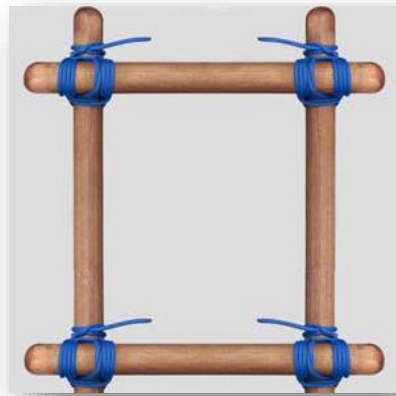


Master Guides – Knots and Lashings

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Square Lashing



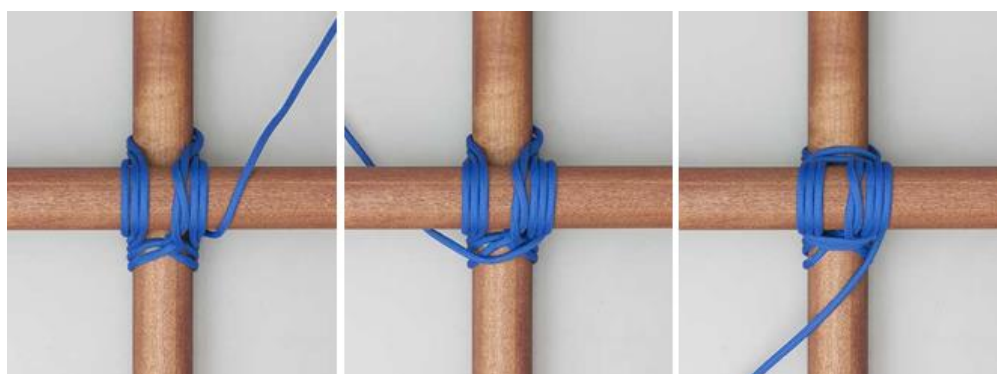
Use: The Square Lashing is used to bind two poles together. The lashing is designed to be load bearing and can be used to create scaffolding. Although the two poles usually cross each other at 90 degrees, the Square Lashing may be used when the angle between the two poles is as little as 45 degrees.

Structures: Square lashings can be used to make a rectangular frame as shown here. Many applications have been described including making support frames; when two trees are close enough, a table can be supported by a pair of poles or branches lashed horizontally either side of the trees; a fence can be constructed by driving poles into the ground and then joining them with bars attached with Square Lashings; and a raft can be created by lashing bamboo poles across each other.

Steps: Begin with a clove hitch around the support pole. Twist short end around long and wrap the rope around both poles alternately going over and under each pole about three or four turns. Each extra turn is added inside the previous one on the horizontal pole but outside the previous one on the vertical pole. This presents a flat array of turns and each turn will be subject to tightening. Do not cross your lashes at any point.



Frapping Turns: The turns surrounding the lashing at right angles exert a tightening effect on the lashing. These turns are known as Frapping Turns. Pulling them as tight as possible makes the Lashing more secure.



Finish: The final half hitches may be located on top of the Frapping Turns, i.e., add two more Frapping Turns in the form of Half Hitches.



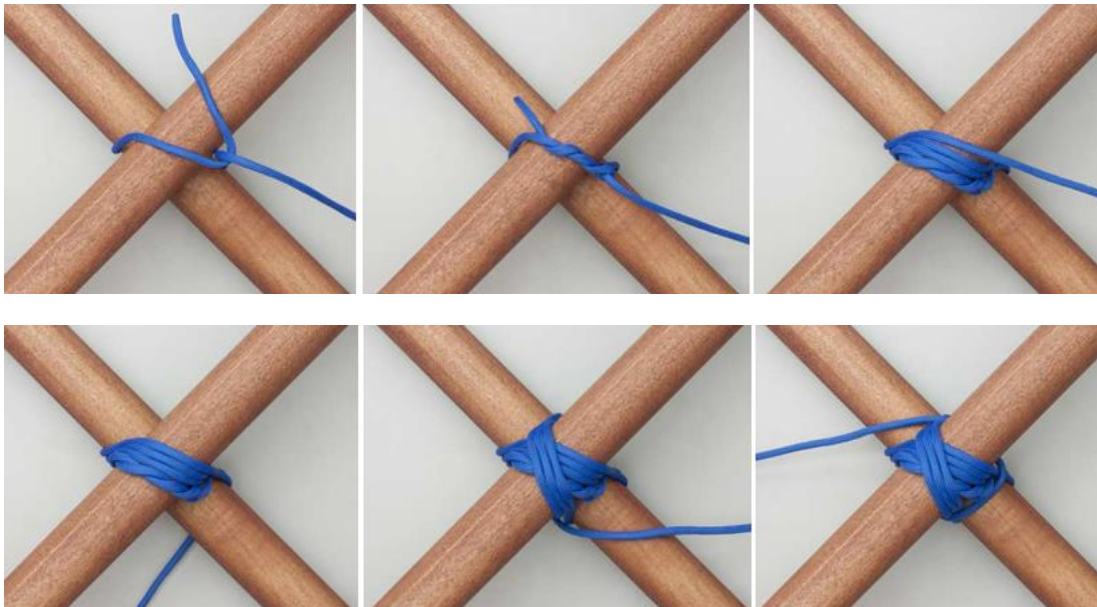
Tighten the lashing by surrounding it with three or four frapping turns. Finish with two or three tight half hitches.

Diagonal Lashing



Use: The Diagonal Lashing is used to lash two spars together. Unlike the Square lashing which works for right angle crossings, the diagonal lashing secures poles crossing each other at a variety of angles. When the angle between the poles is closer to 45 degrees, the diagonal lashing is more appropriate.

Steps: Start with a single Timber Hitch around both poles. Wrap three or four turns around the two poles in one axis followed by three or four turns in the other axis. Tighten the lashing by surrounding it with three or four frapping turns. Finish with a Clove Hitch. The choice of a timber hitch to start the lashing is important. Sometimes there is a gap between the poles. Pulling on the Timber Hitch closes the gap and allows the lashing to proceed with poles touching. A clove hitch around one pole could not be used to pull the poles together and might come untied.



Frapping Turns: The turns surrounding the lashing at right angles exert a tightening effect on the lashing. These turns are known as Frapping Turns. Pulling them as tight as possible makes the Lashing more secure.



Continuous Lashing



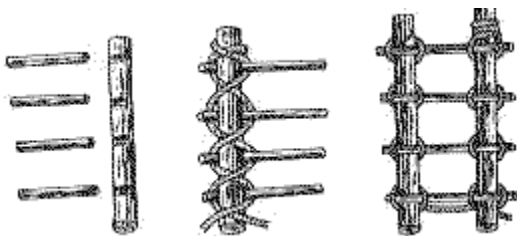
Use: Is probably the most fun of all the lashing techniques because it is useful in creating shelves, dishwashing stations, tables, and many other wonderful structures in your campsite. The design possibilities for this type of lashing are endless.

Steps: Start with a string/rope that is 4 or 5 times longer than the length of your project. Find the middle/center of the string and tie a clove hitch around one of the support poles.

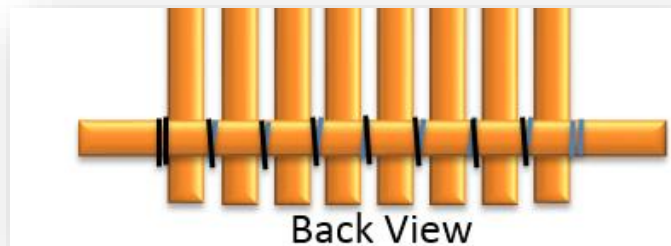
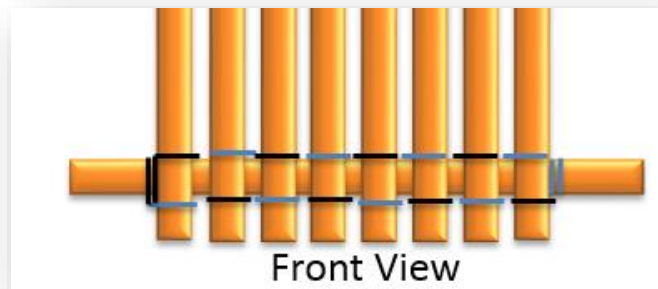
Lay a surface stick on top of the support poles pole and bring both ends of the string over this surface stick.

Continue back down below the support pole. Cross the string under the support pole. Bring it back up and over the next surface stick and then back down and cross under the support pole.

Repeat for the remaining surface sticks. End off with a square knot when all the surface sticks are attached.

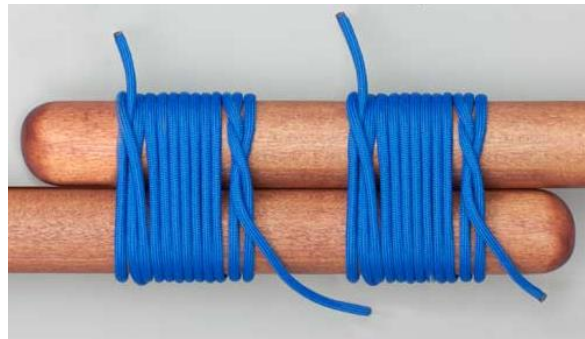


Follow the same steps in the second side of the structure.



Please note that I'm using 2 colors to show how the rope is interlaced between the wood. The Lash is used with only one rope.

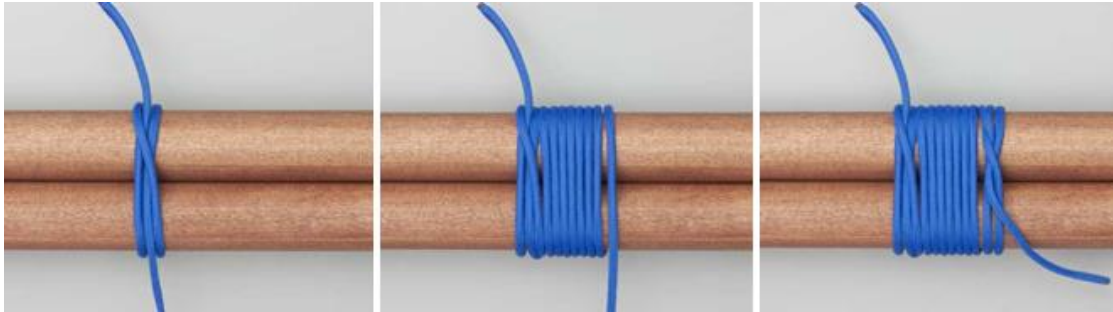
Round Lashing



Use: The Round Lashing is used to lash two parallel spars together to make a longer one.

Steps: Start with a Clove Hitch around both poles. Wrap six or eight turns around the two poles. Finish with another Clove Hitch. Two Round Lashings can be used to make a longer pole.

Increased Security: Many descriptions describe the difficulty of making the lashing tight enough to be secure. A common recommendation is to hammer two wedges between the poles, one above and one below the lashing. This tightens the lashing and makes it more secure.



Shear Lashing



Use: The Shear or Sheer Lashing is used to lash the ends of two poles together. The other ends are separated to make a pair of Legs. Shear legs support weight. A single pair can be controlled with a rope as they lean over to lift a heavy object.

Steps: The two poles are laid side-by-side, and an initial Clove Hitch is tied round one pole. A Round Lashing is then tied around the two poles near one end. Then two or three Frapping turns are tied binding the lashing turns tightly. Starting these turns can be awkward. It is sometimes necessary to spread the legs apart to open the poles to make it possible. The Lashing is completed with another Clove Hitch. The other ends of the poles are then separated to make a pair of Shear Legs.

Frapping Turns: The turns surrounding the lashing at right angles exert a tightening effect on the lashing. These turns are known as Frapping Turns. Pulling them as tight as possible makes the Lashing more secure.



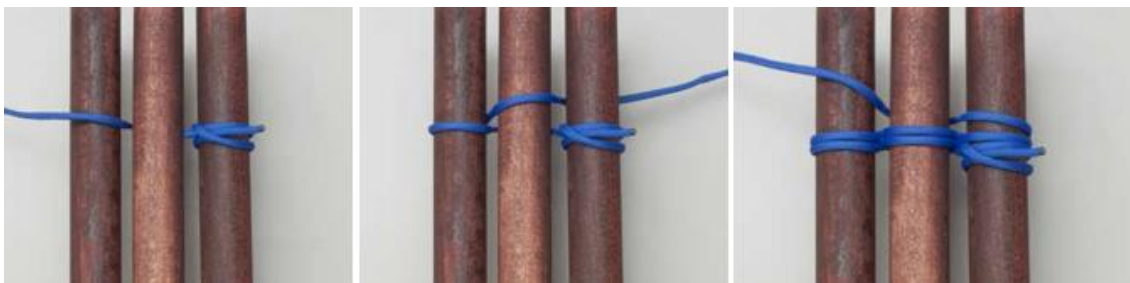
Tripod Lashing



Use: Four tripods can be used to support a pair of horizontal poles under a table. The method shown is preferred because the legs bind against each other for greater stability.

Racking Turns: The lashing passes to and from between the poles. This increases the contact between rope and wood and reduces slipping. Such turns are known as Racking turns.

Steps: Start with a Clove Hitch around one pole. Wrap about six racking turns around the three poles weaving in and out between them. Make two or three tight Frapping turns in the two gaps. Finish with a Clove Hitch. Cross the two outside poles to form the tripod.



Frapping Turns: The turns surrounding the lashing at right angles exert a tightening effect on the lashing. These turns are known as Frapping Turns.

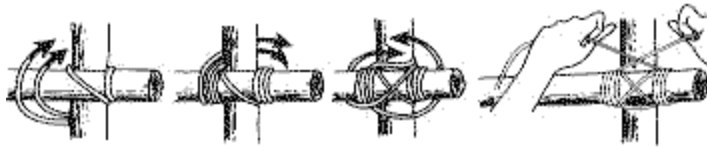




Options: Some descriptions start with the center pole extending in the opposite direction from the two side legs. Forming the tripod then twists and tightens the lashing and can even break it if tied too tightly. A lashing which is too tight or extends for too great a length may either prevent the tripod from being formed or may overload the rope. In this respect the Tripod Lashing differs from other lashings: it is possible to make it too tight! On occasion, trial and error may be required to obtain the correct tension.

NOTES

Japanese square lashing



A lashing used in lightweight construction work. It is equivalent to a square lashing and when done correctly should be just as strong. End the lashing with a square knot.

Notes on A-Frame Lashing: An A-frame lashing, or Sheer Legs is made in the same way as a Sheer Lashing with the lashing and frapping turns made slightly loose so that the poles can be opened out. It is often used to raise a boat mast or to form the legs of a rope bridge. You must take care to ensure that the legs of the frame do not slip.

Notes on Tripods: Make a tripod by using a Figure-of-eight lashing on three poles. Set up the tripod by crossing the outside poles so that the cross point of the poles is under the center pole. This makes sure that part of the load is taken by the wood in contact. If a symmetrical arrangement of the poles is needed within a structure the tripod can be set up by rotating the poles around the lashing. This means that the load is supported only by the ropes and the joint becomes flexible and so the tripod may become.