

Transmission Stringing Travelers & Accessories

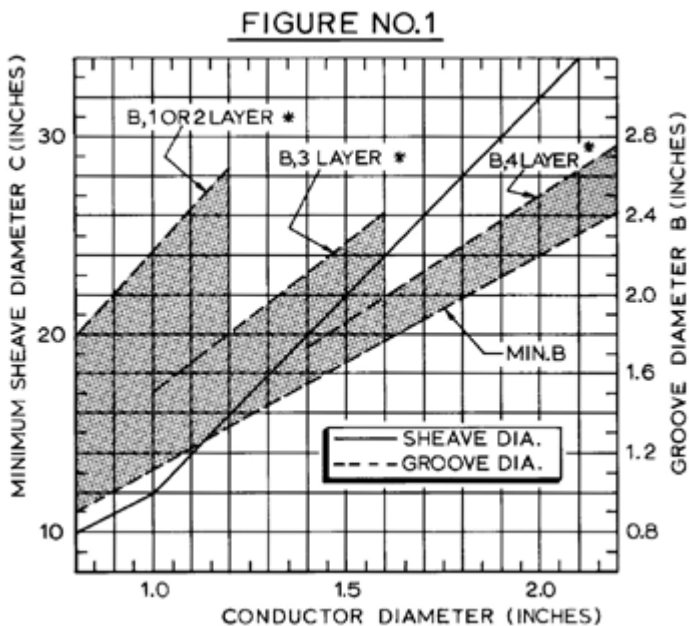
A Guide for the Selection of Transmission Stringing Equipment Single Conductor Travelers

The selection of transmission travelers and accessories depends on a number of factors. The following two pages present a condensation of the data presented in the "IEEE Guide to the Installation of Overhead Transmission Line Conductors" (IEEE Std. 524-1980), along with Lindsey's recommendations for compatible accessories.

SHEAVE AND GROOVE DIAMETER

Proper sheave and groove diameter depends on a number of factors (see IEEE Std. 524-1980). The IEEE recommended minimum bottom of groove sheave diameter (C) is shown in Figure 1. This sheave diameter should be satisfactory for typical conductor stringing operations. For stringing conditions in excess of two miles or over uneven terrain, the IEEE recommends a minimum groove diameter of twenty times the conductor diameter minus four inches. In exceptionally arduous circumstances, accurate sagging may sometime require sheaves with a diameter of 19 to 20 times the conductor diameter.

The minimum groove diameter (B) is also shown in Figure 1, and is at least 1.10 times the diameter of the conductor. Larger groove diameters may be used, but are limited by the 10 number of layers of aluminum wire in the conductor. The more layers of aluminum wire, the more important it is to have a well fitting groove.



*The 7 central wires in AA conductor are considered as a core.

SHEAVE LININGS

While the IEEE Guide recommends that sheave grooves can be either lined or unlined, it is recognized that elastomer linings provide cushioning to increase the bearing area and prevent damage to the conductor from scratched or marred groove surfaces. Where steel pulling lines are used in the same groove as the conductor, grooves should be lined.

The characteristics of appropriate semiconductive neoprene or urethane elastomer linings are given on page 23. These elastomers can withstand a wide range of temperatures without becoming brittle or developing semipermanent flat areas, and they are hard enough to prevent the conductor from climbing up the side of the groove. Semiconductive neoprene linings should not be relied on for grounding the conductor. The induced electrical charges on conductors and pulling lines can be drained off with traveler grounds (see page 11).

BUNDLE CONFIGURATION

Where two or more subconductors are strung simultaneously, a bundle conductor traveler is required. When even numbers of conductors are strung, a symmetrical arrangement is used with an equal number of conductors on each side of the pulling line (see pages 7,8,9,10,13 and 14). An independent centersheave is provided for the pulling line.

When odd numbers of conductors are used, the center conductor can follow the pulling line in the center sheave. When this is done, care must be taken to reduce the effect of contaminants deposited in the center groove either by lining the groove with elastomer or by keeping the pulling line off of the ground by using tension or helicopter stringing methods (see page 13 and 14). However, when this is not desirable, offset type bundle travelers are used which balance the load by properly spacing the even and odd numbers of conductors on either side of the pulling line (see page 9 and 10).