Tackle Block Reeving

THE REEVING OF TACKLE BLOCKS

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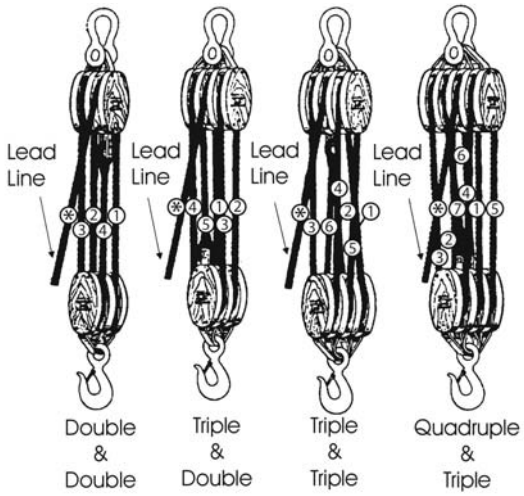
In reeving a pair of tackle blocks, one of which has more than two sheaves, the hoisting rope should lead from one of the center sheaves of the upper block to prevent toppling and avoid injury to the rope. The two blocks should be placed so that the sheaves in the upper block are at right angles to those in the lower one, as shown in the following illustrations.

Start reeving with the becket or dead end of the rope. **Use a shackle block as the upper one of a pair and a hook block as the lower one as seen below.** Sheaves in a set of blocks revolve at different rates of speed. Those nearest the lead line revolve at the highest rate of speed and wear out more rapidly. All sheaves should be kept well lubricated when in operation to reduce friction and wear.



Caution

- Exercise care when block is standing in vertical position, as the potential for tipping exists. Potential causes of tipping are unstable work area, boom movement and the reeving process.
- If work area is unstable, lay block flat on side plate.

HOW TO FIGURE LINE PARTS

Sheaves in a system of blocks rotate at different rates of speed, and have different loads. When raising and lowering, the line tension is not equal throughout the system. To help figure the number of parts of line to be used for a given load, or the line pull required for a given load, (for example, use Reeving Diagram. Only numbered lines shall be used in the calculation). The following ratio table is provided with examples of how to use it. The ratios are applicable for blocks as shown and also independent sheave systems that line is reeved through.

Ratio A Bronze Bushed Sheaves	Ratio B Anti-Friction Bearing Sheaves	Number of Parts of Line
.96	.98	1
1.87	1.94	2
2.75	2.88	3
3.59	3.81	4
4.39	4.71	5
5.16	5.60	6
5.90	6.47	7
6.60	7.32	8
7.27	8.16	9
7.91	8.98	10
8.52	9.79	11
9.11	10.60	12
9.68	11.40	13
10.20	12.10	14
10.70	12.90	15
11.20	13.60	16
11.70	14.30	17
12.20	15.00	18
12.60	15.70	19
13.00	16.40	20

$$\text{Ratio A or B} = \frac{\text{Total Load to be Lifted}}{\text{Single Line Pull (lbs.)}}$$

After calculating Ratio A or B, consult table to determine number of parts of line.

Examples:

To find the *number of parts of line* needed when weight load and single line pull are known and using Bronze Bushed Sheaves.

$$\frac{72{,}180 \text{ lbs. (load to be lifted)}}{8{,}000 \text{ lbs. (single line pull)}} = 9.02 \text{ (Ratio A)}$$

In table above refer to ratio 9.02 or next highest number, then check column under heading "Number of Line Parts" = 12 parts of line to be used for this load.

To find the single line pull needed when weight of load and number of parts of lines are known and using Anti-Friction Bearing Sheaves.

$$\frac{68{,}000 \text{ lbs. (load to be lifted)}}{7.32 \text{ (ratio B of 8 part line)}} = 9{,}290 \text{ lbs. (Single Line Pull)}$$

9,290 lbs. single line pull required to lift this load on 8 parts of a line.