

Determining Rope Length: To determine how much rope is needed for any particular lashing, add the diameters of the spars to be lashed together and multiply the result by three feet. For example, to lash two spars together, each of which is 2-inches in diameter, would require 12 feet of rope ($2 + 2 \times 3 = 12$). To lash three spars together would require 18 feet of rope ($(2 + 2 + 2) \times 3 = 18$).

Types of Lashings:

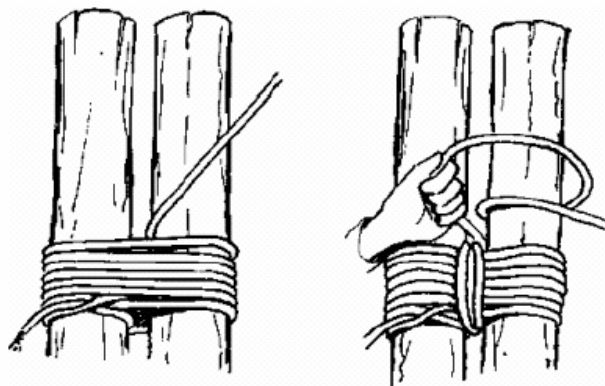
1. **Round Lashing:** The round lashing is used to bind two spars together to make a longer spar, such as for a flagpole. The round lashing has no fraps. It begins and ends with a clove hitch. To add extra strength to the lashing, drive wedges (called wigs) between the spars after the lashing has been applied.



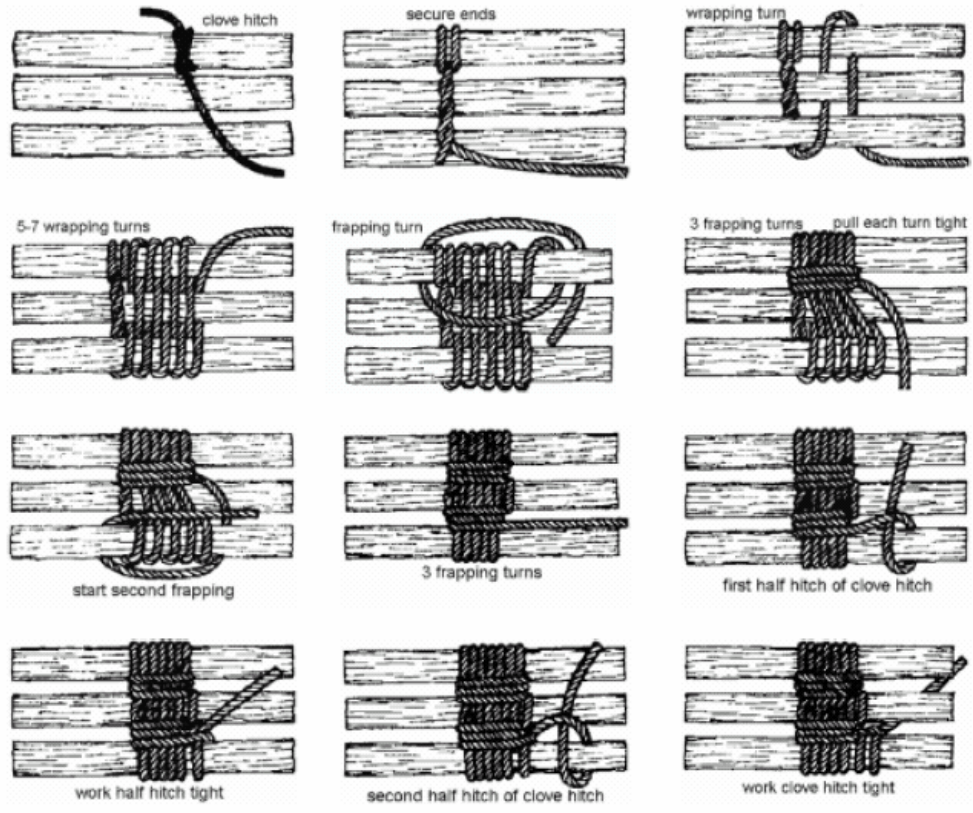
A variation of the round lashing is the so-called *West Country* method in which a series of overhand knots are tied around the spars in place of the normal wraps. It is finished with a square knot in place of the final clove hitch.



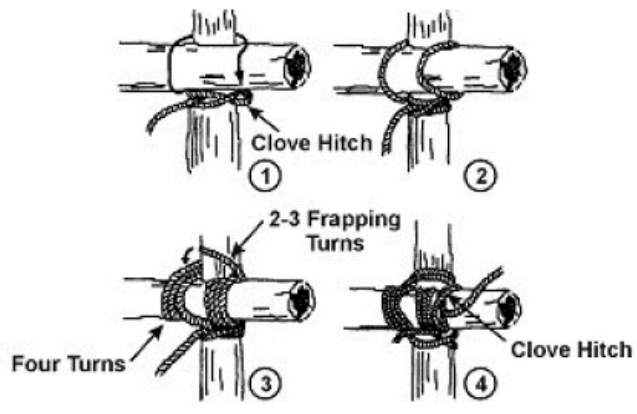
2. **Shear Lashing:** The shear lashing is similar to the round lashing, but uses frapping turns. It is used to bind two spars together that will cross each other to form a shear, such as for an A-frame.



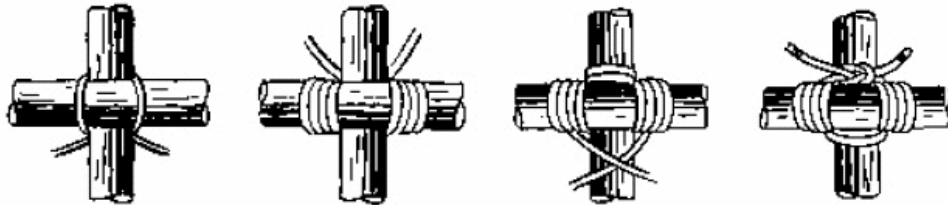
Tripod Lashing: The tripod lashing is similar to the shear lashing, but is used to bind three or four spars together to make a three- or four-legged support (tripod or pyramid). It begins and ends with a clove hitch. It differs from the shear lashing in that, rather than wrapping the rope around all three spars, the rope is woven between the spars. Frapping turns are taken between each set of spars.



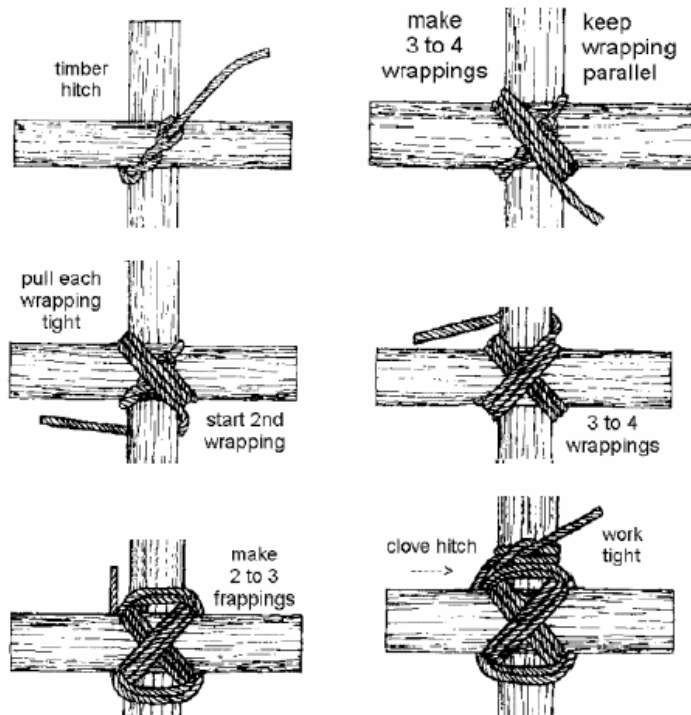
Square Lashing: The square lashing is used to bind two spars together that touch and cross each other at an angle of 45 to 90 degrees, such as for cross-braces in a table. The traditional square lashing begins and ends with a clove hitch.



A variation of the square lashing is the modified Japanese square lashing, shown below. To make this lashing, loop the rope around one of the spars and wrap both ends of the rope simultaneously as in the traditional square lashing. After taking three or four wraps, make frapping turns running the ends of the rope in opposite directions. Finish by tying the ends together with a square knot.



- Diagonal Lashing:** The diagonal lashing is used to bind two spars together that do not touch but cross each other at an angle of 45 to 90 degrees, such as for diagonal-braces in a tower. This lashing begins with a timber hitch around both spars and ends with a clove hitch.



.. Terminology:

1. Spar: A wooden pole, normally 6 or more feet in length.
2. Rung, Brace, Cross-Piece: Pieces of wood shorter than a spar.
3. Wrap: A wrap is a turn made around two spars. The minimum number of wraps is three.
4. Frap: A frap is a turn made between the spars to pull the wraps tighter. Usually only two or three frapping turns are needed.