BELL SYSTEM PRACTICES
Outside Plant Construction and Maintenance

SECTION G59.608.1
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AT&T Co Standard

COILS AND CASES

INSTALLING SPLICE LOADING COIL CASES—TOLL

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1. GENERAL

1.01 This section describes the arrangement and method of installing toll loading coil cases in splices.

1.02 Splice loading coil cases are used in loading a small number of pairs or quads where the coils can be conveniently placed in a splice or in a sheath opening made for the purpose.

1.03 If this type of loading falls at a loading splice, large branch splice, or at locations where it would interfere with future splicing work it is advisable to use lead sleeve cases.

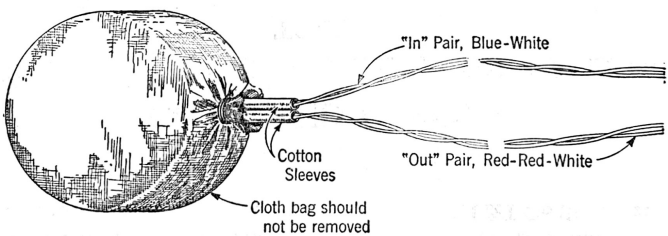
2. LOCATION OF SPLICE LOADING COILS

2.01 **In aerial cables** the coils should preferably be installed near a pole where there is no splice, by making a new sheath opening 24 inches from the through bolt. However, it is satisfactory to place the coils in an existing splice if the completed splice can be closed with a sleeve of reasonable diameter and length. Where the loading occurs at an H fixture it is generally advisable to place the cases in a separate sleeve, to avoid interference with other splicing operations. On new cable installations, the sleeve containing the cases should be located between the grade clamp and the pole. It is not advisable to locate the sleeve between the poles as this may interfere with the installation of cases to replace defective units in the main cases. On existing installations, the sleeve can be located beyond the grade clamp if this is necessary because of the location of the clamp or the setup of the main cable.

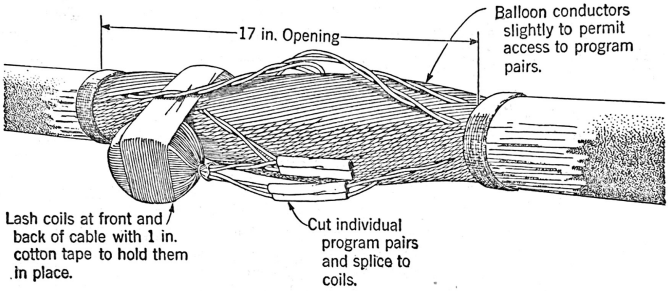
2.02 **Underground Cable:** In line manholes, it is generally necessary to open the sleeve at the main splice and install the coils at this point. In loading manholes, the coils should preferably be placed in a separate sleeve when practicable, or at a straight splice. A larger diameter sleeve may be required to cover the splice on completion of the loading. The coils should not be placed in large loading splices.

3. INSTALLING SPLICE LOADING COILS

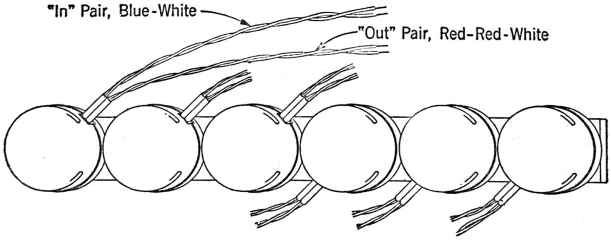
3.01 **Program Loading:** The following sketch shows a one-coil case of the type used for splice loading program pairs. The coil is encased in a small container which is filled with compound to minimize moisture absorption. The "In" and "Out" terminals are brought out in two pairs as illustrated.



3.02 The following illustration shows the method of installing individual program coils at a separate sheath opening in the cable. For crosstalk reasons, it is necessary to place the coils on opposite sides of the splice so that the separation is at least one inch. When segregation between cases on Eastbound and Westbound program pairs is specified, the two groups of cases should be placed on opposite sides of the cable. In splicing these cases, it is important to maintain the pair twist in the leads and in the cable conductors as shown below.

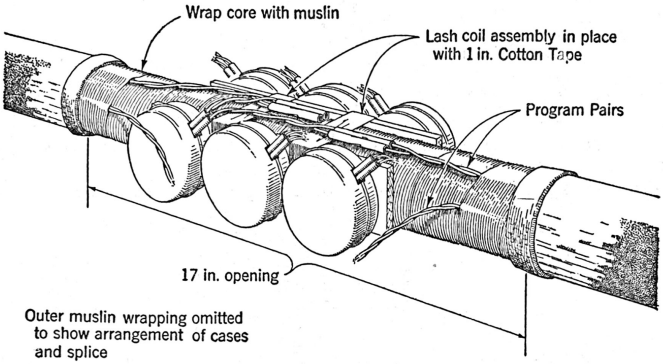


3.03 An assembly of six individual loading coils is provided for program loading where two or more are placed on the same side of the splice. This unit is illustrated below.



3.04 In order to minimize crosstalk between the pairs from the various coils, it is important to have each pair well twisted before splicing. This also applies to the paper insulated pairs in the cable.

3.05 The following illustration shows the arrangement to be followed when the coil assembly is connected at a separate sheath opening in the cable. The wood mounting strip is cut as required. The cases must not be removed from the wood strip.

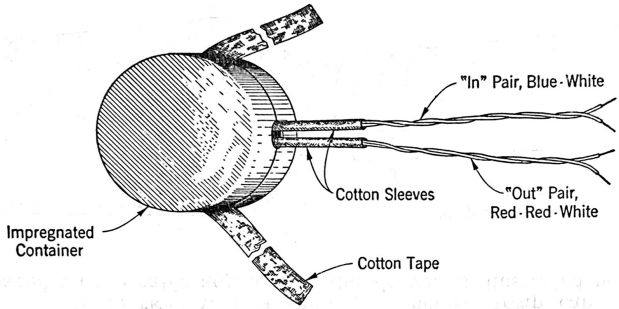


3.06 The sizes of lead sleeves required to accommodate the individual program cases at a new opening and in existing splices are indicated in the following table.

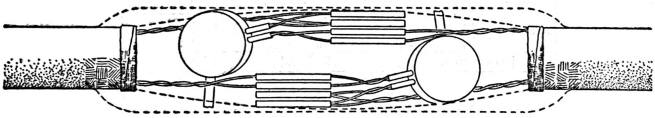
Cable Diameter (Inches)	Cable Circumference (Inches)	Number of Program Cases	Sizes of Lead Sleeves	
			In Section Diam. Length (Inches)	At Straight Splice Diam. Length (Inches)
1¼ to 1¾	4 to 5½	4 or 6	4½ × 20	4½ × 20
		2	3½ × 20	4 × 20
1¾ + to 2¼	5½ + to 7	4 or 6	*5 × 22	*5 × 22
		2	4 × 20	4½ × 20
2¼ + to 2⅝	7 + to 8¼	4 or 6	*5 × 22	*5½ × 22
		2	4½ × 20	*5 × 22
3⅛	9¾	6	*5½ × 22	*6 × 22

*Use Extra Strength Lead Sleeve if cable is maintained under continuous pressure; place aerial cable supports on cable near each end of sleeve.

3.07 **Replacement Units for Defective Coils:** The following sketch shows a one-coil case of the type used for replacing defective side-circuit coils. The coil is encased in a small container which is filled with compound to minimize moisture absorption. The "In" and "Out" terminals are brought out in two pairs as illustrated.

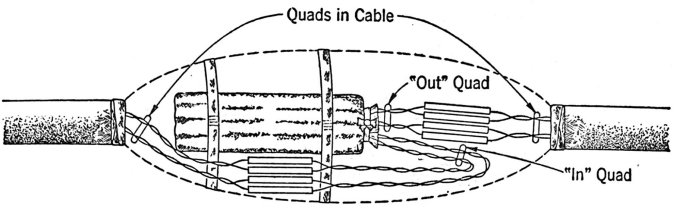


3.08 The arrangement of individual coils and the method of connection are illustrated in the following sketch.



Muslin wrapping omitted for clearness

3.09 The following sketch shows the method of installing a phantom loading unit which is used for replacement purposes.



Color of Insulation

Pair	Wire	"In" Quad	"Out" Quad
1	1	Blue-White	Blue
	2	Blue-White-Red	Blue-Red
2	1	Blue-White-Black-White	Blue-Black-White
	2	Blue-White-Red-White	Blue-Red-White

4. SPLICE IDENTIFICATION

4.01 Sleeves containing individual loading coil cases should be marked with a suitably stencilled strap cable tag placed on the cable adjacent to the sleeve, as illustrated below.