BY GAUGE				OUT CABLE PAIRS BY GAUGE			
	HEIGHT	WIDTH	DEPTH	26	24	22	19	26	24	22	19
5A4-200	27	10-1/2	4	400	400	300	200	200	200	200	200
5B4-300	27	10-1/2	4	600	600	300	200[1]	300	300	300	200

Note 1: Maximum size cable that adapter assembly will accomodate.

3.02 Install and secure the closure mounting bracket (Fig. 5) to a pole or wall. Use Table C as a guide for determining the anchoring device to use.

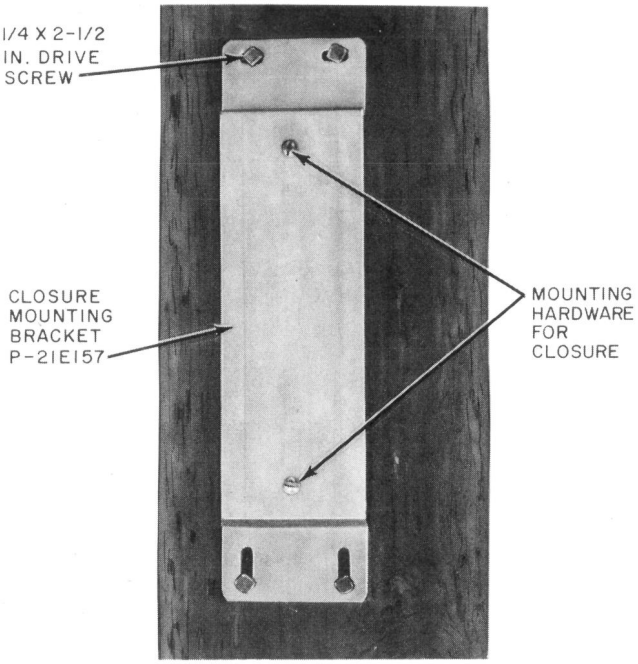

Fig. 5—Closure Mounting Bracket Installed on Pole

TABLE C

GUIDE FOR DETERMINING ANCHOR DEVICE

TYPE OF STRUCTURE	ANCHORING DEVICE
Pole	1/4- by 2-1/2 inch drivescrews
Masonry Wall	1/4- by 1-1/4 inch drive anchors
Hollow Tile Wall	1/4- by 4-inch toggle bolts
Wood Wall	1-1/2 inch No. 14rh galvanized wood screws

3.03 Utilizing the double keyhole slots in the back of closure, install and secure the closure to the mounting bracket.

Caution: When opening or closing the cover on the closures, the hexagonal bolt head should be turned in the direction indicated by the arrow on the cover. Only the 5A4-200 and 5B4-300 closures in addition to the arrow, have the words "OPEN" and "CLOSE" (Fig. 6). The square shoulder on the bolt may shear off if this procedure is not followed. When closing cover, be sure latch is in open position to avoid breaking the latching tabs on the closure.

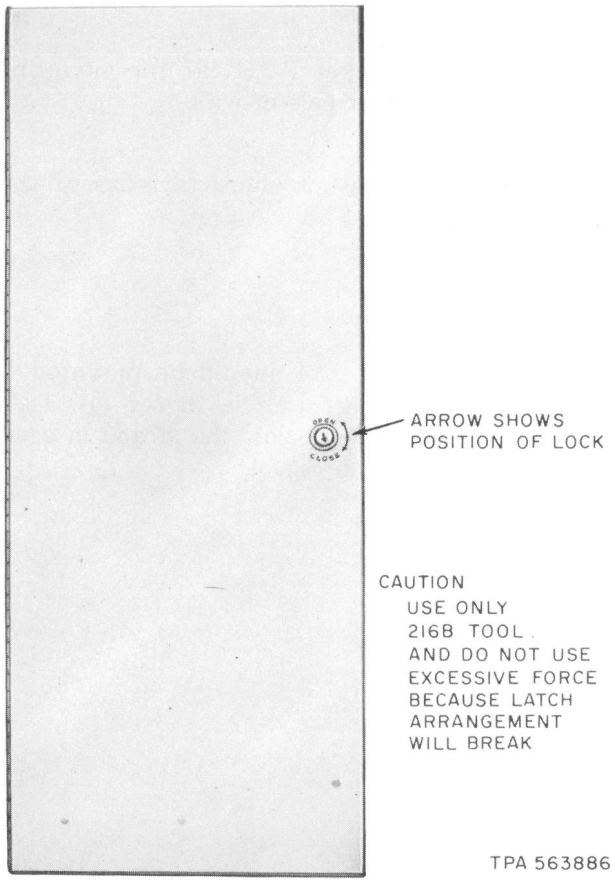

Fig. 6—Opening and Closing Directions

4. PLACING AND BONDING CABLE

TOP ENTRANCE

4.01 Remove the front half of the sealing gland and place cable in the closure. Cut the cable approximately 10 inches below the bottom of the closure.

BOTTOM ENTRANCE

4.02 Remove the front half of the sealing gland and place cable in the closure. The cable

must be sufficient length to loop through the distributing brackets at the top of the closure and feed back through the lower distributing brackets and to approximately 10 inches below the bottom of the closure before cutting.

4.03 After positioning the cable, measure two inches below inner surface of top sealing gland (or two inches above inner surface of bottom gland) and then ring the sheath and remove to the end of the cable.

4.04 Install D bond clamp and bond strap on each cable sheath as outlined in Section 081-852-118.

4.05 ***Thoroughly scuff the sheath*** of the cable with the Bell System B brush before installing the sealing washers and tape.

4.06 Install two sealing washers over the sheath of the cable. Using 3/4 inch wide B sealing tape, form the collar on the sheath in a position to fit into the sealing gland cavity. Make the spiral diameter flush with the sealing washers plus another half turn.

4.07 Place the sealing washers into positon on both sides of the tape collar. The collar, including the washers, should not be more than 1-1/4 inches wide as shown in Fig. 7.

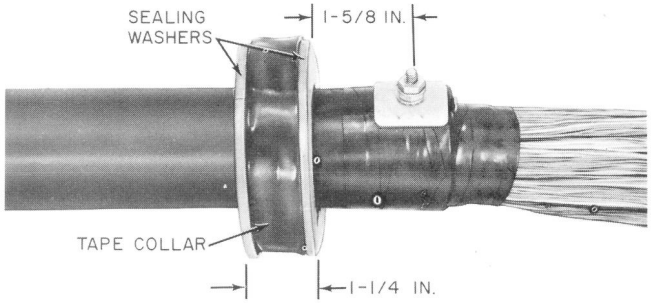

Fig. 7—Sealing Washers in Place

4.08 Place the B sealing cord in the grooves as shown in Fig. 8. The unused cavities should be sealed with a solid plug of 3/4 inch wide B sealing tape with solid sealing washers of proper size on each side of the plug. Connect the free end of the bonding strap to the rear half of sealing gland with the hex head screw (Fig. 8).

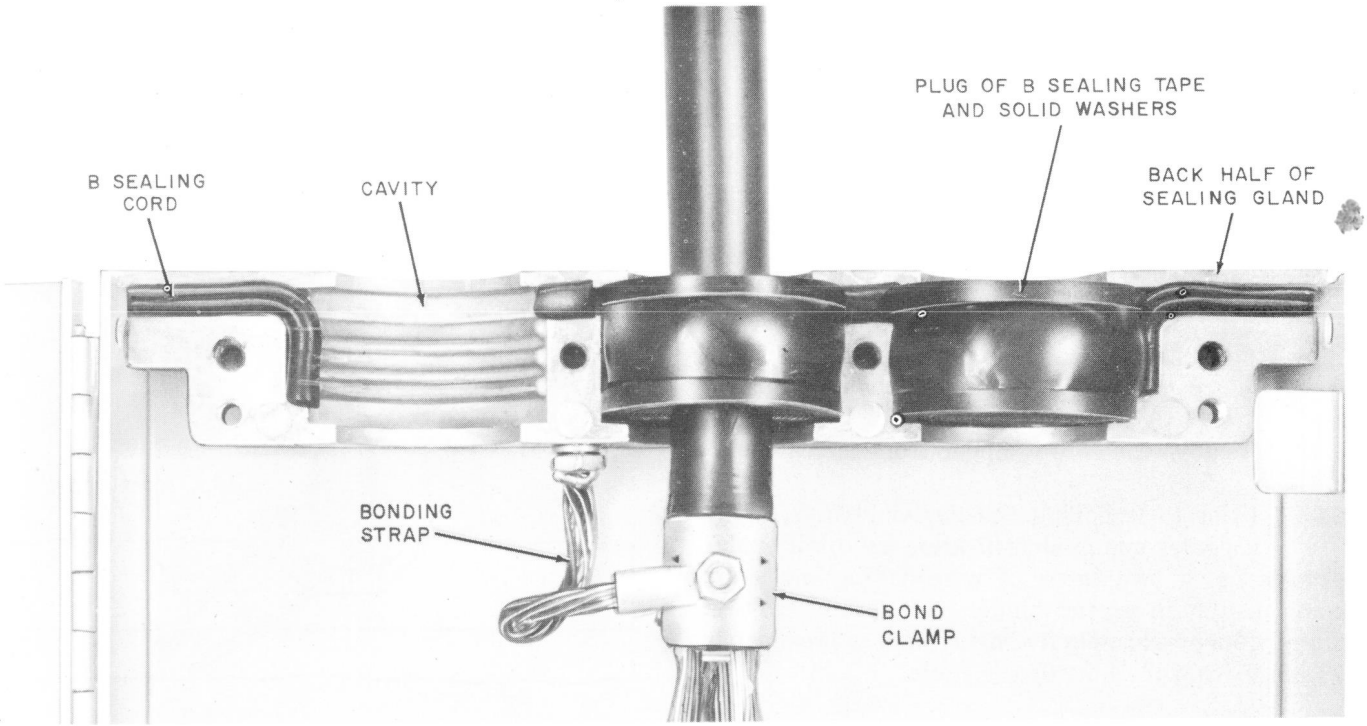

Fig. 8—Cable Placed in Gland

4.09 Position the front half of the sealing gland over the prepared cable then secure with the hex head bolts as shown in Fig. 9. Torque the bolts uniformly to 75 to 100 inch/pounds to ensure good metal-to-metal contact.

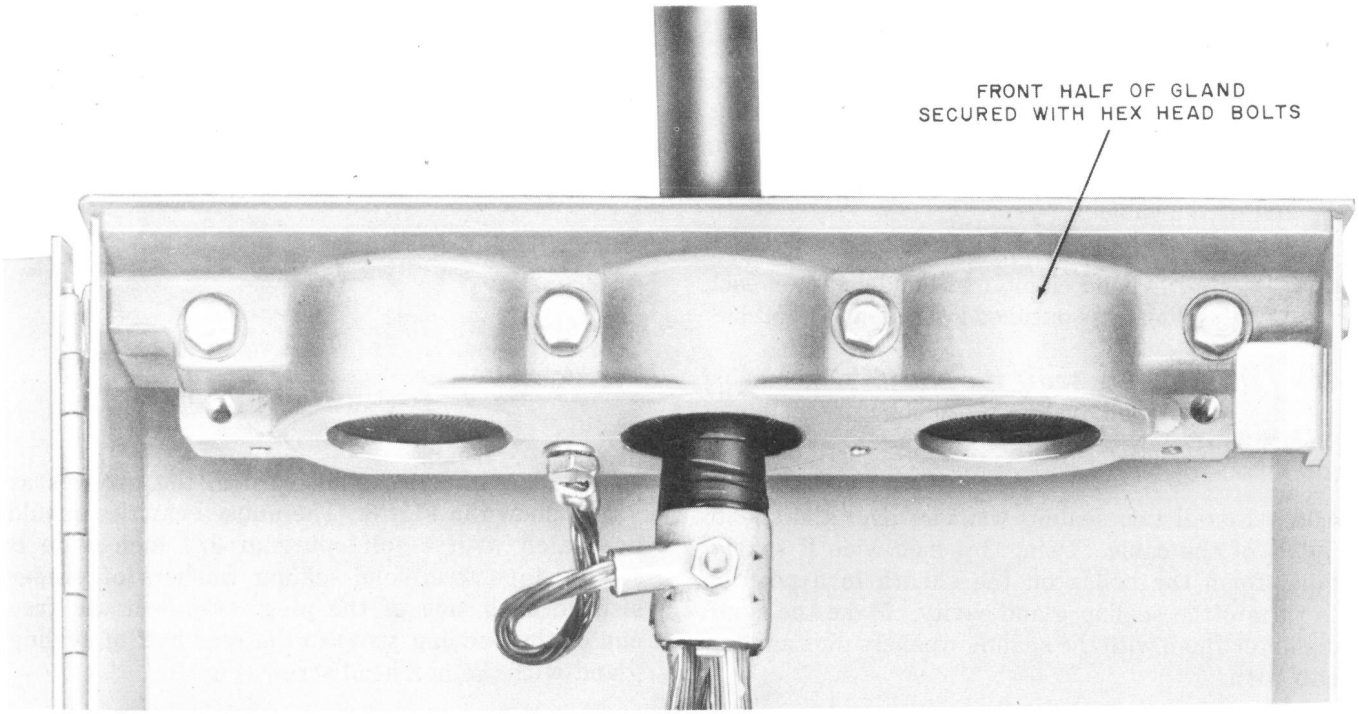

Fig. 9—Cable Secured in Gland

5. ▶WIRING◀

5.01 ▶Install and secure 57-type connecting blocks as outlined on the engineering work print.

Note: The use of the 5A3 on 5B3 closures to contain 57-type connecting blocks is included for those applications where ready access design cannot be abandoned in favor of designs using permanently terminated cable pairs.

5.02 Remove the core wrapper from the cable.

5.03 Prior to removing the binder strings, apply a binder group identification tie to all binder groups using two turns of wire having the same color insulation as the binder strings and make a pigtail of approximately five tight twists approximately 2 inches from the butt of the cable.

5.04 Work the pairs to be terminated (preferred count) toward the front of the closure, then apply approximately five tight twists to each pair at midpoint (Fig. 11).

5.05 Terminate the pair on the binding post as follows (Fig. 10):

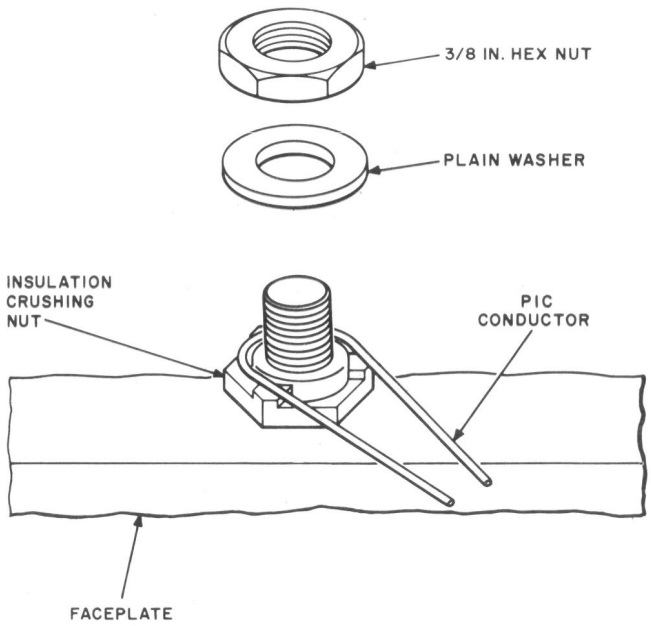

Fig. 10—Installing PIC Conductor on Binding Post

(a) Form a hairpin loop with the looped end of a PIC wire and place around the binding post on the anvils of the bottom insulation crushing nut.

(b) ***Avoid pulling the conductor against the threads of the binding post to prevent cutting small gauge conductor when tightening.***

(c) Tighten nut with 216 B tool to crush the insulation on the conductor permitting an electrical connection. Figure 11 illustrates a few terminated pairs.

6. OPENING AND REASSEMBLING ADAPTER ASSEMBLY

6.01 Remove the two bolts, located on the outside of the closure, securing the front half of the sealing gland to the housing.

6.02 Remove the four bolts, located inside the closure, securing the front half of the sealing gland to the rear half.

6.03 Insert two 3/8-inch bolts in the far left and far right holes of the front half of the sealing gland, then jack the two halves of the sealing gland apart.

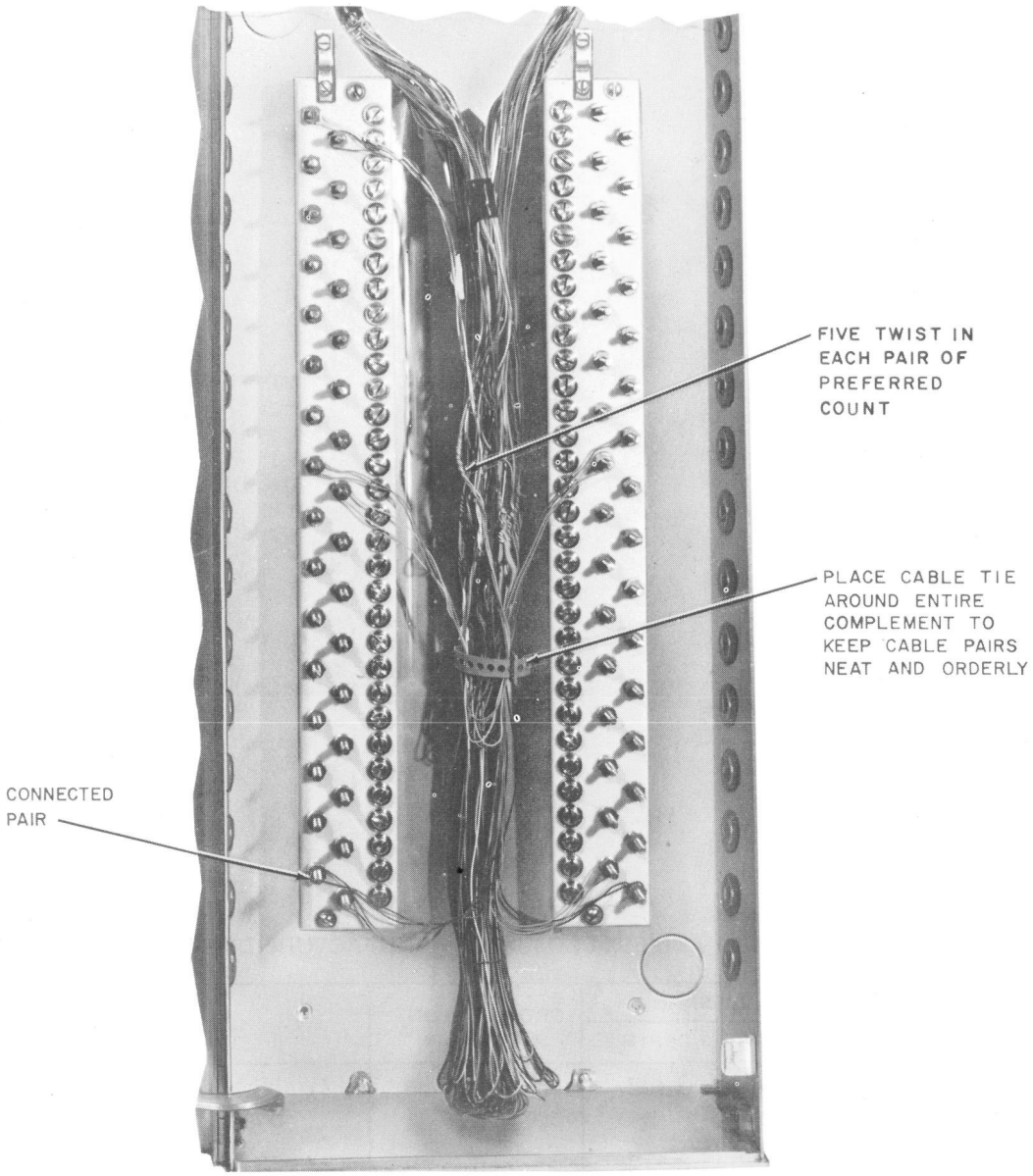

Fig. 11—Pairs Terminated on 57-Type Connecting Block

6.04 Remove the sealing tape and washers from the existing cables and install a new collar as outlined in 4.05 through 4.07.

6.05 Clean the B sealing tape and B sealing cord from the two halves of the sealing gland.

6.06 Reassemble the adapter assembly as outlined in 4.08 and 4.09.

7. MANUFACTURE DISCONTINUED CLOSURES

7.01 The 5A1 (Fig. 12) and 5B1 closures were designed for use at junctions of wire and cable at ready access points. Table D lists the characteristics of these closures.

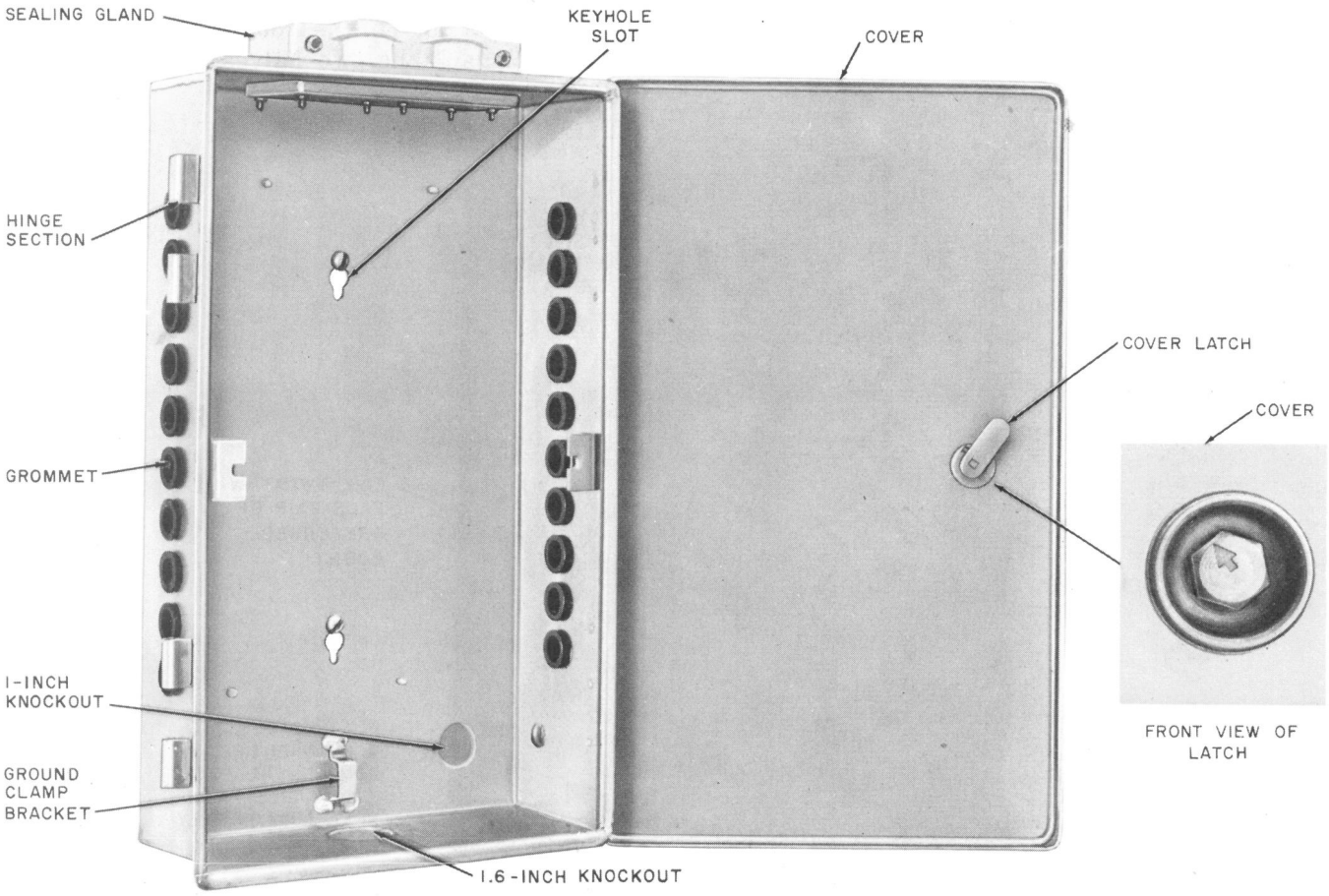

Fig. 12—5A1 Closure

TABLE D

CHARACTERISTICS OF 5A1 AND 5B1 CLOSURES (MANUFACTURE DISCONTINUED)

CLOSURE	DIMENSIONS (INCHES)			GROMMETS ON EACH SIDE	QUANTITY AND TYPE OF BLOCKS
	HEIGHT	WIDTH	DEPTH		
5A1	16	9	3-1/2	10	(2) 57A2-10, 57A2B-10 or 57A3A-10
5B1	24	10-1/2	3-1/2	16	(2) 57A2-16, 57A2B-16 or 57A3A-16

7.02 The 5A2-200 and 5B2-300 closures (Fig. 13) were designed for use as control and access points in dedicated plant. Table E lists the characteristics of these closures.

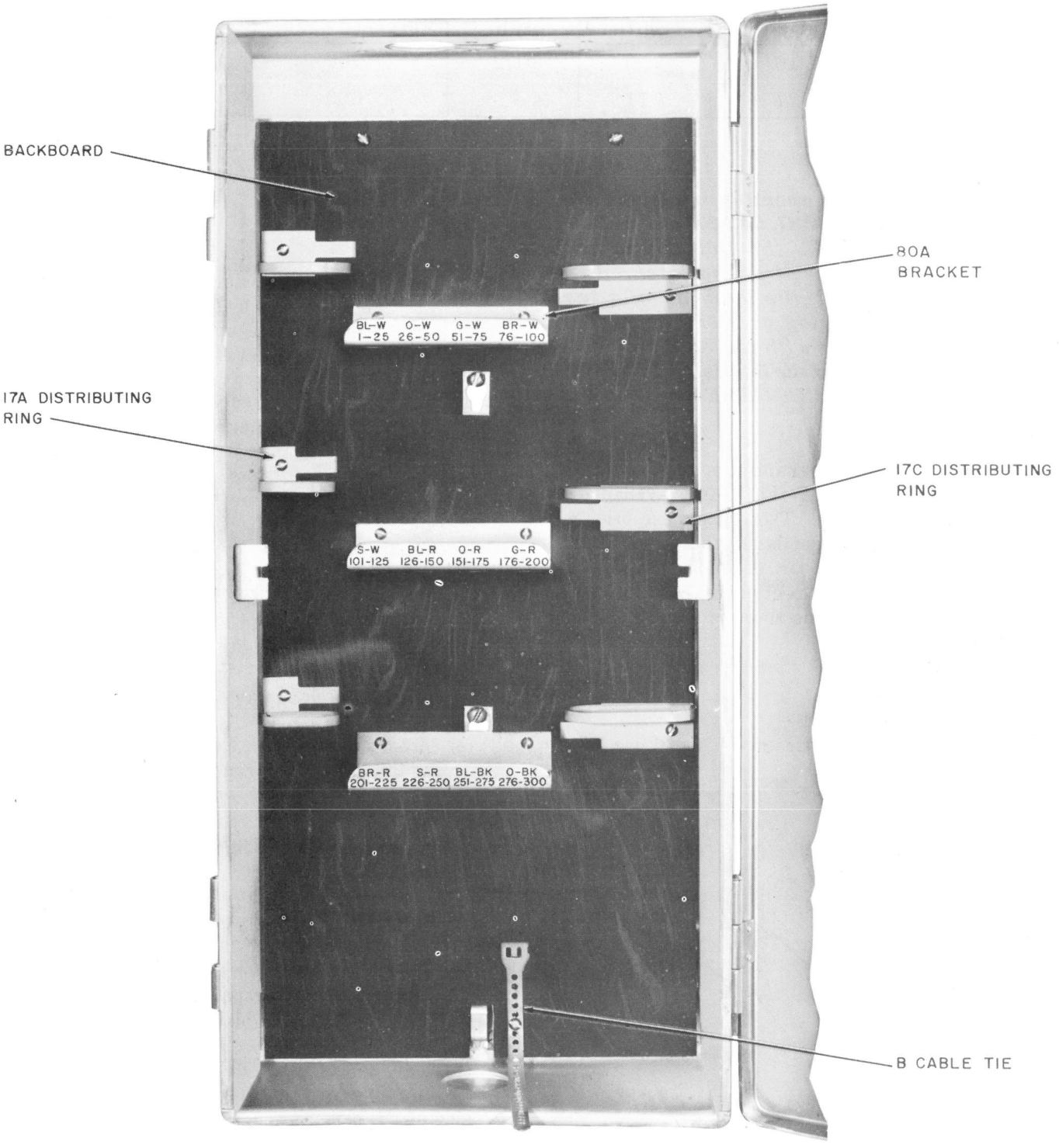

Fig. 13—5B2-300 Closure (Manufacture Discontinued)

TABLE E

CHARACTERISTICS OF 5A2-200 AND 5B2-300 CLOSURES (MANUFACTURE DISCONTINUED)

CLOSURE	DIMENSIONS (INCHES)			CAPACITY	
	HEIGHT	WIDTH	DEPTH	IN CABLE PAIRS	OUT CABLE PAIRS
5A2-200	16	9	3-1/2	400	200
5B2-300	27	11	4	600	300

Caution: When opening or closing the cover on the 5A1, 5B1, 5A2-200 and 5B2-300 closures, use ONLY the 216B tool to turn the hexagonal head of the latch. It is possible to break the latch using a tool capable of applying greater torque than normally applied with the 216B tool. The hexagonal head of the latch should NEVER BE TURNED THROUGH THE HORIZONTAL POSITION.

7.03 If a new latch mechanism is required, a kit of parts D-180443P (Fig. 14) is available to replace the broken latch. These parts are oriented so that, as in the original latch, the arrow points toward the edge of the door when locked and away when unlocked. The direction of rotation with this latch is not critical as there is NO STOP PIN EFFECT.

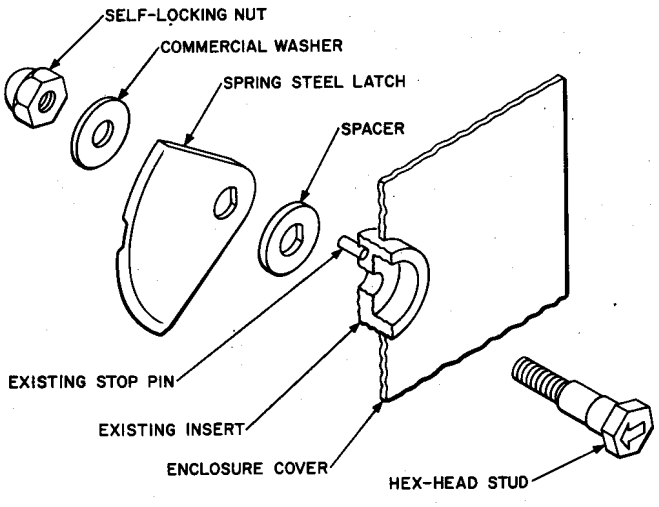

Fig. 14—Repair Latch

5A1 and 5B1 CLOSURES

7.04 Each closure consists of a weatherproof metal box having a hinged cover and mounting bracket for either pole or wall mounting and provides the following features:

(a) Hinge section on each side to permit left or right hand opening of cover.

(b) Double keyhole slots in the back to permit mounting of either top or bottom cable entrance.

(c) A splice case type sealing gland at one end for installation of a cable loop through a moisture tight seal and a 1.6-inch knockout on the opposite end for additional cable entrance.

(d) A cover latch operated with a 216B tool.

(e) A knockout in the back of the closure for additional wire entrance.

5A2-200 and 5B2-300 CLOSURES

The 5A2-200 and 5B2-300 closures are similar to the 5A1 and 5B1 closures except for the following:

(a) A backboard with wiring brackets, distributing rings, and a talk pair terminal block are provided for dedicated plant arrangements.

(b) The closures do not have drop wire or multiple wire entrance grommets on either side of the closure.

5B5 CLOSURE

7.05 The 5B5 closure is identical to the 5B4-300 closure except it is supplied ***without*** the backboard, wiring brackets, and distributing rings.

7.06 The following materials are not furnished with the closures and must be ordered as required.

(a) A 196B adapter assembly (Fig. 15) that will accommodate PIC cables up to 2.0 inches in diameter.

Note: These adapter assemblies can be mounted at either the top or bottom of the closures. The hardware for securing the adapter assembly is furnished with the closure. If cables enter from both the top and bottom, an additional adapter assembly will have to be ordered to replace the blank end plate.

(b) The type of sealing washers required is determined by the diameter of the aperture in the gland. Refer to Section 633-400-200 for sealing washer information.

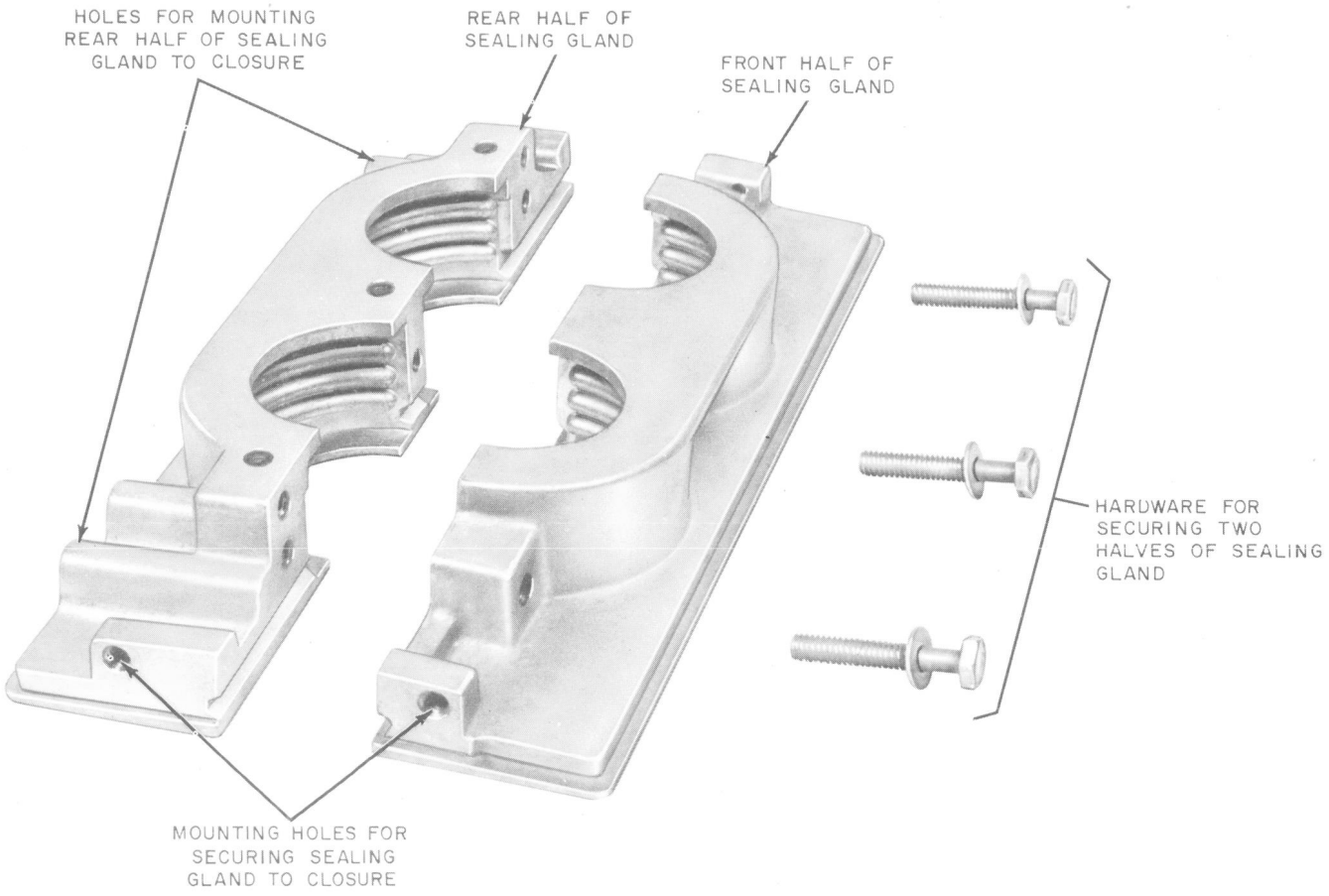

Fig. 15—196B Adapter