

## 30- AND 31-TYPE SPLICE CASES

### DESCRIPTION AND INSTALLATION

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clamps, ground lug assemblies, pipe plugs, and capscrews and nuts are furnished with the cases as shown.

**2.02** The 30D2 splice case is used for enclosing a straight splice on a cable with a sheath diameter between 2.3 and 3.0 inches.

**2.03** The 31D2 splice case has four openings. Each opening will accept a cable with a sheath diameter between 2.2 and 3.0 inches. However, this does not mean that a 31D2 splice case will enclose a splice made with four full size cables. The variables in building a splice are

- (1) Craft experience
- (2) New or existing splice
- (3) Gauge of cables
- (4) Number of pairs straight spliced
- (5) Number of pairs requiring piecing out.

These variables make it impossible to determine the number of pairs that can be enclosed in a 31-type splice case.

**2.04** The following criteria will assist in determining if a proposed splice will fit inside the splice case.

- (a) Add the total number of pairs entering the splice case (double this number if conductors are 22-gauge) to the number of pairs of *B wire connectors required to make the splice*. If the sum exceeds **8400**, problems could be encountered in closing the splice.
- (b) When the total exceeds **8400**, or if the work is being done in an old splice and the total approaches **8000** consult the appropriate supervision to see if it will be feasible to complete the splice or redesign the layout.

#### 1. GENERAL

**1.01** This section covers the description and installation of the 30D2 and 31D2 splice cases used to enclose splices made using B wire connectors.

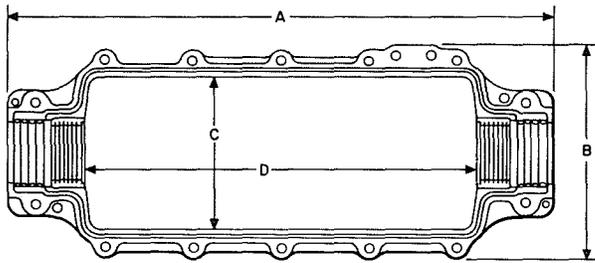
**1.02** This section is reissued to provide a guide for determining the maximum number of pairs, joined with B wire connectors, that can be contained in a 31-type splice case. A guide for the maximum number of pairs that can be enclosed in these cases when splice is made with 710-type connector or B modular connector is outlined in Sections 632-205-220 or 632-205-235, respectively.

**1.03** Two identical splice cases, such as two 30D2 cases, are required for a splice closure. The splice cases are shipped in individual cartons and each carton contains one-half of the mounting hardware.

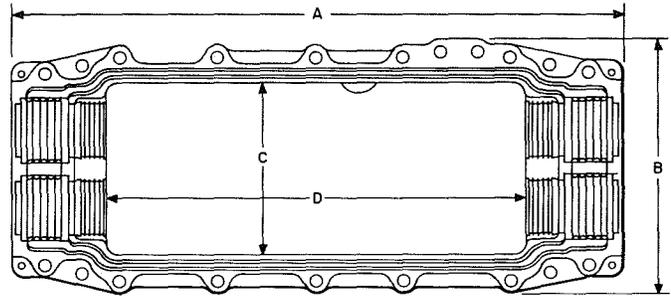
**1.04** The 30D2 or 31D2 splice cases can be used aerially, underground, or in buried plant. If they are used in buried plant, they should be protected against corrosion as outlined in Section 633-020-205.

#### 2. DESCRIPTION

**2.01** The 30D2 and 31D2 splice cases shown in Fig. 1 are galvanized cast iron. Inner sheath



30D2



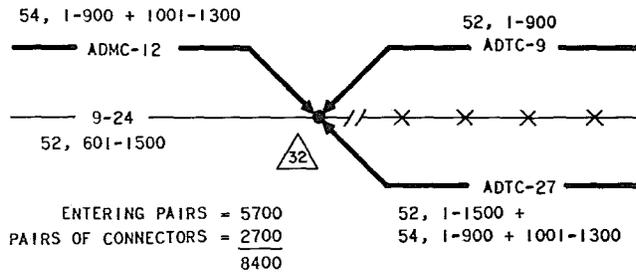
31D2

CASE NO.	DIMENSIONS (INCHES)				WEIGHT (POUNDS)
	A	B	C	D	
30D2	27-7/8	10-3/4	8	20	35
31D2	27-7/8	11-3/4	9	20	41

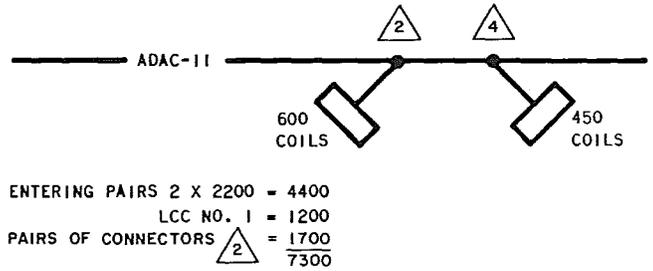
PART	PART NUMBER (THIS INFORMATION SHOULD BE USED WHEN ORDERING PARTS)	NUMBER (QUANTITY) OF PARTS FURNISHED WITH EACH CASE		USE
		CASE NUMBER		
		30D2	31D2	
INNER SHEATH CLAMP	P-18E834 CLAMP	1	2	SLIDES UNDER SHEATH TABS FOR CLAMPING
SCREW 3/8 IN. - 16x2 IN.	P-17E863 HEX HEAD SCREW (SPECIAL) 3/8 IN. - 16 x 2 IN.	7		FOR JOINING SPLICE CASES
NUT	P-17E868 NUT 3/8 IN. - 16x9/16 IN.	7		
GROUND LUG CAP SCREW 3/8 IN. - 16x1 IN.	P-18A678 GROUND LUG ASSEMBLY	1		FOR SECURING BONDING RIBBON TO SPLICE CASE AND MOUNTING DETAIL FOR 50A HANGER
1/8 IN. PIPE PLUG	P-13A314 PLUG	1		FOR PRESSURE TESTING FITTING

Fig. 1—Splice Cases and Parts—30- and 31-Types

2.05 Figure 2 illustrates examples of the application of the 8400 formula.

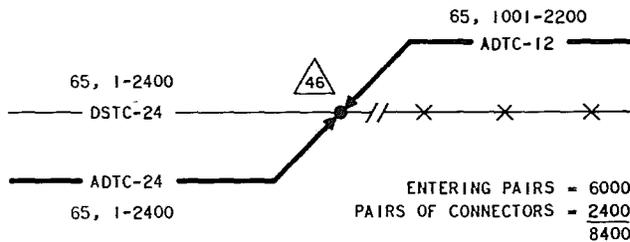


EXAMPLE NO. 1

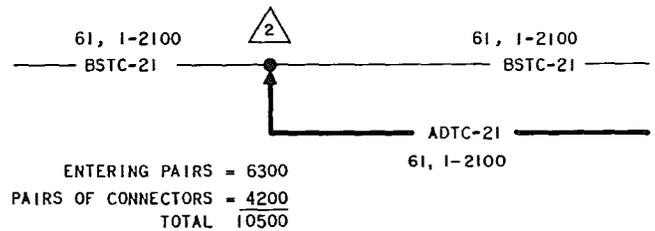


EXAMPLE NO. 4

EXAMPLE 4 SHOWS THE SAME SITUATION REDESIGNED. THE SPLICE BUNDLES ARE SMALL ENOUGH TO BE COVERED WITH SPLICE CASES.

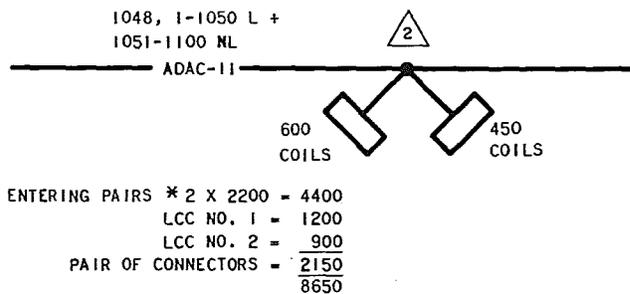


EXAMPLE NO. 2



EXAMPLE NO. 5

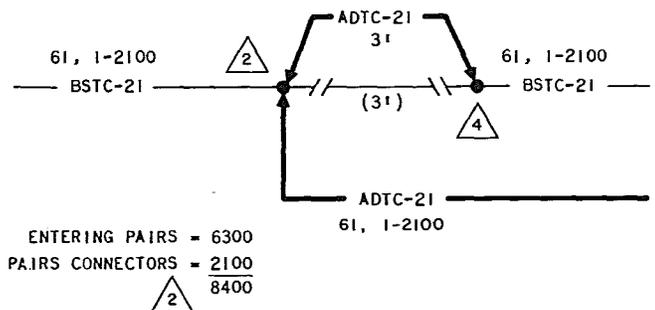
EXAMPLE 5 SHOWS A FULL BRIDGE SPLICE. THE FOLD-BACK METHOD OF SPLICING WAS NOT USED IN ORIGINAL SPLICE. THEREFORE ALL PAIRS HAVE TO BE PIECED OUT. TOTAL EXCEEDS 8400.



\* DOUBLE FACTOR FOR 22 GAUGE

EXAMPLE NO. 3

EXAMPLE 3 ILLUSTRATES A SITUATION WHERE THE TOTAL COUNT EXCEEDS 8400. FIELD EXPERIENCE INDICATES THAT PROBLEMS ARE ENCOUNTERED ENCLOSING SUCH A SPLICE.



EXAMPLE NO. 6

EXAMPLE 6 ILLUSTRATES HOW TO REDESIGN THE LAYOUT. A 31D2 CASE CAN BE USED ON AND A 20D2 CASE ON

Fig. 2—Examples of Application of 8400 Formula

**3. INSTALLATION**

**3.01** The following hardware and materials are not furnished with the splice case and must be ordered separately as required for an installation. Refer to Section 633-400-200 for ordering information on items (a) through (e) as follows:

- (a) Sealing washers
- (b) Sealing tape and sealing cord
- (c) Adapter assemblies
- (d) PIPETITE-Stik
- (e) Two 50-A hangers (for aerial use only)
- (f) Two 22-inch long B lashed cable supports (for underground use only)
- (g) One-inch diameter pipe for supporting splice case (for underground use only).

**3.02** The method of sheath preparation for use on aerial, underground, and buried installations is as outlined in Section 633-400-200 with the following exceptions:

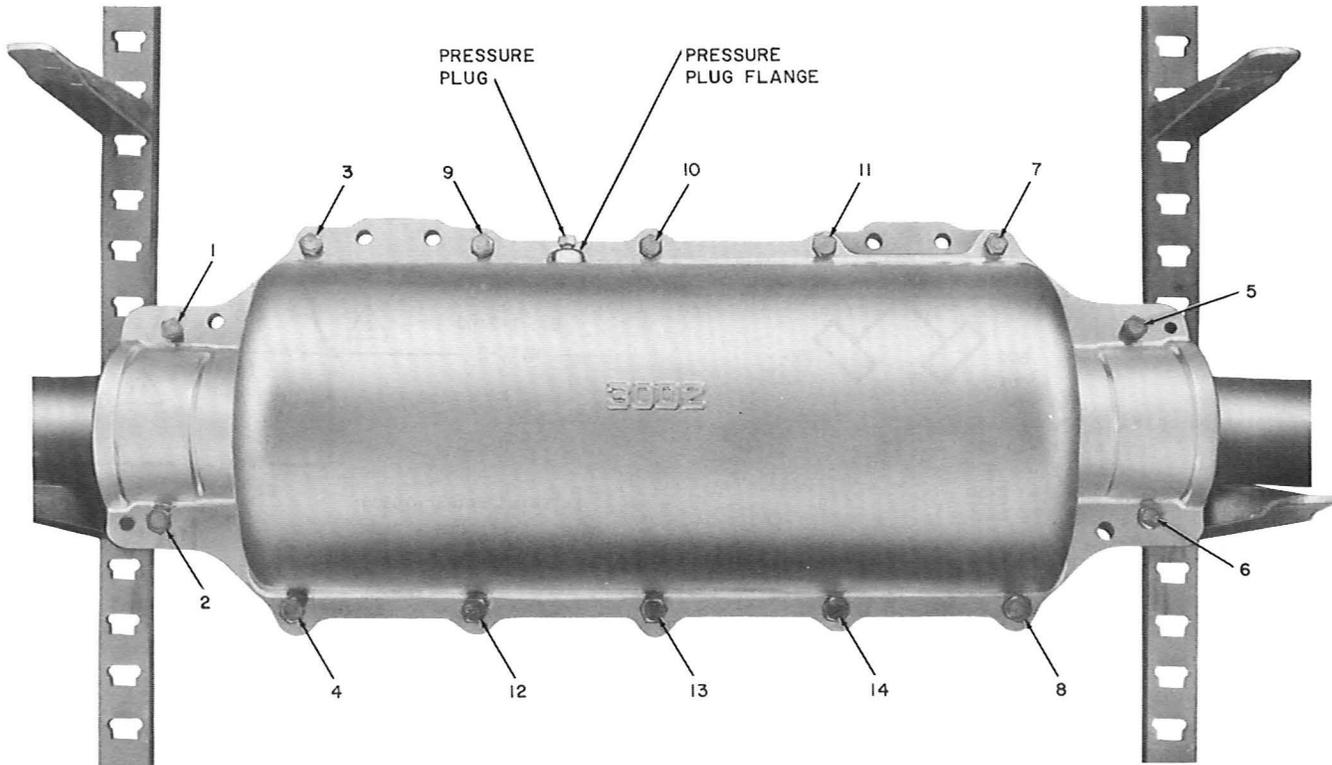
- (a) The length of the cable sheath opening is 19 inches.

- (b) The tab length is 2-1/4 inches.
- (c) The distance between the outer paper tape markers or inner sealing washers is 23-1/2 inches.
- (d) The approximate distance between the installed inner sheath clamps is 21 inches.

**3.03** *Thoroughly clean the sealing surface of the splice case* with a clean, dry, lint-free cloth, KS-14666, moistened with a small quantity of B cleaning fluid. This will ensure the removal of any oil, grease, dirt, filings, moisture, desiccant, etc.

**3.04** Place the bottom or back splice case with the inner sealing washers on the cable flush against the shoulder of the housing. In an aerial installation, attach the back case to the strand using one 50-A hanger.

**3.05** Install B sealing cord in the side grooves *being careful to avoid making flat spots or dents in the cord. Do not stretch the cord or handle with damp or oily hands. Inspect to ensure that cord is in the grooves and free from moisture or dirt.*



**Fig. 3—Assembled Splice Case**

**3.06** On the 31-type splice case install a 1-1/2 inch length of B sealing cord in each crotch as shown in Section 633-400-200.

**3.07** Place the other case in position *being careful not to disturb the sealing cord* and install screws in positions 1, 2, 3, 4, 5, 6, 7, and 8 as shown in Fig. 3.

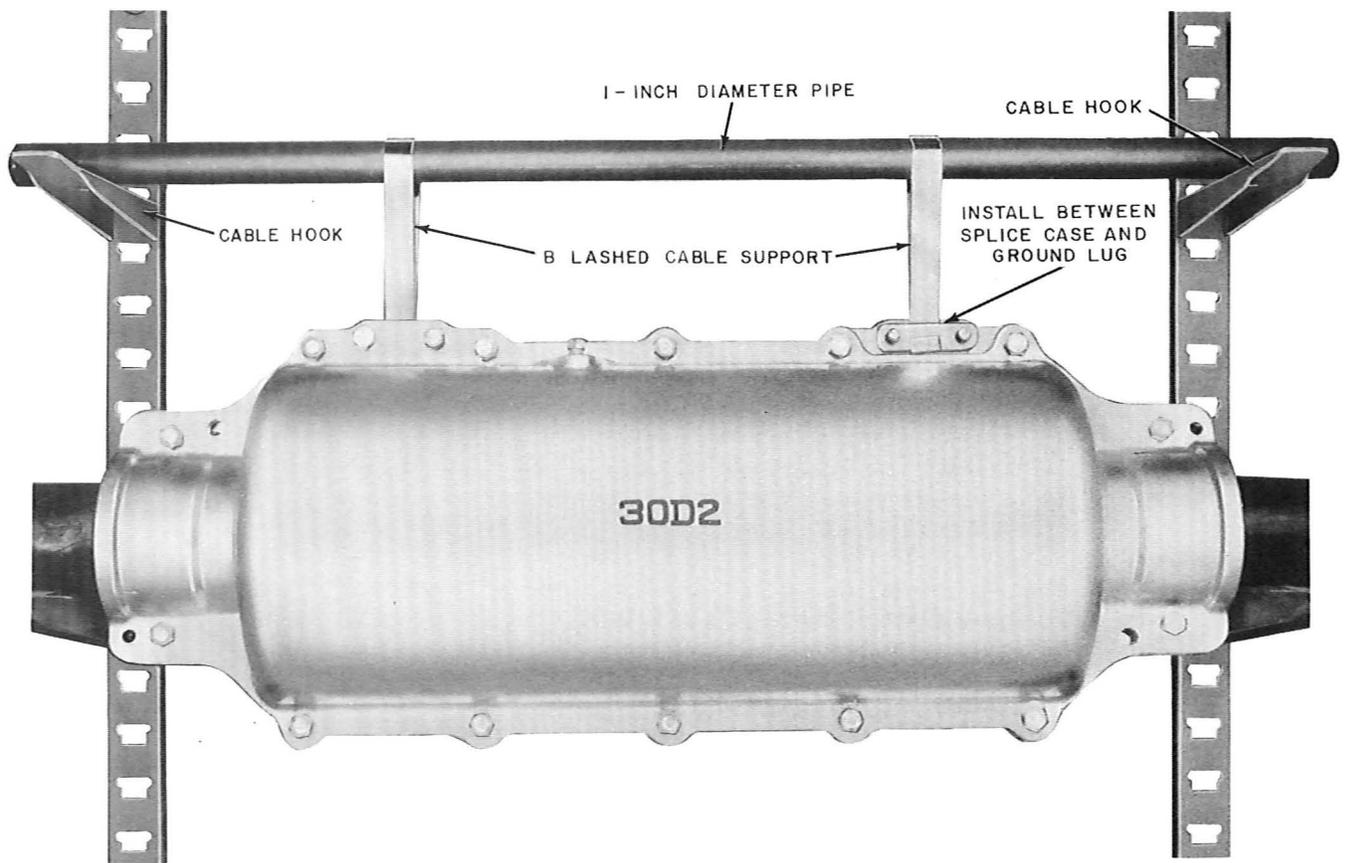
**3.08** Using the ratchet drive and an appropriate socket from the D wrench kit, tighten screws 1, 2, 5, 6, 3, 4, 7, and 8 in that sequence until the splice cases are approximately 1/8 inch apart. *Bring the cases together evenly, never tightening any screw more than two turns at a time. If any screw requires more than an easy turning effort, go to the next screw. If turning is still difficult, check for misalignment of cases and washers.*

**3.09** Place the remaining screws in the cases and tighten handtight. Using a B torque wrench as described in Section 081-420-103, continue to tighten the screws alternately until a torque reading of 300 to 450 inch-pounds is obtained for each screw. On an aerial installation, secure the front splice case to the strand using another 50-A hanger. Tighten the screws in the two ground lug assemblies until a torque value of 300 to 450 inch-pounds is obtained.

#### 4. SUPPORTING SPLICE CASE

**4.01** In an underground installation support the splice case as shown in Fig. 4 and as follows:

- (a) Place a length of 1-inch diameter pipe on two cable hooks.



**Fig. 4—Supporting Splice Case**

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- (b) Obtain two 22-inch lengths of B lashed cable support and remove the buckles.
- (c) Loop the lashed cable support over the installed pipe.
- (d) Install ground lugs on splice closure. Do not tighten screws at this time.
- (e) Route the ends of the lashed cable support through the space between the ground lugs and the splice case and draw taut.
- (f) Tighten the screws evenly to secure the ground lugs and lashed cable supports. Cut the surplus end of the lashed cable supports to within 1/4 inch of the ground lug and bend up snug with the ground lug. Using a B torque wrench, further tighten the screws until a torque reading of 300 to 450 inch-pounds is obtained.

**4.02** *The lashed cable supports should be under sufficient tension to support the full weight of the splice case to prevent damage to the end seals.*

### 5. PRESSURE TESTING

**5.01** Pressure test the splice case as outlined in Section 633-400-200.

**5.02** Apply PIPETITE-Stick to the pressure plug, then insert plug in pressure plug flange (Fig. 3). Using the B torque wrench and an appropriate socket from the D wrench kit, tighten the pressure plug until a torque reading of 35 to 50 inch-pounds is obtained.

### 6. OPENING AND REASSEMBLING

**6.01** Open and reassemble the splice case as outlined in Section 633-400-200.