

Eye Splice for Brait (8-Strand Plaited Rope)

Yale Cordage, Inc. 2004

Purpose:

These instructions detail the procedure to fabricate an eye splice in Yale's Brait products or any suitable 8-strand plaited rope. An eye splice is a permanent loop termination that maximizes the breaking strength of the rope.

Yale Products:

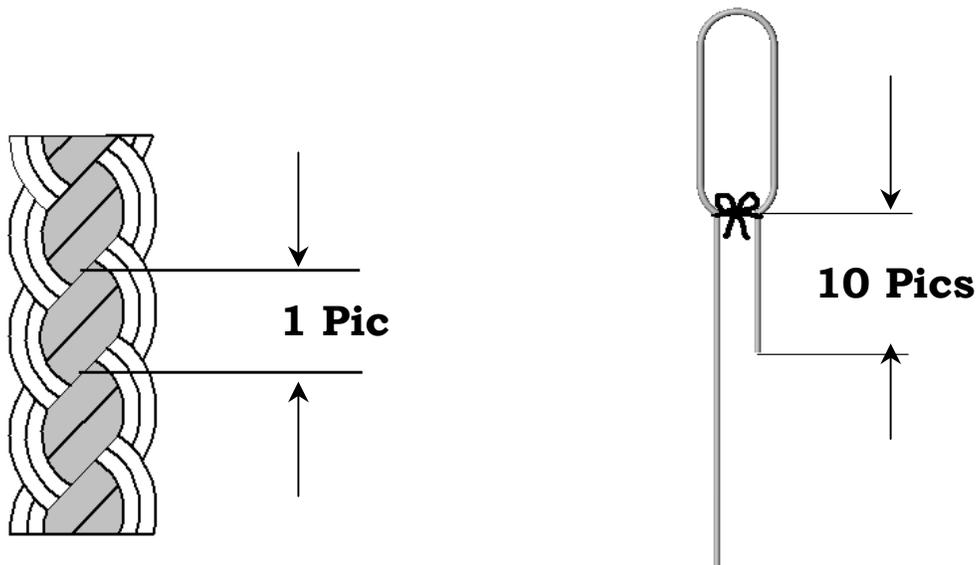
Nylon Brait
Polyester Brait
Hy-Dee Brait
Spun Polyester 8-Plait

Tools Needed:

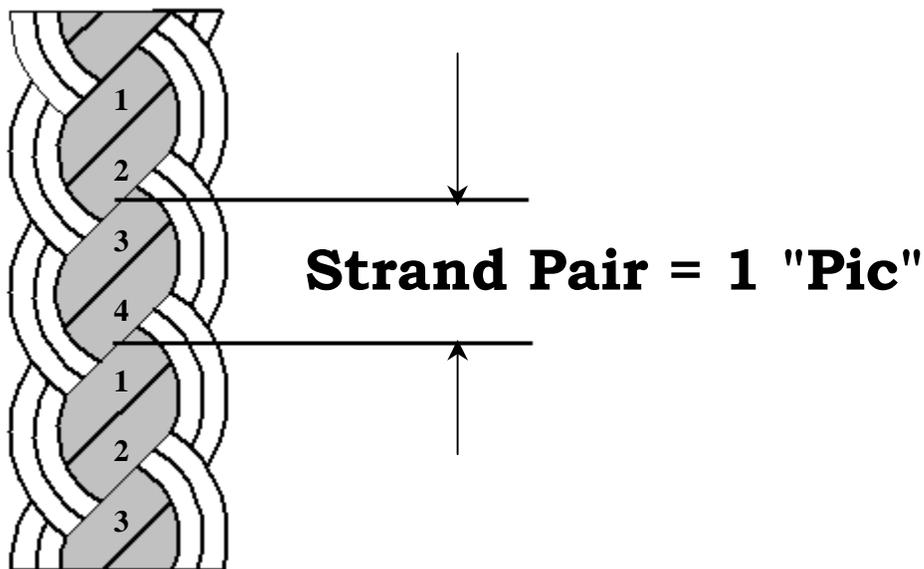
Scissors, Swedish fid, measuring tape, adhesive tape, marking pen, twine

Procedure:

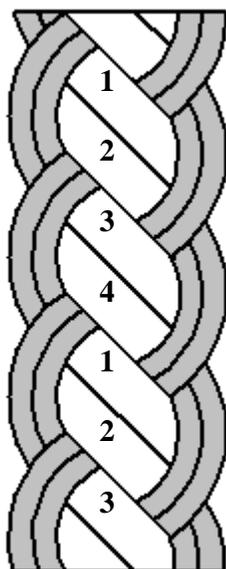
(A) To begin, determine the tail length needed by counting ten "pics" from the bitter end. Measure distance from end of braid and mark with marking pen. Next, form the desired eye size from this mark towards the standing part of the rope. Secure the eye from slipping with small twine.



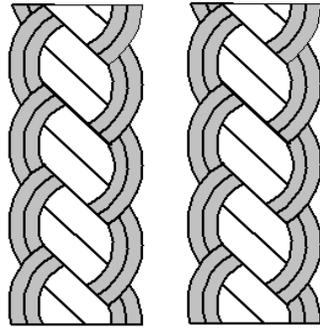
(B) Note that the rope is constructed of eight strands arranged in four strand pairs. Four strands (two strand pairs) rotate to the right, shown here in gray.



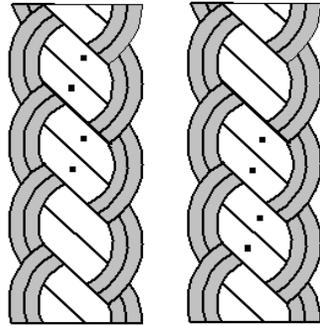
Rotate 90° (with the standing part as the axis) and note the remaining four strands (two strand pairs) rotate to the left, shown below in white.



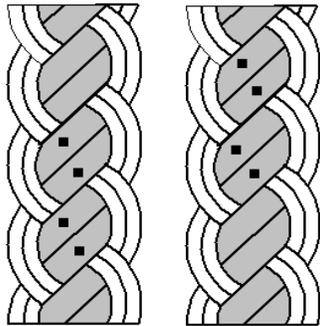
(C) In making the splice, it is important to remember that the right-laid strand pairs of the tail will follow the right-laid strand pairs of the standing part, moving away from the eye. Similarly, the left-laid strand pairs will follow the left-laid strand pairs. The tucks are made where the strands of the standing part are naturally "tucked" under the opposing strand direction. In the splice region, the size or volume of the braid geometry is increased (but not changed) by tucking strand pairs of the tail parallel with strand pairs of the standing part.



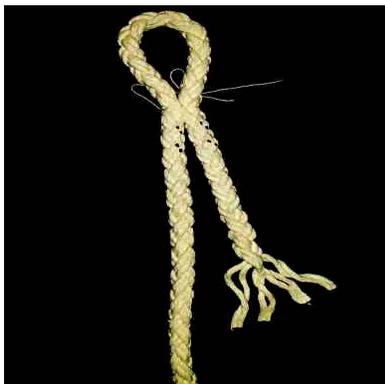
1) Starting with the left-laid strand pairs for example only, (in practice it is acceptable to start with either right-laid or left-laid strands), position the eye so that the left-laid strand pairs are facing up.



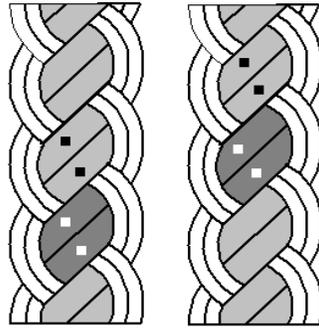
2) Mark four left-laid strands (two pairs) on both the tail and standing part of rope – just below the twine securing the eye.



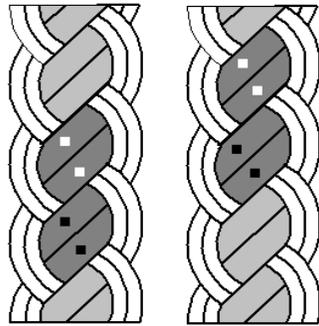
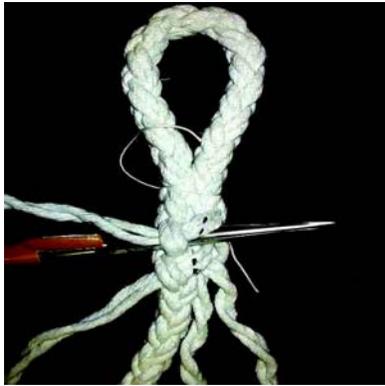
3) From the marks made in step #2, move to the right laid strands by rotating 90° around the standing part towards the tail. Position these right-laid strands to face up by flipping the eye over and then rotating the inside strands outward. Mark four right-laid strands using the same method as the left-laid strands.



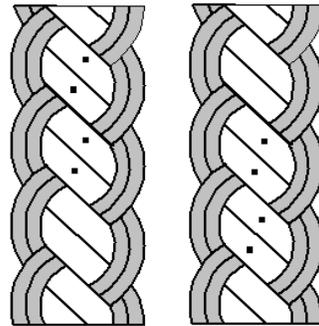
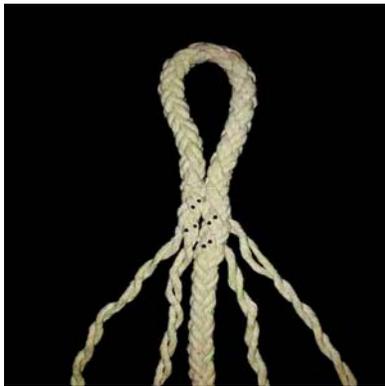
4) Unbraid the strands of the tail up to the first marked pair. Tape the ends of each strand pair together and cut through tape for a clean end. Continue unlaying until only the marked right-laid strand pair furthest from the eye is free.



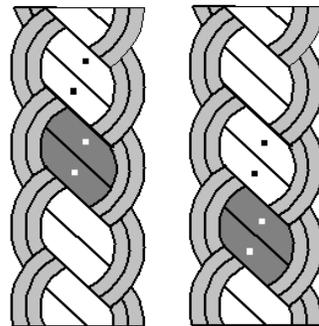
5) Using the "Swedish fid" to create a tunnel, tuck free right-laid strand pair from tail (shown at right in dark gray) under the nearest left-laid strand pair (of standing part) so that the pair runs parallel with the marked right-laid pair of standing part (shown at left in dark gray).



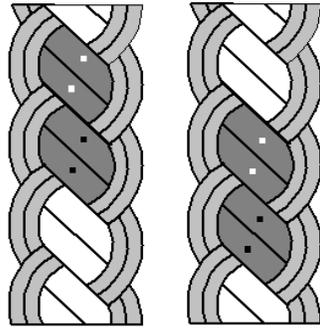
6) Free the remaining marked right-laid strand pair in the tail. (Do not unlay the tail further but rather grab and pull away from the bitter end to free.) Tuck under the nearest opposing left-laid strand pair, as before, so that this marked strand pair lays parallel with the second marked strand pair of the standing part.



7) Flip the eye over again so that the left-laid, previously marked strands are up.



8) Tuck the marked left-laid strand pair that is furthest from the eye first (shown on left in dark gray). Tuck under the right-laid strand pair on the standing part, so that it runs parallel to the marked, left-laid strand pair of the standing part (shown on right in dark gray).



9) Tuck the remaining left-laid strand pair of the tail (shown at left in dark gray with white marks). Tuck under the opposing right-laid strand pair of the standing part so that it runs parallel with the marked, left-laid strand pair of the standing part (closest to the eye).

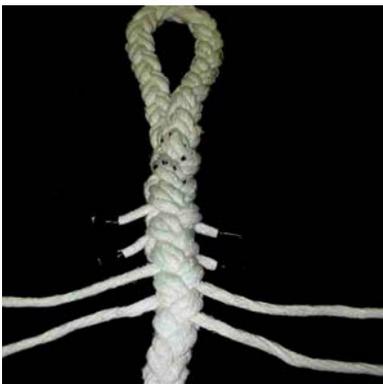


10) Note that all strand pairs have been tucked once now. The left-laid strands should all exit the rope on the same side. The right-laid strands should exit the rope 180° around the circumference from the left-laid strands as shown in picture on left.

11) Tuck each strand pair an additional 3* "full" tucks. It is helpful to work one strand direction at a time (right-laid or left laid) tucking both strand pairs once and then switching to the opposite-laid pairs. Follow the strand pairs of the standing part carefully, tuck where the existing strand pairs are naturally "tucked" under the opposing strand direction in the braid. In this way the strands of the tail are laid parallel to the strands of the standing part, moving away from the eye.



12) After each strand pair has 4 "full" tucks. Tape and cut one strand of each strand pair away. Continue with 2* more tucks for each single strand now. These are often referred to as "half" tucks.



13) After 4* "full" tucks and 2* "half" tucks, the splice is nearly finished. Tape and cut the remaining strands to finish the splice. If desired, the strand ends may be "hot cut" and sealed to about 1/4 inch. The tail ends will pull closer to the braid when the splice is loaded and exercised. This retraction is normal unless it results in the loss of a "tuck".

* Refer to Table 1 for specific splice tuck requirements by rope fiber

Table 1 – Brait/ 8-plait Splice Tuck Requirements by rope fiber

Splice Tuck Requirements by Rope Fiber		
Rope Fiber	Full Tucks	Half Tucks
Nylon	4	2
Polyester	4	2
Spun Polyester	3	2
Hy-Dee Copolymer	4	2

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