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# Splicing Instructions

## About Samson Splicing Instructions

**Please Note:** All downloadable documents on this page are in Adobe Acrobat Reader format (PDF). If you do not have the **FREE Acrobat Reader** [click here to download it](#). All estimated download time amounts given are for 56K connections. Also note, these are just estimates.

SAMSON Rope Technologies is known for providing easy-to-follow splicing instructions for our customers. In the past some of these instructions were created specific to each product (by name). In an effort to provide the most user friendly instructions, we have simplified our approach by implementing two changes. We now title all of the splicing instructions to be specific to construction and fiber content rather than specific by name.

The construction designation will appear as 3-Strand, 8-Strand, Core Dependant, etc.

Additionally, SAMSON is offering new splicing instructions for Class 1, 12-Strand (eye splice and end-for-end). These instructions supersede those found in our Splicing Manual (red book) and are available on individual sheets.

We are happy to offer all our splicing instructions are available by downloading from this web-site.

***The fiber content is noted as "Class 1" or "Class 2" ropes.***

### Class 1:

Class 1 ropes are made from any or all of the following fibers: olefin, polyester, or nylon.

### Class 2:

Class 2 ropes are made in whole or in part from any of the following high modulus fibers: Dyneema, Vectran, Technora, and PBO.

### Our Splicing Instructions Work!

"...I was learning to splice 3-strand, and downloaded instructions from three or four sites with no success - I just wasn't "getting it".

Finally found your **simple one-page instructions** and in **minutes** I was done.

Thanks for making it an easy learning experience!"


-Randy Smith

## Downloadable Splicing Instructions

### 3-Strand

#### Tuck Splice for Class 1 3-Strand Ropes

[Download File](#)

173 K - File Type:   
Est. Download Time: 30 Sec

### 6-Strand

#### JetKore Splicing Instructions

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207 K - File Type:   
Est. Download Time: 2 Min. 5 Sec.

### 8-Strand


#### Tuck Splice for Class 1 8-Strand Ropes

[Download File](#)

207 K - File Type:   
Est. Download Time: 2 Min. 5 Sec.


## **Tuck Splice for Class 2 8-Strand Ropes**

[Download File](#)

306 K - File Type:   
Est. Download Time: 58 Sec

## **End-For-End Splice for Class 2 8-Strand Ropes**


[Download File](#)

306 K - File Type:   
Est. Download Time: 58 Sec

## **8x3 - Strand**

### **Tuck Splice**

[Download File](#)

410 K - File Type:   
Est. Download Time: 82 Sec

### **End-for-End Splice**

[Download File](#)

321 K - File Type:   
Est. Download Time: 1 Min

## **12-Strand**

### **Eye Splice Class 1 12-Strand Ropes**

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792 K - File Type:   
Est. Download Time: 1 Min. 30 Sec

### **Eye Splice Class 2 12-Strand Ropes**

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792 K - File Type:   
Est. Download Time: 1 Min. 30 Sec

### **End-for-End Splice for Class 1 12-Strand Ropes**

[Download File](#)

696 K - File Type:   
Est. Download Time: 1 Min. 54 Sec

### **End-For-End Splice Class 2 12-Strand Ropes**

[Download File](#)

565 K - File Type:   
Est. Download Time: 2 Min. 25 Sec.

### **Dynalene Instructions for Covering 12-Strand Ropes**

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565 K - File Type:   
Est. Download Time: 2 Min. 25 Sec.

## **16-Strand**

### **Eye Splice for Class 1 16-Strand Arborist Climbing Lines**

[Download File](#)

180 K - File Type:   
Est. Download Time: 36 Sec

## **Round Plait**

## **Tuck Splice for Class 1 Round Plait Ropes**

### **Class 1 RP-12 End For End**

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148 K - File Type:   
Est. Download Time: 25 Sec.

[Download File](#)

696 K - File Type:   
Est. Download Time: 1 Min. 54 Sec

## **Class 1 Double Braid**

### **Class 1 Double Braid Eye Splice**

[Download File](#)

300 K - File Type:   
Est. Download Time: 2 Min. 5 Sec.

### **Class 1 Double Braid End-for-End Splice**

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280 K - File Type:   
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### **Class 1 Double Braid Back Splice**

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300 K - File Type:   
Est. Download Time: 2 Min. 5 Sec.

### **Class 1 Double Braid Eye Splice for Used Rope**

[Download File](#)

300 K - File Type:   
Est. Download Time: 2 Min. 5 Sec.

## **Class 2 Double Braid**


### **Class 2 Core-Dependent Double Braid Splicing Instructions**

[Download File](#)

1.24 MB - File Type:   
Est. Download Time: 14 Min

### **Class 2 Double Braid End-for-End Splicing Instructions**

[Download File](#)

89 K- File Type:   
Est. Download Time: 26 Sec.

### **Stripping Cover from Core-Dependent Class 2 Double Braids**

[Download File](#)

106 K - File Type:   
Est. Download Time: 25 Sec.

### **Splicing Core End Only Class 2 Core Dependent Double Braids**

[Download File](#)


547 K - File Type:   
Est. Download Time: 2 Min. 7 Sec.

## **Miscellaneous**




## Lock - Stitch & Whipping Procedures

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244 K - File Type:   
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## Special Tips for Splicing

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74 K - File Type:   
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## Special Tips for Splicing Used Rope

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74 K - File Type:   
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## Additional Rope Needed for Samson Class 1 Splices

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63 K - File Type:   
Est. Download Time: 10 Sec

### Questions?

Call us at 1-800-227-7673 or E-Mail [custserv@samsonrope.com](mailto:custserv@samsonrope.com)

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# Tuck Splice Class 1

## 3-Strand Ropes

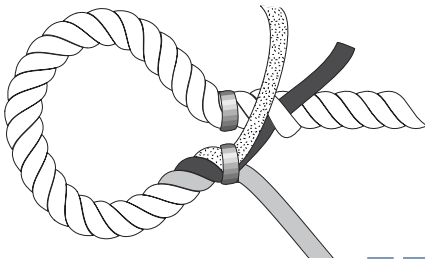
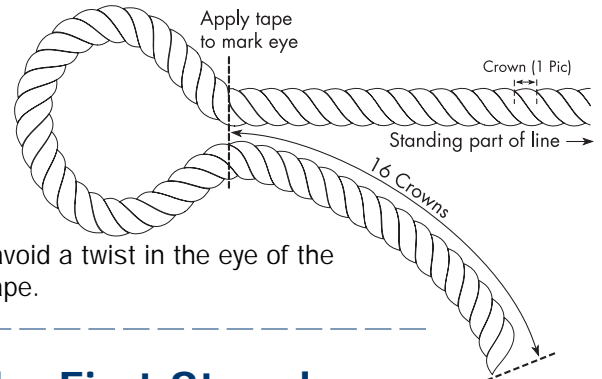
Class 1 3-strand ropes are made from any or all of the following fibers: olefin, polyester, or nylon.

Although the 3-strand splice is the most common splice, and simple to perform, technique is important to preserve splice strength. Take care that the tucks lie neatly; rope strength can be lost if the strands are twisted incorrectly.



**Tools Required:** Fid; tape or whipping twine; marking pen, scissors or a sharp knife; hot knife or heat source; ruler.

**Getting Started:** From one end of the rope, count back 16 crowns. Tape this section. Unlay the rope up to the tape then tape the end of each strand. Form the eye and tape the standing part of the rope. To avoid a twist in the eye of the finished splice, untwist the rope one-half turn between the pieces of tape.

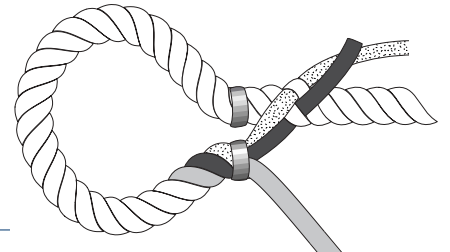


### Step 1 ..Tucking the First Strand

With a fid or your finger, raise a strand just below the tape on the standing part of the rope and insert the middle working strand under it and pull the strand through. Mark the first tucked strand with a single hash mark; numbering the working strands will help you keep track of the tucking process.

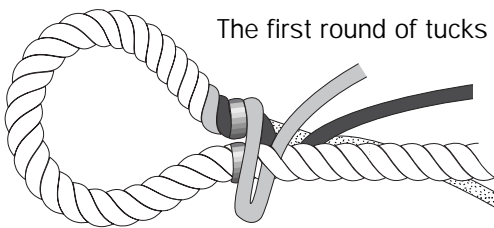
### Step 2 ..Tucking the Second Strand

Tuck the next working strand over the strand you just tucked under and under the strand just below it. Mark this strand with a double hash mark.



### Step 3 ..Tucking the Third Strand

Turn the entire piece over. There is one working strand left to tuck and there is one strand left in the standing part of the rope that does not have a working strand under it. Make this tuck, continuing to work counter to the lay or twist of the rope. Mark this strand with a triple hash mark.



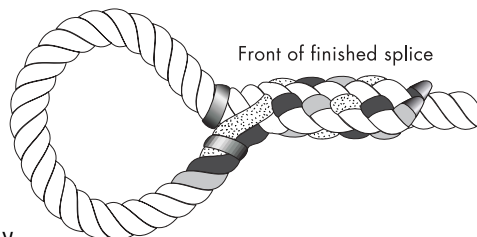
The first round of tucks is complete. Tighten if necessary by pulling on the strand ends.

When you tuck, take care to use all three strands in each round and that you tuck under a strand in the standing part of the rope and not under one of your working strands.

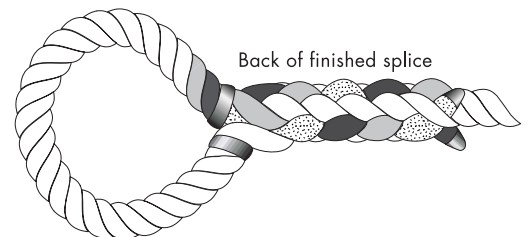
### Step 4 ..Finishing the Splice

Perform four more complete tucks. Tighten tucks if necessary.

Both the front and the back of the splice should resemble the illustrations shown.



Front of finished splice



Back of finished splice

# Splicing Instructions for JetKore®



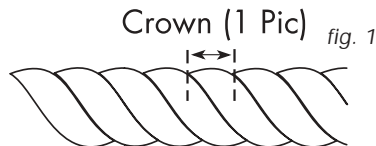
## Tools Required...

A splicing fid or marlinspike, sharp knife or scissors, plastic or masking tape, marking pen, six feet of heavy twine.

## Preparing The Rope...

1. Remove a sufficient length of rope from the reel to furnish the required eye.

2. Tape the rope approximately 36 crowns from the end (fig. 1 & fig. 2).



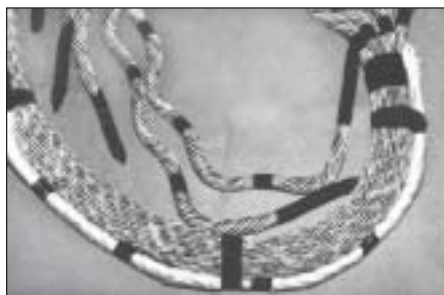
3. Select one strand and tape the end.



4. Remove this strand completely from the rope holding the twist in the strand and tape it at six to eight inch intervals throughout its length (fig. 3).

5. Remove the remaining five strands one at a time and proceed as outlined above.

6. Tape the core at six to eight inch intervals and lay it back along the rope. Tape it to the rope (fig. 4).



## Making The Splice...

7. Lay out the required eye size and put the taped junction of the strands on top of the standing part of the rope.



fig. 5

8. Lay three strands on the left side of the rope and the other three strands on the right side of the rope (fig. 5).

9. Tuck the left topmost strand under the strand nearest to it against the lay of the rope (fig. 6a & 6b).



fig. 6a



fig. 6b

- Pull the strand up snugly (fig. 6c).



fig. 6c

fig. 7



10. Insert a marlinspike under the next strand directly below the first tuck. Pull the first strand past the marlinspike out of the way (fig. 7).

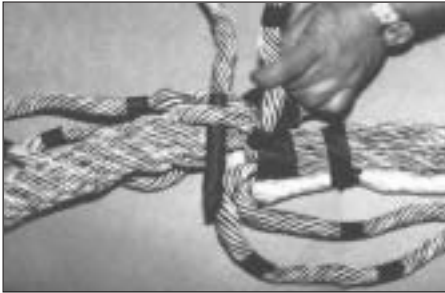
11. Remove the marlinspike and push the second strand through. Pull the strand up snugly.
12. Insert the marlinspike under the next strand directly below the second tuck and proceed as above for the third strand.

fig. 8



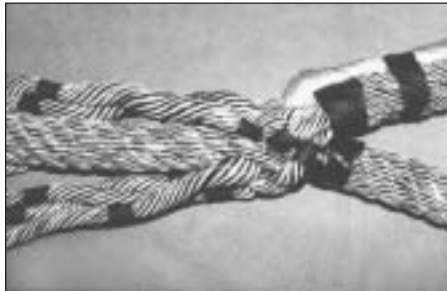
13. Turn the entire eye assembly over into the direction of the lay (fig. 8).

fig. 9



14. Insert the marlinspike under the next strand directly below the third tuck. Pull the third strand past the marlinspike out of the way (fig. 9).

fig. 10



15. Remove the marlinspike and push the bottom right side fourth strand through. Pull the strand up snugly (fig. 10).

16. Insert the marlinspike into the next strand directly below the fourth strand and proceed as above for the fifth strand.
17. Insert the marlinspike into the next strand directly below the fifth strand and proceed as above for the sixth strand.
18. Pull or snap all six strands to make sure that they are snug and even around the circumference of the rope.
19. Turn the entire eye assembly a full turn to restore the lay in the rope.

20. Continue to tuck the strands as noted above, until each strand has been tucked a total of six times (fig. 11).

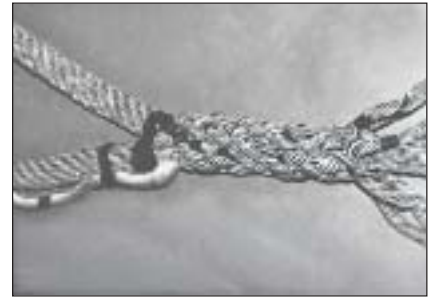


fig. 11

## Securing The Core...

21. Tuck the core completely through the splice at three to four inch intervals throughout the length of the splice pulling it up snug on each tuck (fig. 12).

fig. 12



## Finishing the Splice...

22. Lay the ends of the strands along the rope keeping them evenly spaced around the circumference (fig. 13).

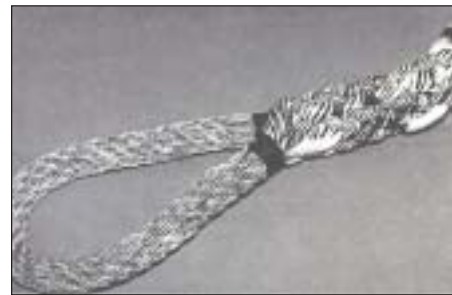


fig. 13

23. Securely wrap the strands and rope together with six feet of heavy twine starting four inches from the end of the splice and continuing for about one foot.
24. Cut off the exposed strands at an angle, tapering the cut down and toward the rope.
25. Now tape the entire splice twice covering the ends of the strands and the portion wrapped with twine.

*Splicing instructions are intended only for the use of those experienced and knowledgeable in splicing techniques, Samson cannot be held liable for the performance of splices done by non-Samson personnel.*

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# 8-Strand Tuck Splice - Class 1

8-Strand Class 1 ropes are made from any or all of the following fibers: olefin, polyester, or nylon.

The eye splice is used to place a permanent loop in the end of a rope, generally for attachment purposes to a fixed point. An eye is also used to form the rope around a thimble, which is used to protect the rope, especially when it is to be attached to a shackle, chain or wire rope.



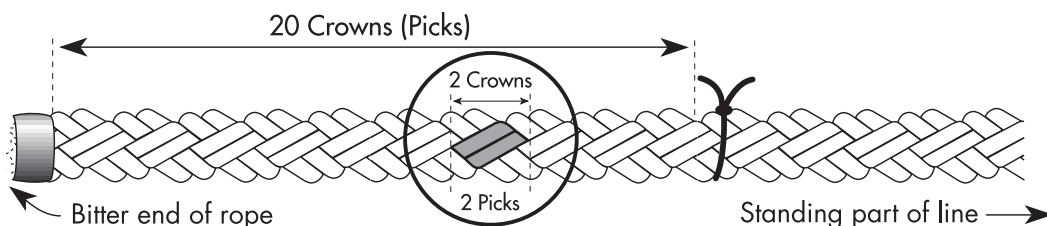
This splice is in accordance with Cordage Institute instructions for use in "Standard Test Methods for Fiber Rope" STM 6/80. This provides for the required strength retention for 8-strand (plaited) synthetic fiber rope as given in the Cordage Institute Rope Specifications.

## Getting Started

Plaited rope is no more difficult to splice than 3-strand. It is made of 8-strands grouped in 4 pairs. 2 of these pairs turn to the left and 2 to the right. The illustrations show the 2 pairs turning to the left in white and the 2 pairs turning to the right in gray. They will be referred to as the "white" and "gray" pairs. Note: The gray pairs are diametrically opposite one another but at a 90-degree angle to the white pairs and vice-versa.

**Tools Required:** A splicing fid or marlinspike, sharp knife or scissors, plastic or masking tape, marking pen, 10-inches of twine.

**Eye Size:** The size of the eye is determined by bending the bitter end of the rope back over itself for a distance equal to the desired length of the eye plus a length of 10 picks (crowns).



**Preparation:** If the rope which you are about to splice is all of one color, mark those pairs which turn to the right so that they will conform with the gray pairs in the illustrations. Count back a distance of 20 picks from the end and tie a string securely around the rope so it passes directly over the center of both pairs of gray strands. Place the knot so that it is directly on top of one of these pairs. It is important that this be tied securely to prevent slipping. Now, unlay the pairs of strands back to the string. Making sure not to mix, or twist them, tape the ends of the pairs together as shown in *fig. A*.

## Step 1

Hold or lay the rope so that the pairs of white strands are on top and bottom with a knot to the right as you look toward the end.

## Step 2

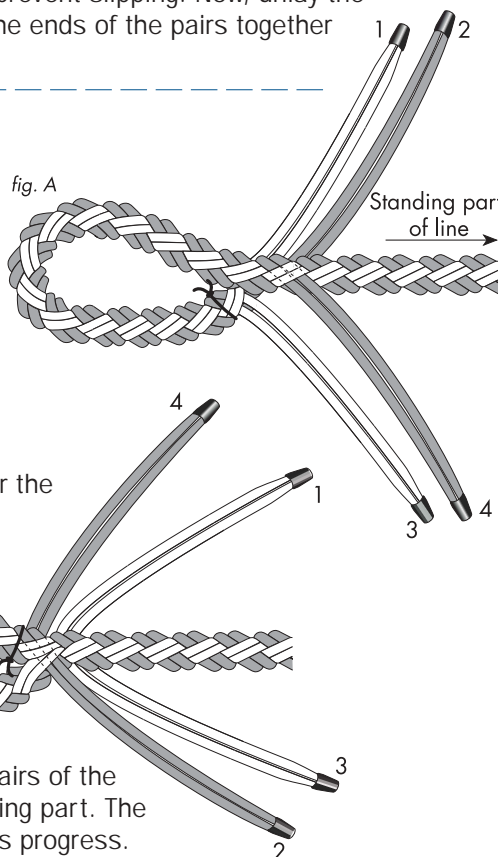
Bend the rope over to the desired eye in such a way as to keep the knot inside the loop as shown in *fig. A*.

## Step 3

Using the fid to make clearance and starting with the gray pairs, tuck them under the diametrically opposite white pairs as shown in *fig. A*. **Make sure you do not disturb the lay of the pairs.** Do not twist them so that the individual strands cross over one another in the pair.

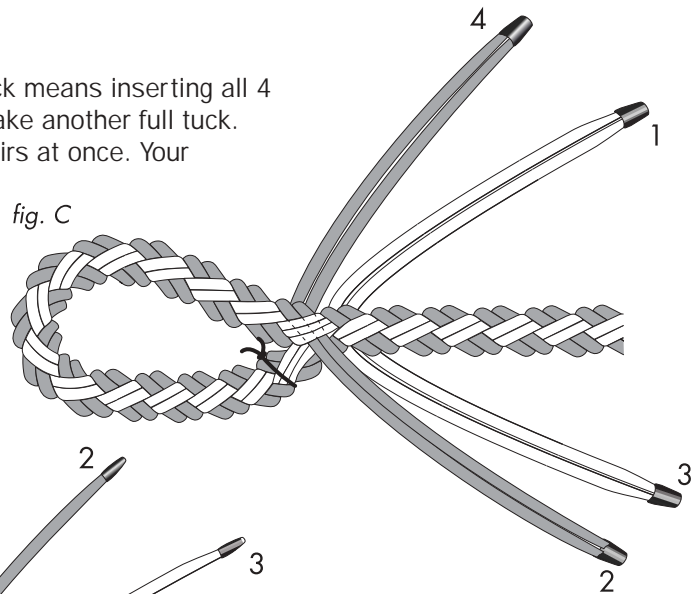
## Step 4

Now turn eye over, tuck the white pairs under the diametrically opposite gray pairs as shown in *fig. B*. Note that in *fig. B* the splice is turned over from *fig. A*. The white pairs to be tucked should follow the white pairs of the standing part and the gray to be tucked should follow the gray pairs of the standing part. The ends in the drawing have been numbered to help show their position as the tucks progress.



## Step 5

Now you have your eye with the first full tuck complete (a full tuck means inserting all 4 pairs); pull all 4 ends down firmly. Starting with the gray pairs, take another full tuck. By starting with the gray pairs you avoid having to go under 2 pairs at once. Your splice should now look like **fig. C**, (showing same side as **fig. A**). From here on, you should have no difficulty completing the splice.

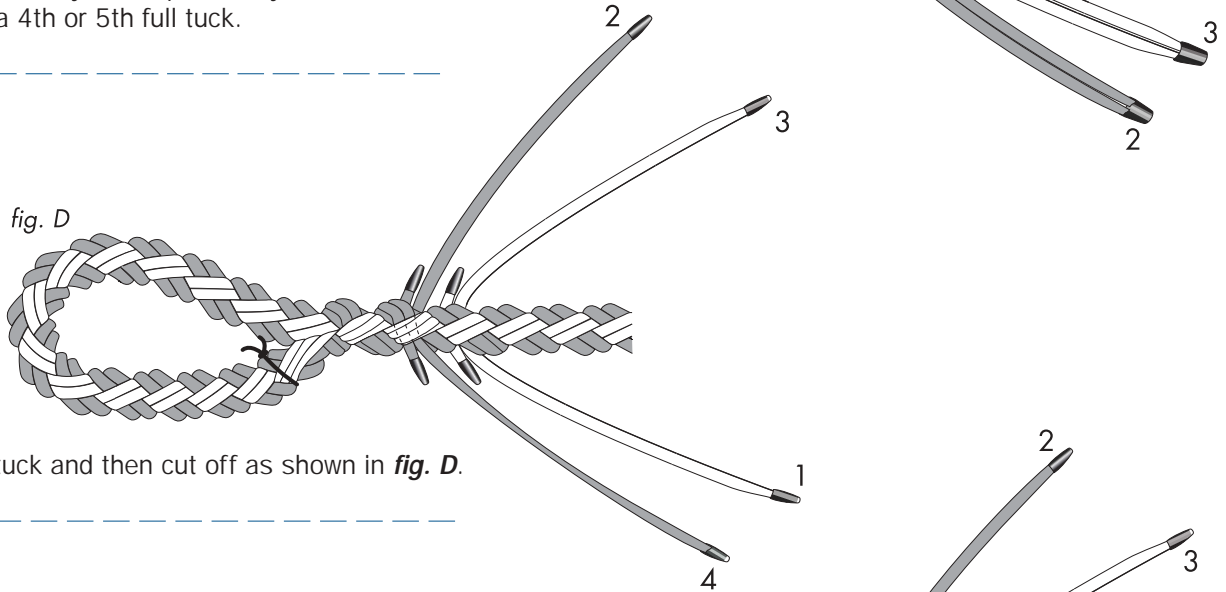


## Step 6

Now starting with the gray pairs, take at least one more full tuck. With a very soft rope, it may be necessary to take a 4th or 5th full tuck.

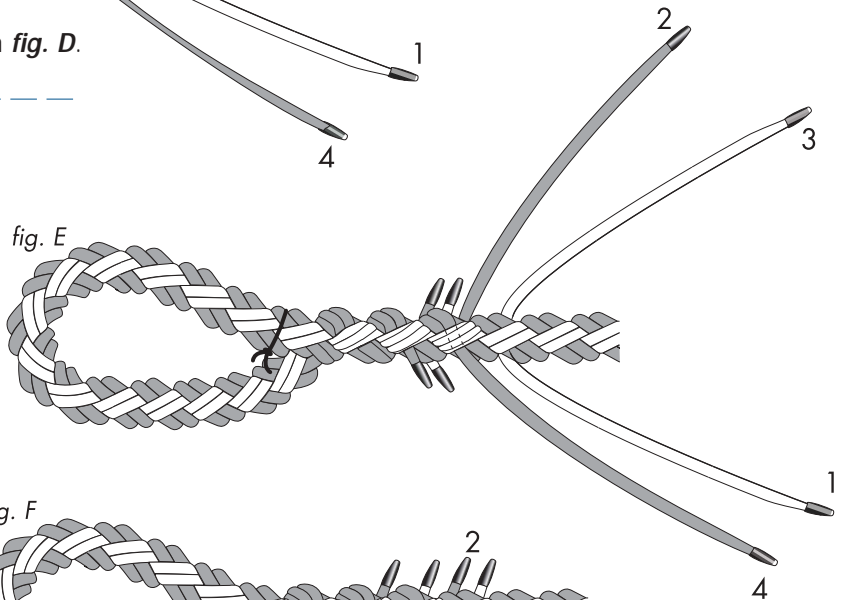
## Step 7

Having completed the 3rd full tuck (or 4th or 5th if necessary) select the strand closest to the eye in each pair. Tape this strand close to where it emerges from the tuck and then cut off as shown in **fig. D**.



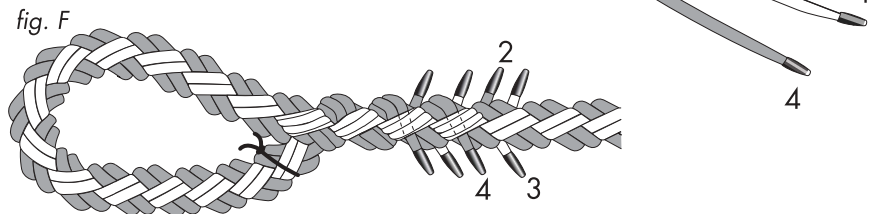
## Step 8

Now, splice your remaining single strands just as before for another full tuck. Your splice should now appear as shown in **fig. E** (showing side opposite that shown in **fig. D**).



## Step 9

Tape first and then cut off the 4 single stands as shown in **fig. F**. The 8 ends may be heated and fused so they will not fray; however, take great caution to be certain that you fuse on the ends and do not damage the strands.



## Step 10

A more professional appearance may be achieved by cutting the ends off flush and then taping or whipping the entire splice.

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# 8-Strand Tuck Splice

## Class II

Class II 8-Strand ropes are made in whole or part from any of the following high modulus fibers: Dyneema®, Vectran®, Technora®, and PBO®.

The eye splice is used to place a permanent loop in the end of a rope, generally for attachment purposes to a fixed point. An eye is also used to form the rope around a thimble, which is used to protect the rope, especially when it is to be attached to a shackle, chain or wire rope.

This splice is in accordance with Cordage Institute instructions for use in "Standard Test Methods for Fiber Rope" STM 6/80. This provides for the required strength retention for 8-strand (plaited) synthetic fiber rope as given in the Cordage Institute Rope Specifications.

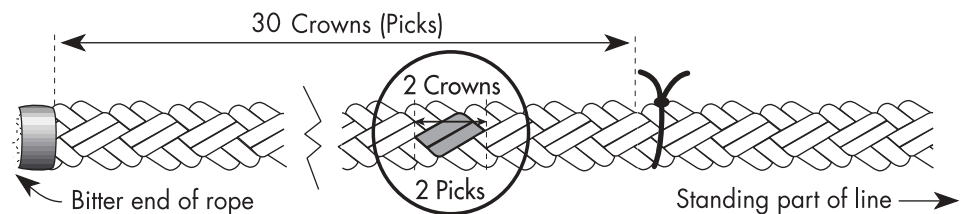


## Getting Started

Plaited rope is no more difficult to splice than 3-strand. It is made of 8-strands grouped in 4 pairs. 2 of these pairs turn to the left and 2 to the right. The illustrations show the 2 pairs turning to the left in white and the 2 pairs turning to the right in gray. They will be referred to as the "white" and "gray" pairs. Note: The gray pairs are diametrically opposite one another but at a 90-degree angle to the white pairs and vice-versa.

**Tools Required:** A splicing fid or marlinspike, sharp knife or scissors, plastic or masking tape, marking pen, 10-inches of twine.

**Eye Size:** The size of the eye is determined by bending the bitter end of the rope back over itself for a distance equal to the desired length of the eye plus a length of 30 pics (crowns).



**Preparation:** If the rope which you are about to splice is all of one color, mark those pairs which turn to the right so that they will conform with the gray pairs in the illustrations. Count back a distance of 30 pics from the end and tie a string securely around the rope so it passes directly over the center of both pairs of gray strands. Place the knot so that it is directly on top of one of these pairs. It is important that this be tied securely to prevent slipping. Now, unlay the pairs of strands back to the string. Making sure not to mix, or twist them, tape the ends of the pairs together as shown in **fig. A**.

## Step 1

Hold of lay the rope so that the pairs of white strands are on top and bottom with a knot to the right as you look toward the end.

## Step 2

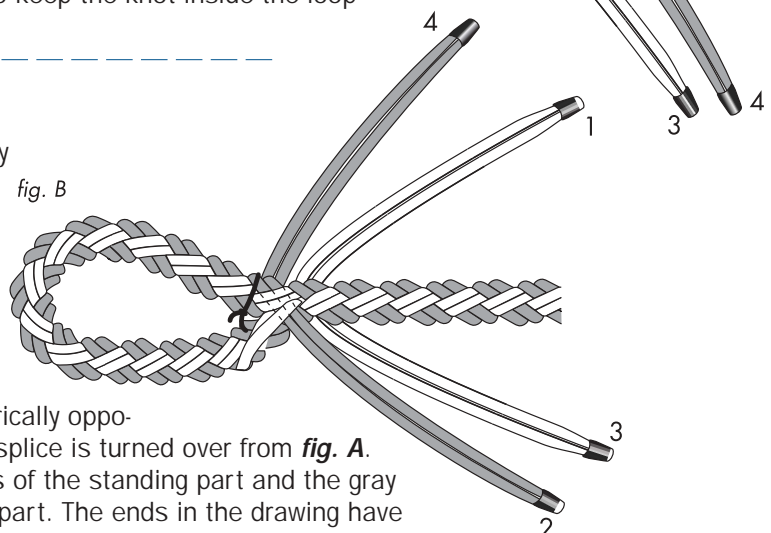
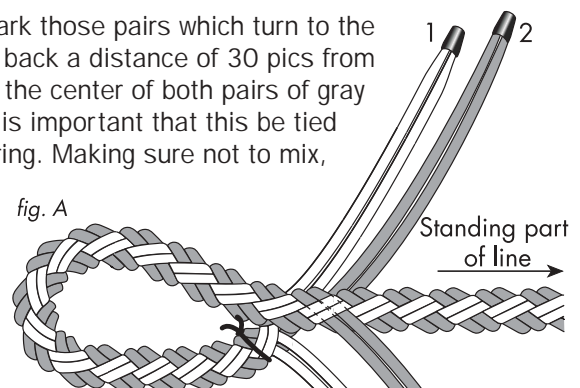
Bend the rope over to the desired eye in such a way as to keep the knot inside the loop as shown in **fig. A**.

## Step 3

Using the fid to make clearance and starting with the gray pairs, tuck them under the diametrically opposite white pairs as shown in **fig. A**. **Make sure you do not disturb the lay of the pairs.** Do not twist them so that the individual strands cross over one another in the pair.

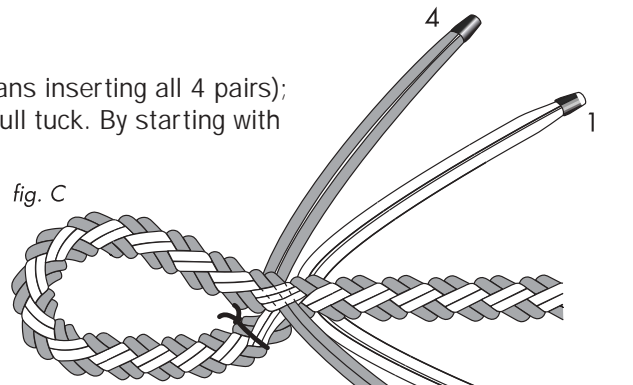
## Step 4

Now turn eye over, tuck the white pairs under the diametrically opposite gray pairs as shown in **fig. B**. Note that in **fig. B** the splice is turned over from **fig. A**. The white pairs to be tucked should follow the white pairs of the standing part and the gray to be tucked should follow the gray pairs of the standing part. The ends in the drawing have been numbered to help show their position as the tucks progress.



## Step 5

Now you have your eye with the first full tuck complete (a full tuck means inserting all 4 pairs); pull all 4 ends down firmly. Starting with the gray pairs, take another full tuck. By starting with the gray pairs you avoid having to go under 2 pairs at once. Your splice should now look like **fig. C**, (which now lays on the same side as **fig. A**). From here on, you should have no difficulty completing the splice.

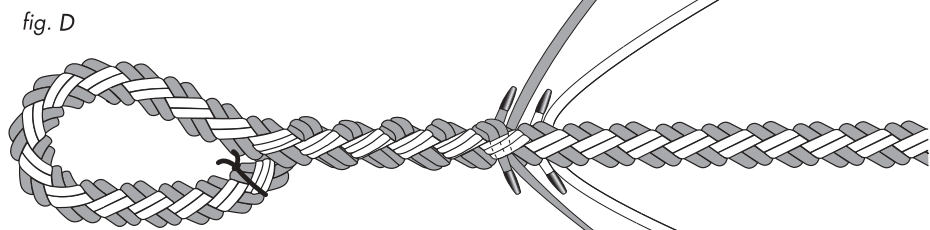


## Step 6

Now starting with the gray pairs, make four more full tucks with each pair of strands.

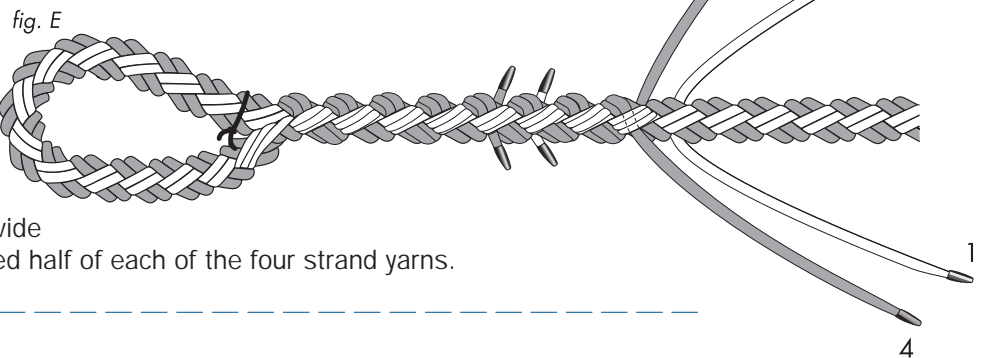
## Step 7

Having completed 6 full tucks for each pair of strands, select the strand in each pair that is closest to the eye and tape it where it emerges from the tuck. Then cut off the taped strands as shown in **fig. D**.



## Step 8

Now splice the remaining single strands just as before for another three full tucks. The splice should now appear as shown in **fig. E**, which will lay on the opposite side as shown in **fig. D**. Each single strand should now have three full tucks.

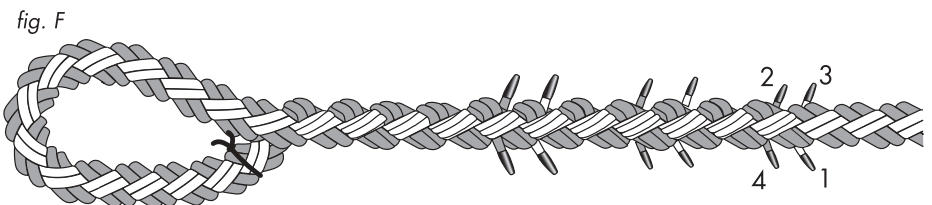


## Step 9

The tapering process continues by reducing the volume of each remaining strand by half (count the number of yarns that comprise each strand and divide as evenly as possible). Select the divided half of each of the four strand yarns.

## Step 10

With the remaining four half-volume single strands, perform three full tucks. Tape the strands after they have been tucked and cut them off as done with previous strands.



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# End for End Splice

## Class II

### 8-Strand Ropes (Includes Proton-8™)

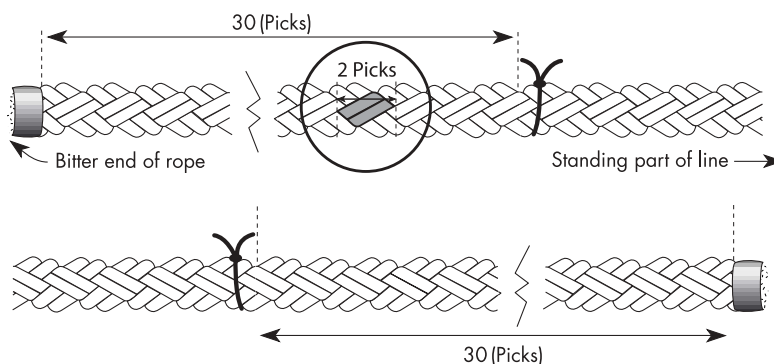
Class 2 8-strand ropes are made in whole or part from any of the following high modulus fibers: Dyneema®, Vectran®, Technora®, and PBO®.



## Step 1 ... Getting Started

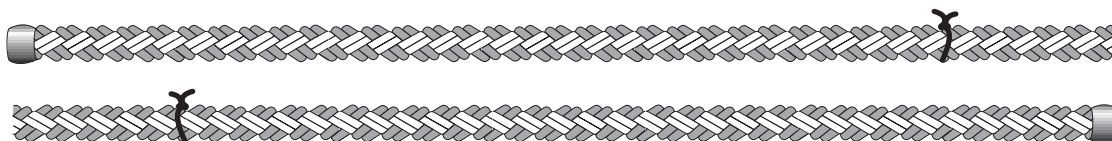
**Tools Required:** A splicing fid or marlinspike, sharp knife or scissors, plastic or masking tape, marking pen, light strong string.

Lay ropes out and count 30 picks or crowns from end of both ropes.  
Tie string or tape securely at these points



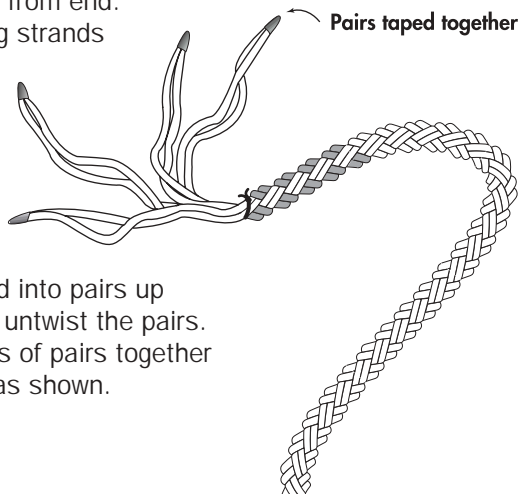
## Step 2 ... Marking

Holding the end of the rope, note the pairs of strands going to the left. Mark these pairs. Mark the strands up to the string and continue to mark the strands for five (5) or more picks beyond the strings.

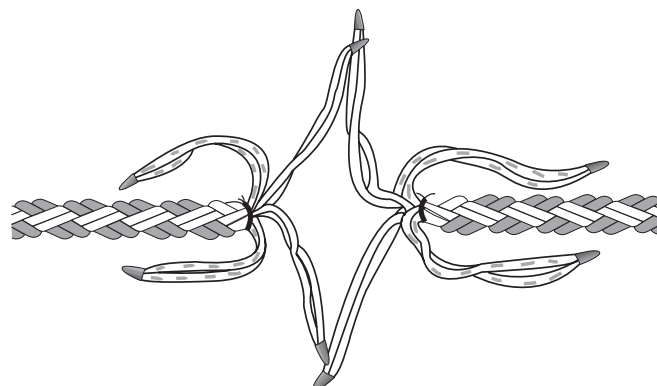


## Step 3 ... Separating & Taping

Remove tape from end.  
Start unlaying strands in their respective pairs. It is important to keep them together.  
After they are separated into pairs up to the string, untwist the pairs.  
Tape the ends of pairs together with a taper as shown.



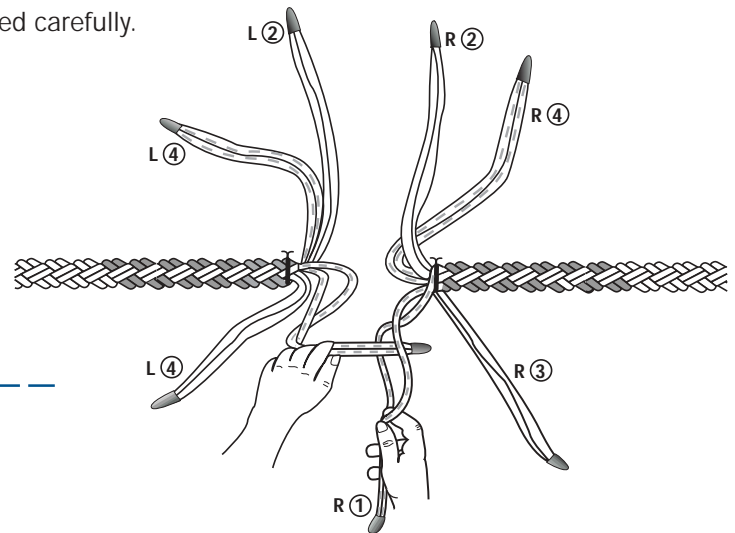
Layout ropes as shown:



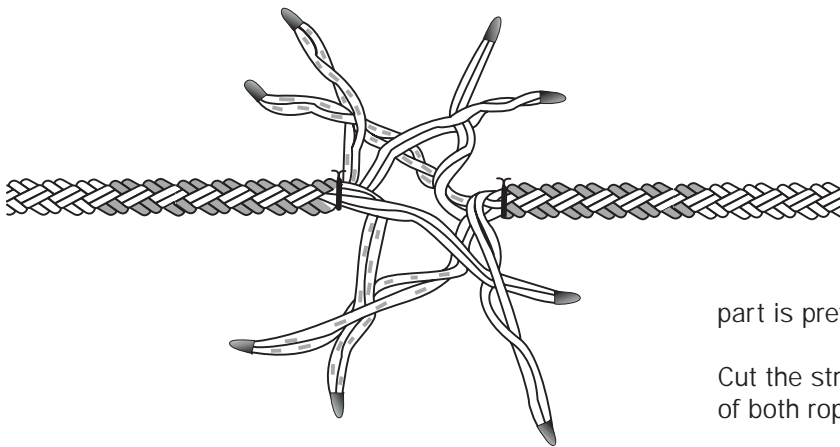
## Step 4

It is important that the next steps of the procedure be followed carefully.

Marked L {1} Strands go between Marked R {1} Strands  
Unmarked R {2} Strands go between Unmarked L {2} Strands  
Unmarked L {3} Strands go between Unmarked R {3} Strands  
Marked R {4} Strands go between Marked L {4} Strands



## Step 5



After the initial step has been completed, you should have something that looks like the drawing at left.

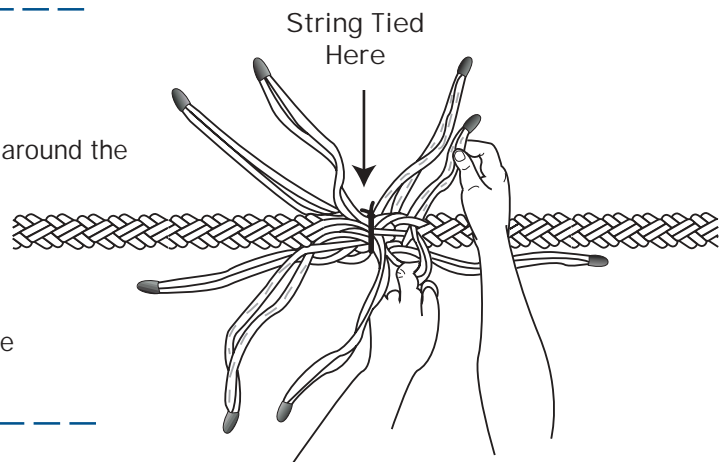
Marry the ropes as shown in Step 6. This part is preferably a two-person job.

Cut the string that you previously tied at the splicing points of both ropes.

## Step 6

Keep the ropes together snugly. Tie a piece of string tightly around the splicing point as shown at right.

Start your splice. A marked pair under an unmarked pair of strands. Now you can follow the same procedure as the eyesplice. But we suggest that you complete one (1) full tuck in one direction and then do a full tuck on the other side of the marriage. Pull everything tight before proceeding.



## Step 7



Complete splicing in both directions so that each side is finished off **as per strand reduction sequence (steps 7-10) of the eyesplice procedure.**

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# Eye Splice

## 8x3 Strand - Class II Rope

The eye splice is used to place a permanent loop in the end of a rope, generally for attachment purposes to a fixed point. An eye is also used to form the rope around a thimble, which is used to protect the rope, especially when it is to be attached to a shackle, chain or wire rope.

This splice is in accordance with Cordage Institute instructions for use in "Standard Test Methods for Fiber Rope" STM 6/80.

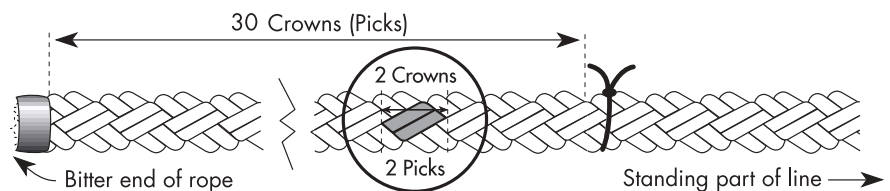


## Getting Started

8 x 3 rope is no more difficult to splice than 3-strand. It is an 8-strand plaited rope where the strands are made from 3-strand ropes. The 8-strands are grouped into 4 pairs. 2 of these pairs are left-lay and 2 are right-lay. The illustrations show the 2 pairs turning to the left in white and the 2 pairs turning to the right in gray. They will be referred to as the "white" and "gray" pairs. Note: The gray pairs are diametrically opposite one another but at a 90-degree angle to the white pairs and vice-versa.

**Tools Required:** A splicing fid or marlinspike, sharp knife or scissors, plastic or masking tape, marking pen, 10-inches of twine.

**Eye Size:** The size of the eye is determined by bending the bitter end of the rope back over itself for a distance equal to the desired length of the eye plus a length of 30 picks (crowns).



**Preparation:** If the rope which you are about to splice is all of one color, mark those pairs which turn to the right so that they will conform with the gray pairs in the illustrations. Count back a distance of 30 picks from the end and tie a string securely around the rope so it passes directly over the center of both pairs of gray strands. Place the knot so that it is directly on top of one of these pairs. It is important that this be tied securely to prevent slipping. Now, unlay the pairs of strands back to the string. Making sure not to mix, or twist them, tape the ends of the pairs together as shown in **fig. A**.

## Step 1

Hold or lay the rope so that the pairs of white strands are on top and bottom with a knot to the right as you look toward the end.

## Step 2

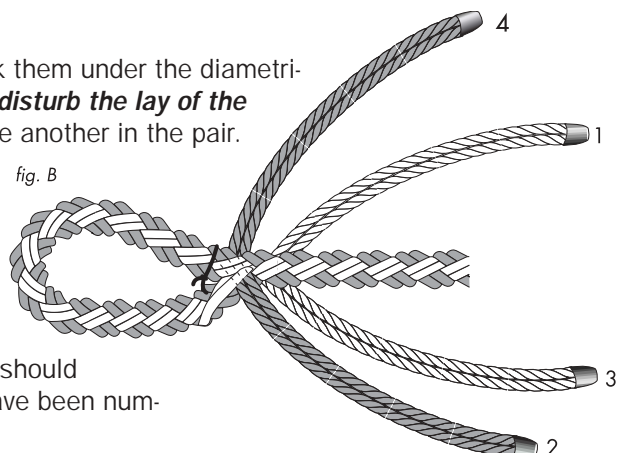
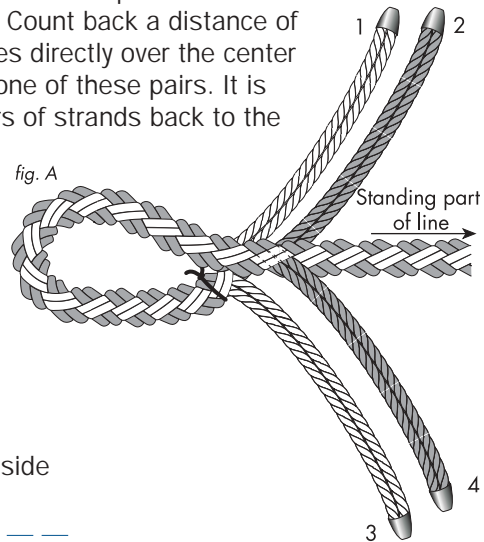
Bend the rope over to the desired eye in such a way as to keep the knot inside the loop as shown in **fig. A**.

## Step 3

Using the fid to make clearance and starting with the gray pairs, tuck them under the diametrically opposite white pairs as shown in **fig. A**. **Make sure you do not disturb the lay of the pairs.** Do not twist them so that the individual strands cross over one another in the pair.

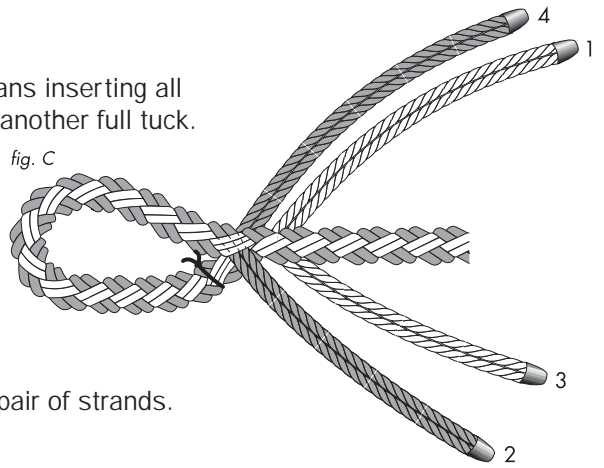
## Step 4

Now turn eye over, tuck the white pairs under the diametrically opposite gray pairs as shown in **fig. B**. Note that in **fig. B** the splice is turned over from **fig. A**. The white pairs to be tucked should follow the white pairs of the standing part and the gray to be tucked should follow the gray pairs of the standing part. The ends in the drawing have been numbered to help show their position as the tucks progress.



## Step 5

Now you have your eye with the first full tuck complete (a full tuck means inserting all 4 pairs); pull all 4 ends down firmly. Starting with the gray pairs, take another full tuck. By starting with the gray pairs you avoid having to go under 2 pairs at once. Your splice should now look like **fig. C**, (which now lays on the same side as **fig. A**). From here on, you should have no difficulty completing the splice.

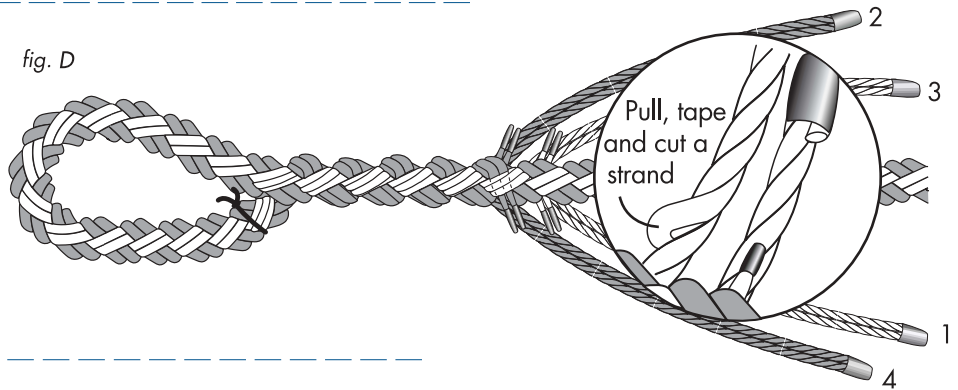


## Step 6

Now starting with the gray pairs, make four more full tucks with each pair of strands.

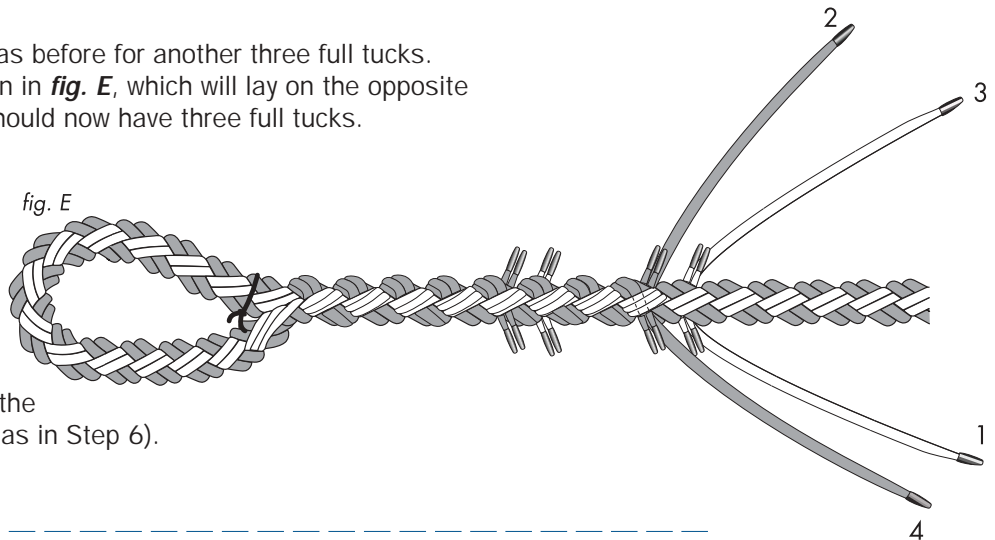
## Step 7

Having completed 6 full tucks for each pair of strands you will need to reduce the strand volume by one-third before continuing the next set of tucks. To do this, cut one of the three strands out of each strand pair as shown in **fig. D**.



## Step 8

Now splice the remaining strands just as before for another three full tucks. The splice should now appear as shown in **fig. E**, which will lay on the opposite side as shown in **fig. D**. Each strand should now have three full tucks.

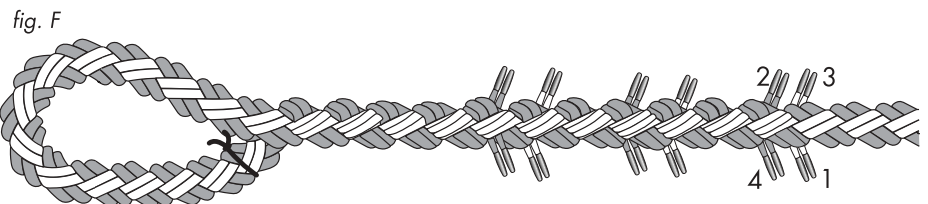


## Step 9

The tapering process continues by reducing the volume of the remaining strands by half (by unlaying both strand-pairs and then removing one of the two unlaied strands in each strand-pair, as in Step 6).

## Step 10

With the remaining strands, perform three full tucks. Tape the strands after they have been tucked and cut them off as done with previous strands.



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# End/End Splice

## 8x3 Strand Class II Rope

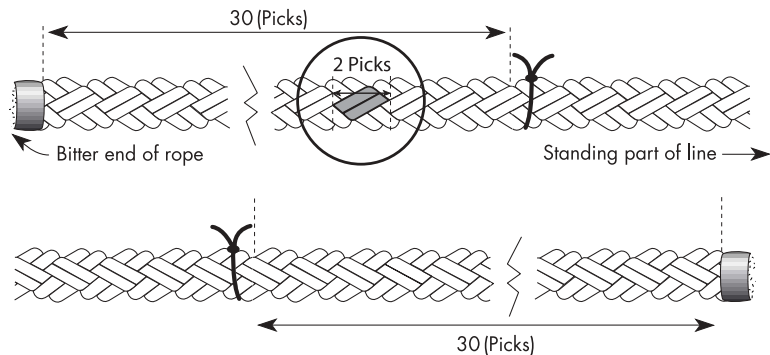
Class 2 8 x 3 construction ropes are made in whole or part from any of the following high modulus fibers: Dyneema®, Vectran®, Technora®, and PBO®.



### Step 1...Getting Started

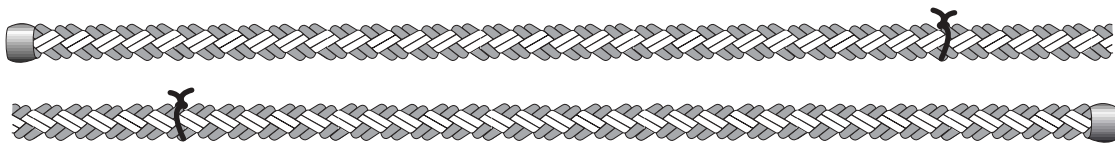
**Tools Required:** A splicing fid or marlinspike, sharp knife or scissors, plastic or masking tape, marking pen, light strong string.

Lay ropes out and count 30 picks or crowns from end of both ropes.  
Tie string or tape securely at these points



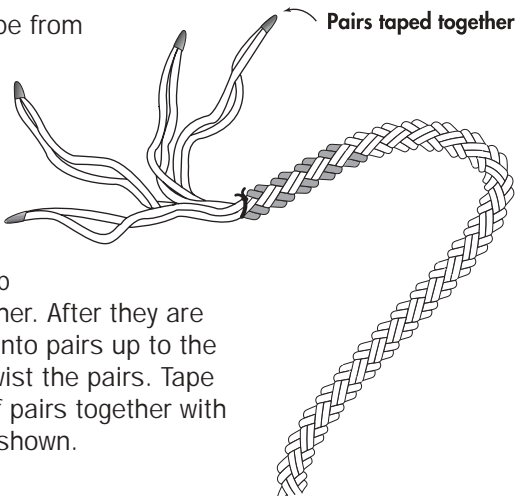
### Step 2 ... Marking

Holding the end of the rope, note the pairs of strands going to the left. Mark these pairs. Mark the strands up to the string and continue to mark the strands for five (5) or more picks beyond the strings.

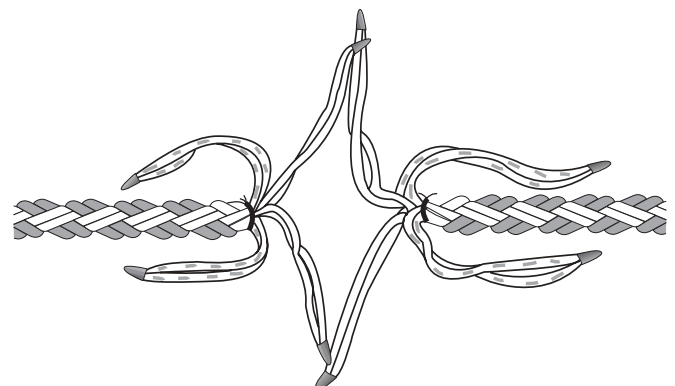


### Step 3 ... Separating & Taping

Remove tape from end. Start unlaying strands in their respective pairs. It is important to keep them together. After they are separated into pairs up to the string, untwist the pairs. Tape the ends of pairs together with a taper as shown.



Layout ropes as shown:

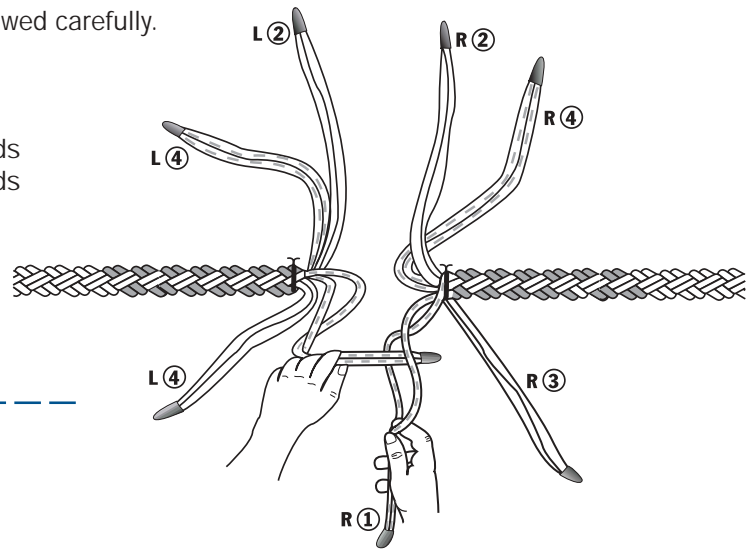




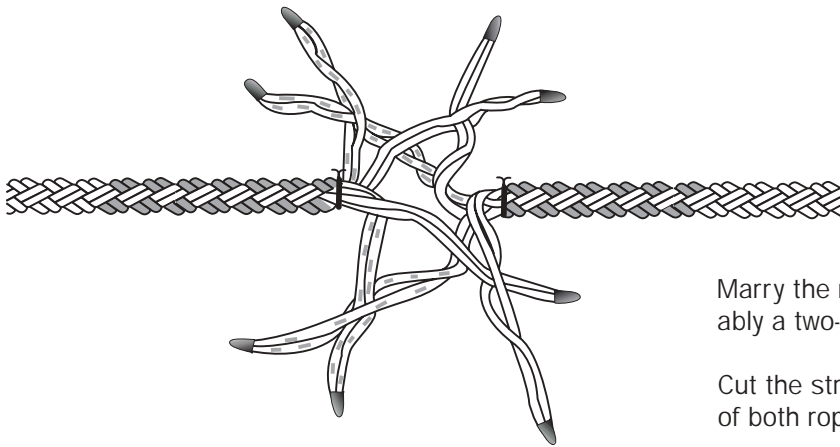
## Step 4

It is important that the next steps of the procedure be followed carefully.

Marked L {1} Strands go between Marked R {1} Strands  
Unmarked R {2} Strands go between Unmarked L {2} Strands  
Unmarked L {3} Strands go between Unmarked R {3} Strands  
Marked R {4} Strands go between Marked L {4} Strands



## Step 5



After the initial step has been completed, you should have something that looks like the drawing at left.

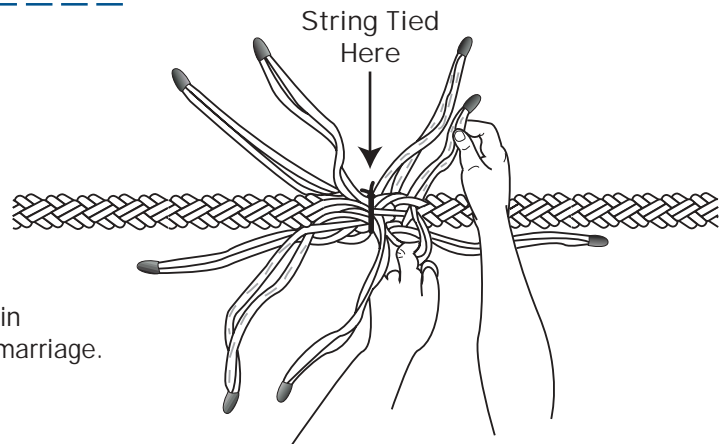
Marry the ropes as shown in Step 6. This part is preferably a two-person job.

Cut the string that you previously tied at the splicing points of both ropes.

## Step 6

Keep the ropes together snugly. Tie a piece of string tightly around the splicing point as shown at right.

Start your splice. A marked pair under an unmarked pair of strands. Now you can follow the same procedure as the eyesplice. But we suggest that you complete one (1) full tuck in one direction and then do a full tuck on the other side of the marriage. Pull everything tight before proceeding.



## Step 7



Complete splicing in both directions so that each side is finished off **as per strand reduction sequence (steps 7-10) of the eyesplice procedure.**

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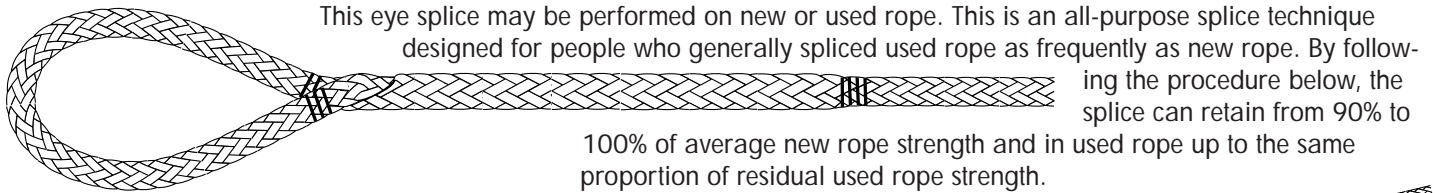
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# Eye-Splice For Class I 12-Strand Ropes

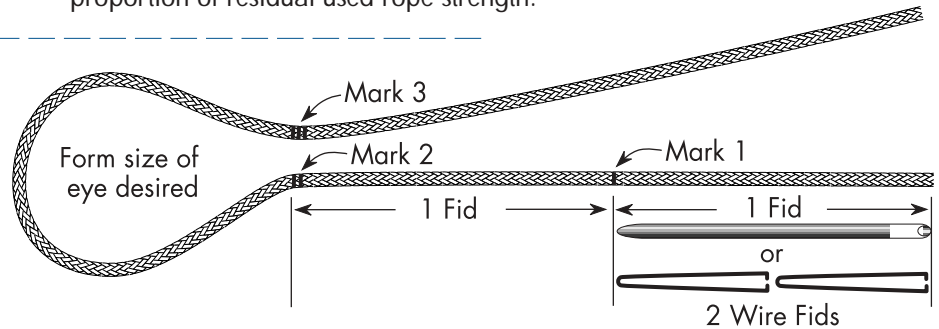


Class I 12-Strand ropes are made from any or all of the following fibers: Olefin, polyester, or nylon.



## Step 1...Measurement

Tape end of line to be spliced and measure 1 tubular fid length (or 2 wire fid lengths because wire fids are half the length of tubular fids) from taped end of line and make **Mark 1**.

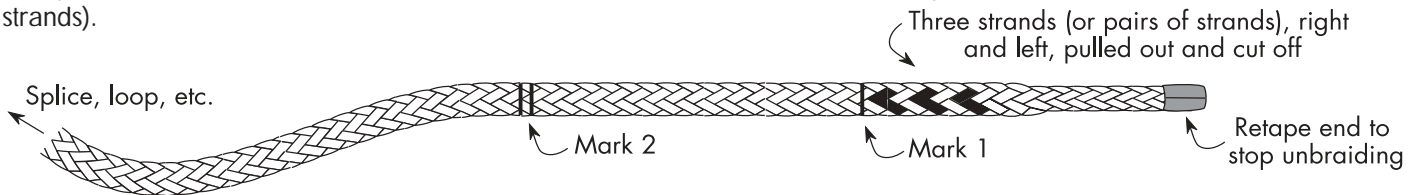


From **Mark 1** measure 1 tubular fid lengths (or 2 wire fid lengths) and make **Mark 2**.  
Now form size of eye desired and make **Mark 3**.

## Step 2...Making Taper

From **Mark 1**, in the direction of the taped end of the line, mark every second right and left strand\* for three strands.

Cut every marked strand and pull out of line (tape at end can cause resistance and may have to be removed in order to pull out cut strands).

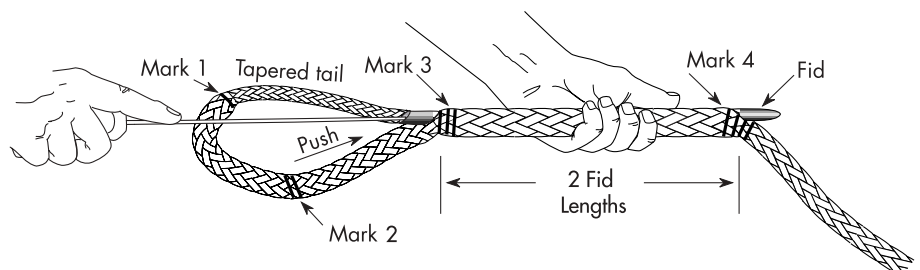


Tapered end will now have only 6 strands remaining. Tape tapered tail tightly to keep from unbraiding.

*\*Larger rope diameters may have pairs of strands in right and left direction. In this case, treat the pairs of strands as a single strand, marking and cutting both in each direction as described above.*

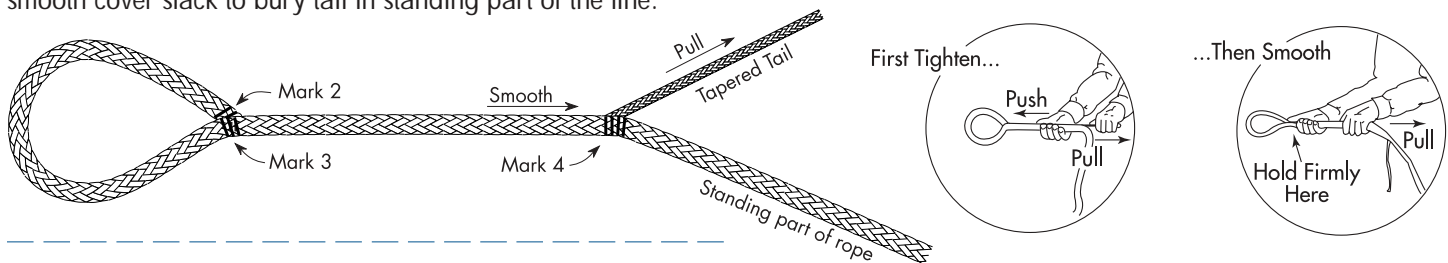
## Step 3...Bury Tail into Standing Part of Line

Measure 2 tubular fid lengths (4 wire fid lengths), make **Mark 4**. Insert fid and tapered tail at **Mark 3** and bring fid out at **Mark 4**. Pull fid and tapered tail out. Don't let the line twist.



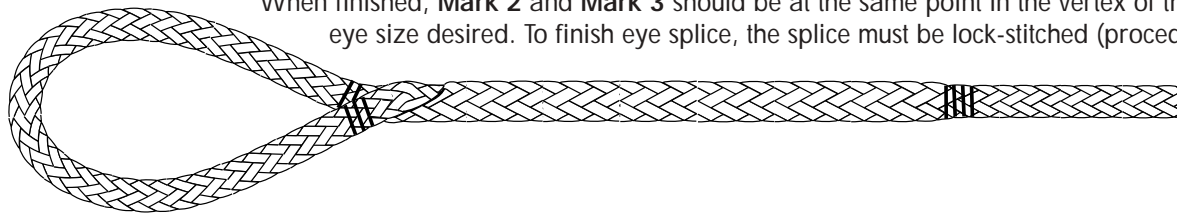
## Step 4...Finish Burying

Remove fid. Pull hard on tapered tail with one hand. With other hand, smooth bunched line towards eye splice until marks 2 and 3 converge. Now, smooth the cover away from eye towards mark 4. Mark the tapered tail where it emerges at mark 4. Pull tail out several inches, cut tail off at an angle, so the angle cut ends at this mark. Then with both hands and weight of body, smooth cover slack to bury tail in standing part of the line.



## Step 5...To Finish Eye Splice

When finished, **Mark 2** and **Mark 3** should be at the same point in the vertex of the eye—which, yields eye size desired. To finish eye splice, the splice must be lock-stitched (procedure following).

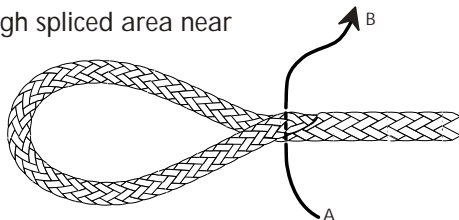


## Lock Stitch Procedure

Material Required: Approximately 1/2 fid length of nylon or polyester whipping twine or rope approximately the same size of the strands in the rope you are stitch-locking.

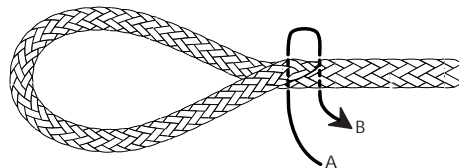
### Step 1

Pass stitching through spliced area near throat of eye as shown.



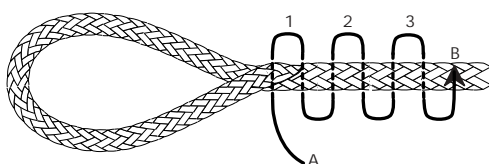
### Step 2

Reinsert as shown pulling snug but not tight.



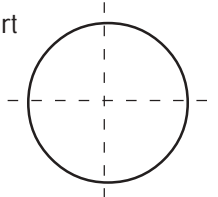
### Step 3

Continue to reinsert as shown until you have *at least 3 complete stitches*.



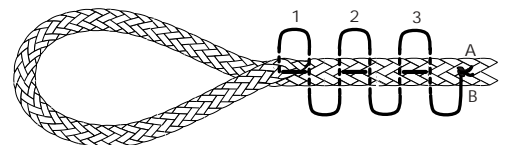
### Step 4

After completing *Step 3*, rotate spliced part of rope 90° and reinsert end **A** into spliced area in the same area and in the same fashion as in *Steps 1, 2 and 3*. The splice will now be stitched on two planes perpendicular to each other.



### Step 5

After stitching at least three complete stitches as in *Step 3*, extract both ends **A** and **B** together through the same opening in the braid. Tie them together with a square knot and reinsert back into braid.



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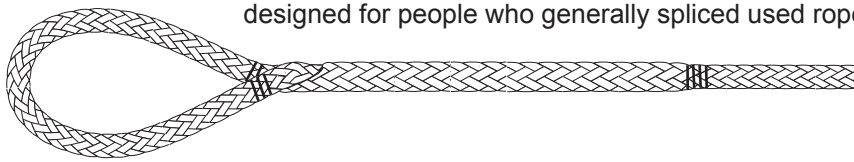
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# SPLICING INSTRUCTIONS

## EYE-SPLICE FOR CLASS II 12-STRAND ROPES

Class 2 12-Strand ropes are made in whole or part from any of the following high modulus fibers: Dyneema®, Vectran®, Technora®, and PBO®.



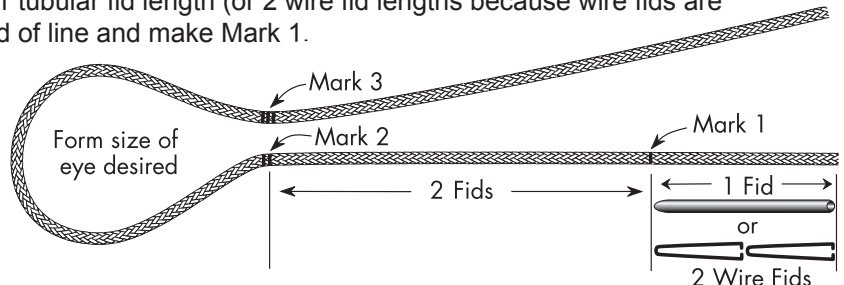
This eye splice may be performed on new or used rope. This is an all-purpose splice technique designed for people who generally spliced used rope as frequently as new rope. By following the procedure below, the splice can retain from 90% to 100% of average new rope strength and in used rope up to the same proportion of residual used rope strength.

### Step 1...Measurement

Tape end of line to be spliced and measure 1 tubular fid length (or 2 wire fid lengths because wire fids are half the length of tubular fids) from taped end of line and make **Mark 1**.

From **Mark 1** measure 2 tubular fid lengths (or 4 wire fid lengths) and make **Mark 2**.

Now form size of eye desired and make **Mark 3**.



### Step 2...Making Taper

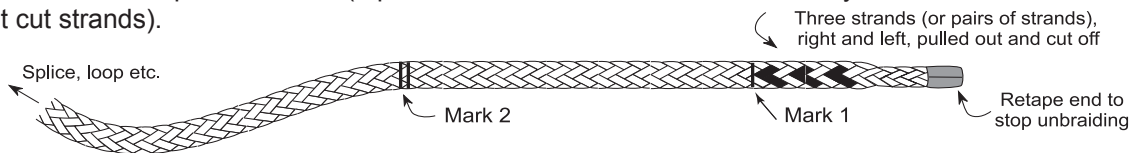
From **Mark 1**, in the direction of the taped end of the line, mark every second right and left strand\* for three strands.

Cut every marked strand and pull out of line (tape at end can cause resistance and may have to be removed in order to pull out cut strands).

Tapered end will now have only 6 strands remaining.

Tape tapered tail tightly to keep from unbraiding.

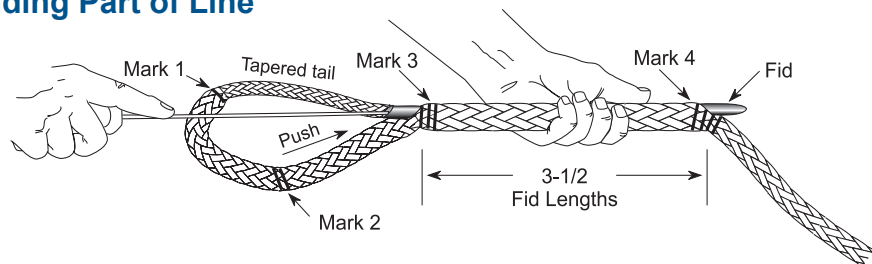
\*Larger rope diameters may have pairs of strands in right and left direction. In this case, treat the pairs of strands as a single strand, marking and cutting both in each direction as described above.



### Step 3...Bury Tail into Standing Part of Line

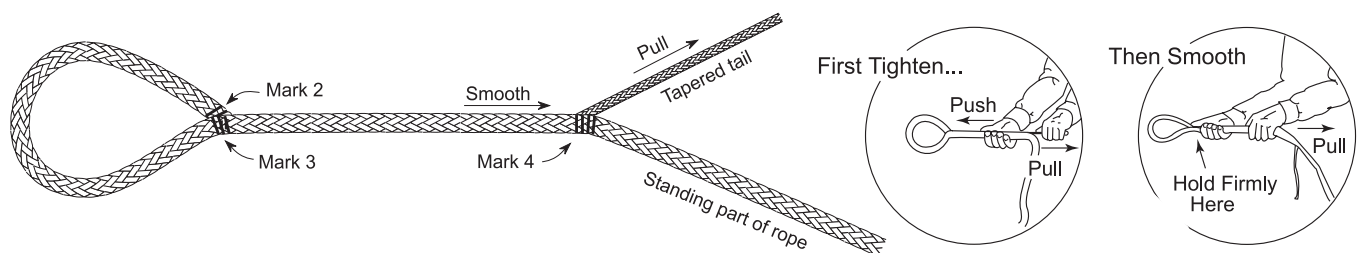
Measure 3-1/2 tubular fid lengths (7 wire fid lengths), make **Mark 4**.

Insert fid and tapered tail at **Mark 3** and bring fid out at **Mark 4**. Pull fid and tapered tail out. Don't let the line twist.



### Step 4...Finish Burying

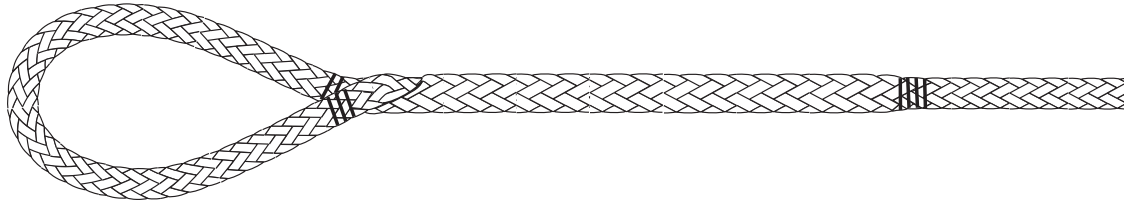
Remove fid. Pull hard on tapered tail with one hand. With other hand, smooth bunched line towards eye splice until marks 2 and 3 converge. Now, smooth the cover away from eye towards mark 4. Mark the tapered tail where it emerges at mark 4. Pull tail out several inches, cut tail off at an angle, so the angle cut ends at this mark. Then with both hands and weight of body, smooth cover slack to bury tail in standing part of the line.



# SPLICING INSTRUCTIONS

## Step 5...To Finish Eye Splice

When finished, **Mark 2** and **Mark 3** should be at the same point in the vertex of the eye—which, yields eye size desired. To finish eye splice, the splice must be lock-stitched (procedure following).

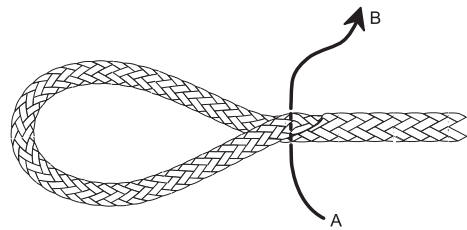


## LOCK STITCH PROCEDURE

Material Required: Approximately 1/2 fid length of nylon or polyester whipping twine or rope approximately the same size of the strands in the rope you are lock-stitching.

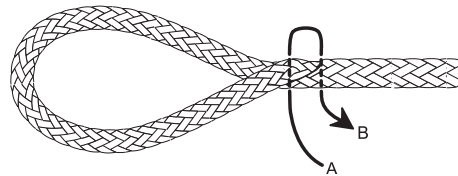
### Step 1

Pass stitching through spliced area near throat of eye as shown.



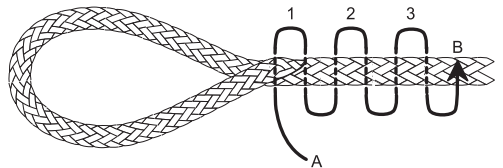
### Step 2

Reinsert as shown pulling snug but not tight.



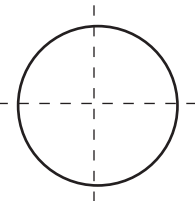
### Step 3

Continue to reinsert as shown until you have at least 3 complete stitches.



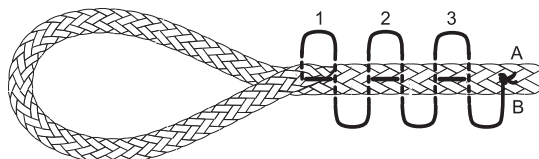
### Step 4

After completing Step 3, rotate spliced part of rope 90° and reinsert end A into spliced area in the same area and in the same fashion as in Steps 1, 2 and 3. The splice will now be stitched on two planes perpendicular to each other.



### Step 5

After stitching at least three complete stitches as in Step 3, extract both ends A and B together through the same opening in the braid. Tie them together with a square knot and reinsert back into braid.



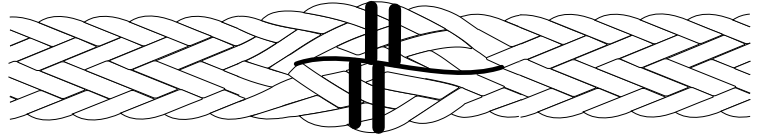
# End-For-End Splice

## Class 1

### 12-Strand Ropes

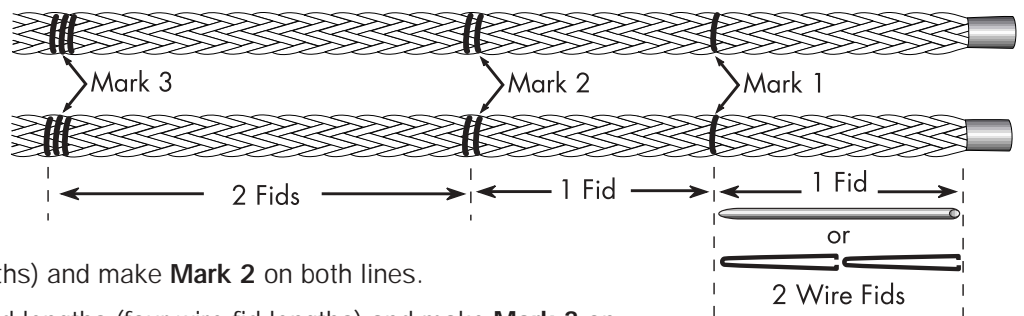
Class 1 12-strand ropes are made from any or all of the following fibers: olefin, polyester, or nylon.

This end-for-end splice may be performed on new or used rope. This is an all-purpose splice technique designed for people who generally splice used rope as frequently as new rope. By following the procedure below, the splice can retain from 90% to 100% of average new rope strength and in used rope up to the same proportion of residual used rope strength.



#### Step 1...Marking Measurements

Tape ends of line to be spliced.  
Lay two ropes to be spliced side-by-side and measure one tubular fid length, (two wire fid lengths because wire fids are half size) from taped end of each line and make a mark—**Mark 1**.



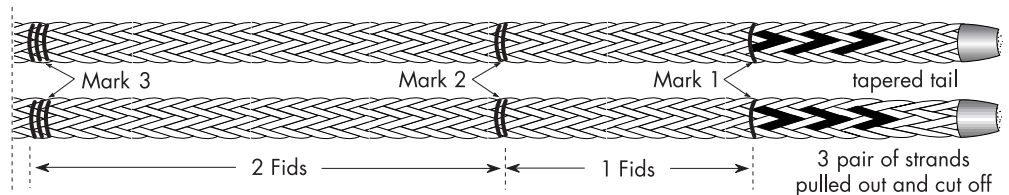
From **Mark 1** measure one tubular fid lengths (two wire fid lengths) and make **Mark 2** on both lines.

From **Mark 2** measure two tubular fid lengths (four wire fid lengths) and make **Mark 3** on both lines.

#### Step 2...Tapering Tail

From **Mark 1**, in the direction of the taped end of the line, mark every second right and left strand\* for three strands.

Cut every marked strand and pull out of line (tape at end can cause resistance and may have to be removed in order to pull out cut strands).

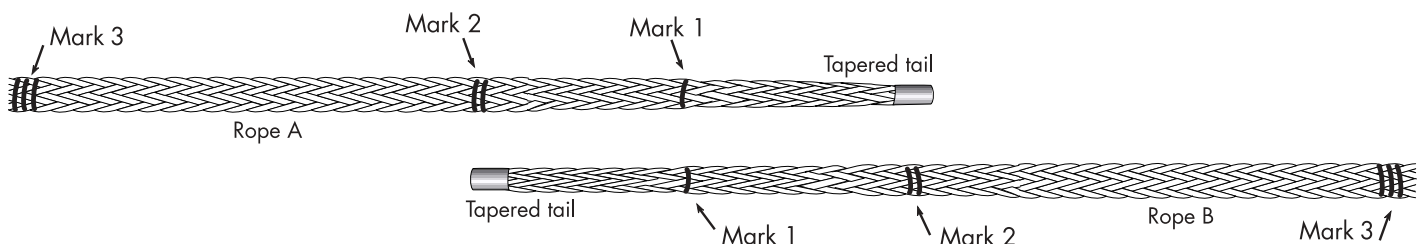


Tapered end will now have only 6 strands remaining. Tape tapered tail tightly to keep from unbraiding.

*\*Larger rope diameters may have pairs of strands in right and left direction. In this case, treat the pairs of strands as a single strand, marking and cutting both in each direction as described above.*

#### Step 3...Repositioning Ropes

Reposition ropes for splicing according to diagram below.

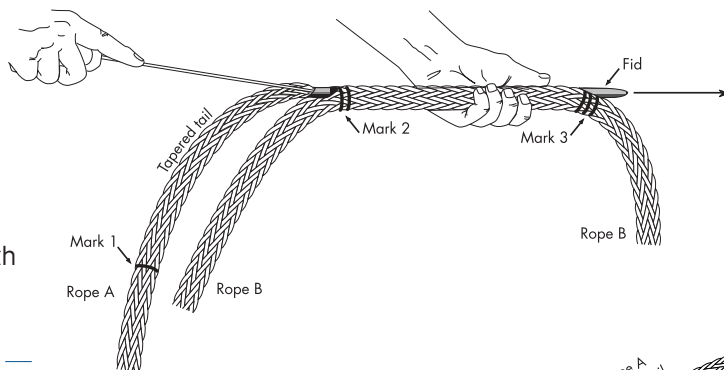


## Step 4...Burying Rope A Into Rope B

Attach fid to tapered end of **Rope A** and insert fid into **Rope B** at **Mark 2** and bring out at **Mark 3**. Then remove fid.

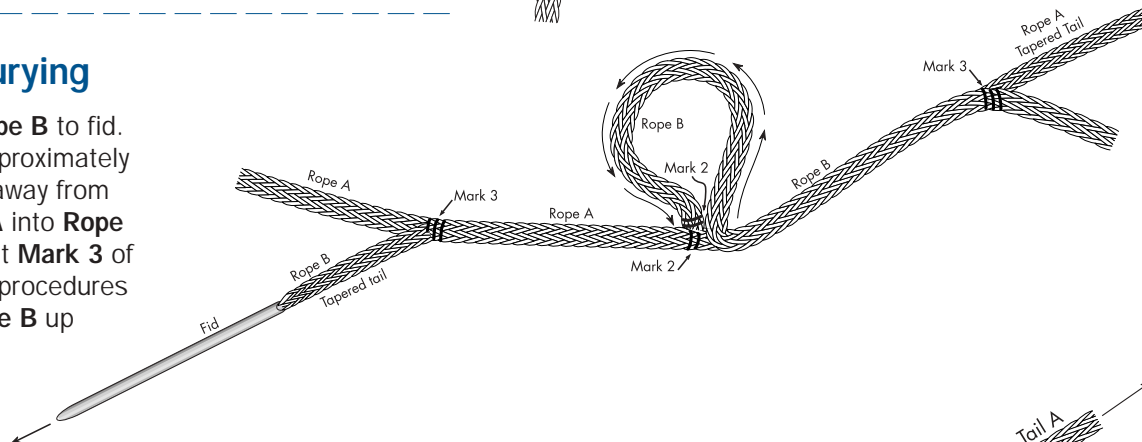
Pull tapered tail of **Rope A** until you have buried up to its **Mark 2**. With larger lines, once you have fid and tapered tail through the line, tie off tail to stationary object; then use both hands and weight of body to bury **Rope B** up to **Mark 2**.

Leave tail sticking out



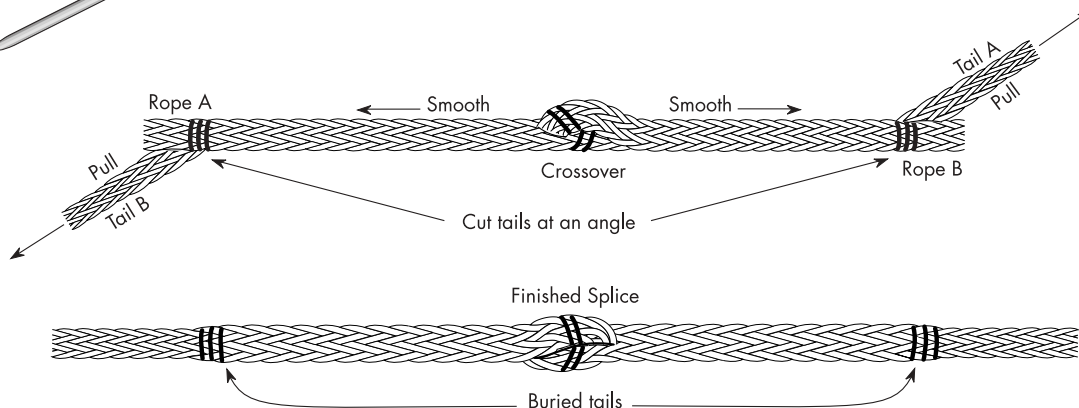
## Step 5...Finish Burying

Attach tapered tail of **Rope B** to fid. Insert fid into **Rope A** approximately the diameter of the line away from insertion point of **Rope A** into **Rope B**. Bring fid and tail out at **Mark 3** of **Rope A**. Following same procedures as in **Step 4** to bury **Rope B** up to its **Mark 2**. Leave tail sticking out.



## Step 6...Smooth Out Splice

Pull tails to tighten crossover. Then, smooth braid in both directions away from the crossover. Now cut off tails—cut tails on an angle so as to give them a point.

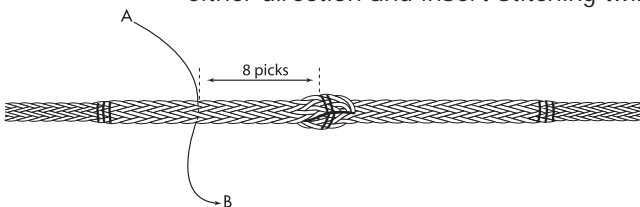


Give a final smoothing, away from crossover, stroking rope firmly. Tails should bury inside cover.

## LOCK STITCHING PROCEDURE

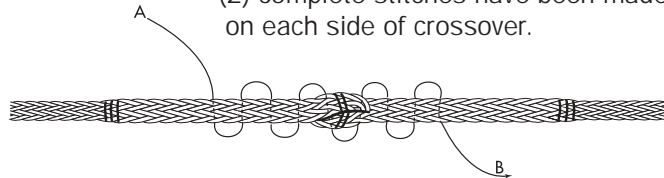
### Step 1

From mark 2 at crossover, count 8 picks in either direction and insert stitching twine.

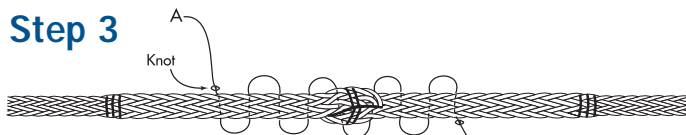


### Step 2

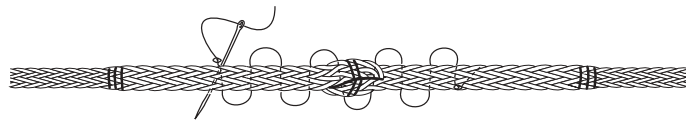
Working towards the crossover, pass end "b" back and forth through splice until a minimum of two (2) complete stitches have been made on each side of crossover.



### Step 3



Tie an overhand knot in each tail, as close to its exit point as possible.



Insert tail of stitching twine at exact location where twine emerges. Using needle or small fid, pull (or push) through rope at a slight angle. Pull hard on the end of the twine so that the knot disappears inside the rope. Trim off the remaining twine close to the rope.

# End-For-End Splice

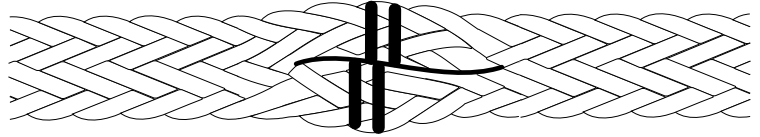
## Class II

### 12-Strand Ropes

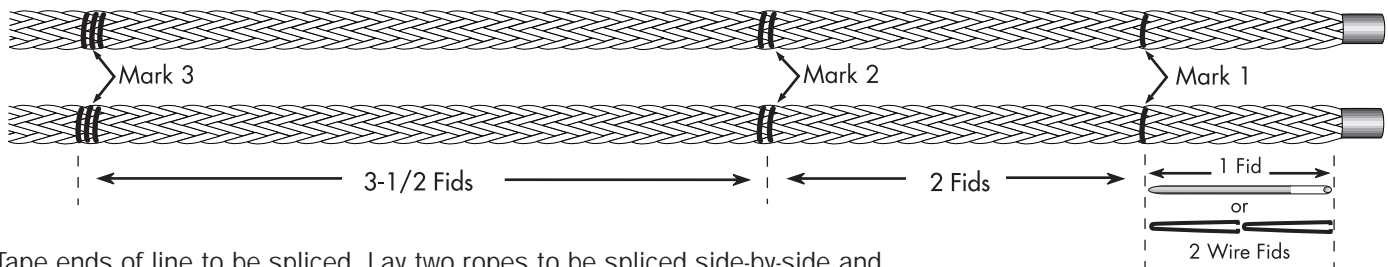


Class 2 12-strand ropes are made in whole or part from high modulus fibers (Dyneema®, Vectran®, Technora®, and PBO®).

This end-for-end splice may be performed on new or used rope. This is an all-purpose splice technique designed for people who generally splice used rope as frequently as new rope. By following the procedure below, the splice can retain from 90% to 100% of average new rope strength and in used rope up to the same proportion of residual used rope strength.



#### Step 1...Marking Measurements



Tape ends of line to be spliced. Lay two ropes to be spliced side-by-side and measure one tubular fid length, (two wire fid lengths because wire fids are half size) from taped end of each line and make a mark—**Mark 1**.

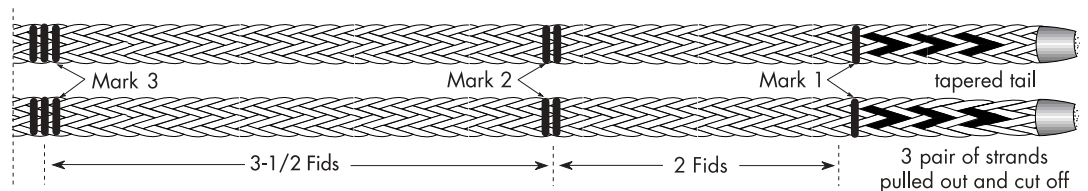
From **Mark 1** measure two tubular fid lengths (four wire fid lengths) and make **Mark 2** on both lines.

From **Mark 2** measure three and one-half tubular fid lengths (seven wire fid lengths) and make **Mark 3** on both lines.

#### Step 2...Tapering Tail

From **Mark 1**, in the direction of the taped end of the line, mark every second right and left strand\* for three strands.

Cut every marked strand and pull out of line (tape at end can cause resistance and may have to be removed in order to pull out cut strands).



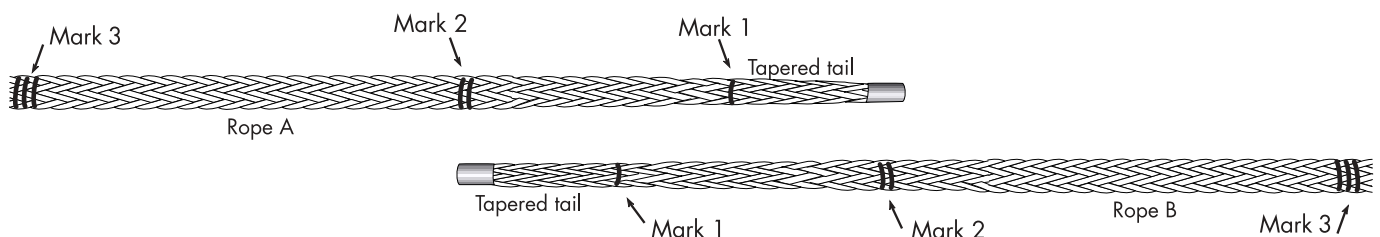
Tapered end will now have only 6 strands remaining.

Tape tapered tail tightly to keep from unbraiding.

*\*Larger rope diameters may have pairs of strands in right and left direction. In this case, treat the pairs of strands as a single strand, marking and cutting both in each direction as described above.*

#### Step 3...Repositioning Ropes

Reposition ropes for splicing according to diagram below.



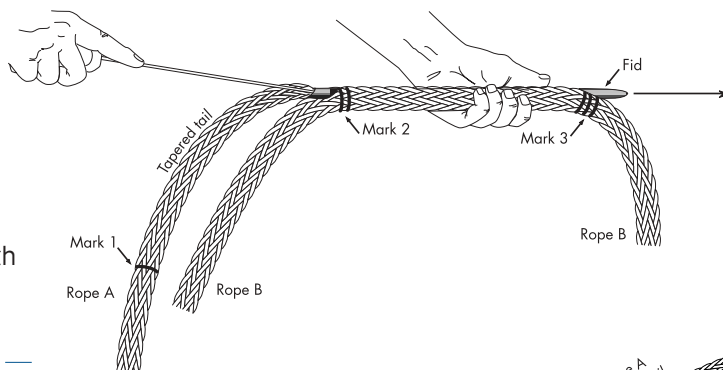


## Step 4...Burying Rope A Into Rope B

Attach fid to tapered end of **Rope A** and insert fid into **Rope B** at **Mark 2** and bring out at **Mark 3**. Then remove fid.

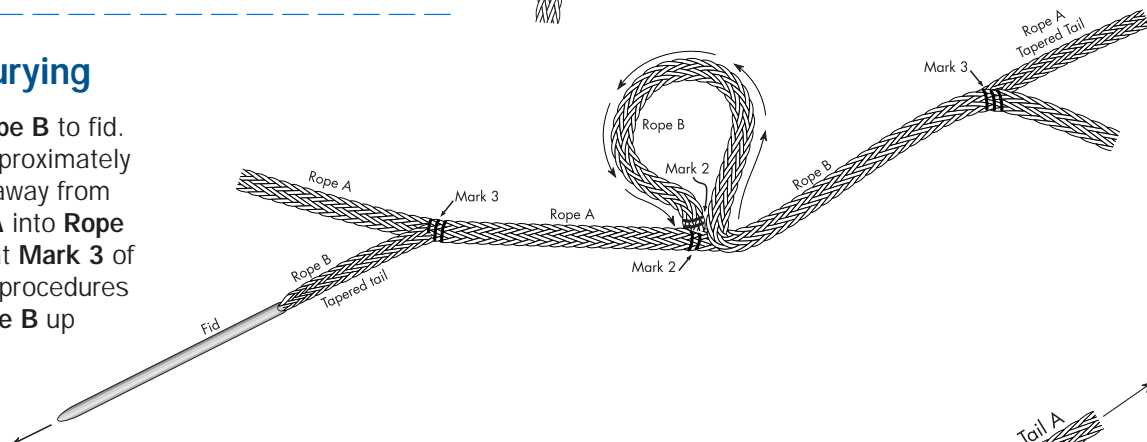
Pull tapered tail of **Rope A** until you have buried up to its **Mark 2**. With larger lines, once you have fid and tapered tail through the line, tie off tail to stationary object; then use both hands and weight of body to bury **Rope B** up to **Mark 2**.

Leave tail sticking out



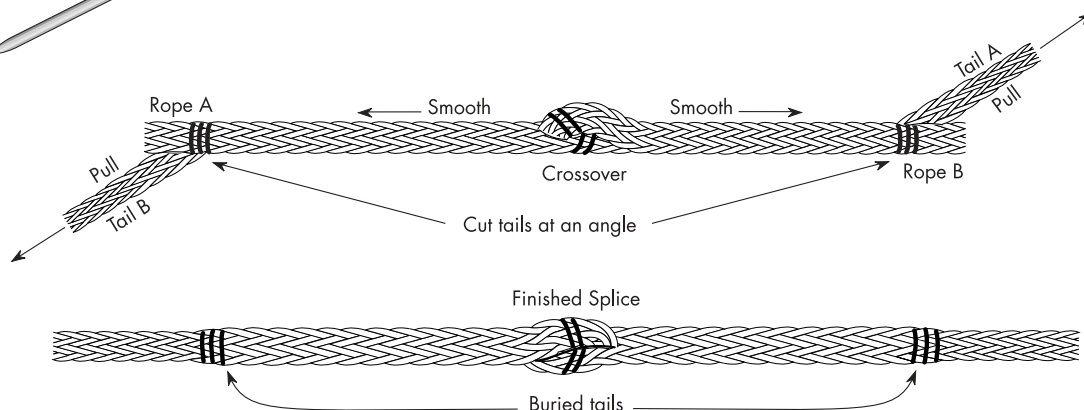
## Step 5...Finish Burying

Attach tapered tail of **Rope B** to fid. Insert fid into **Rope A** approximately the diameter of the line away from insertion point of **Rope A** into **Rope B**. Bring fid and tail out at **Mark 3** of **Rope A**. Following same procedures as in **Step 4** to bury **Rope B** up to its **Mark 2**. Leave tail sticking out.



## Step 6...Smooth Out Splice

Pull tails to tighten crossover. Then, smooth braid in both directions away from the crossover. Now cut off tails—cut tails on an angle so as to give them a point.

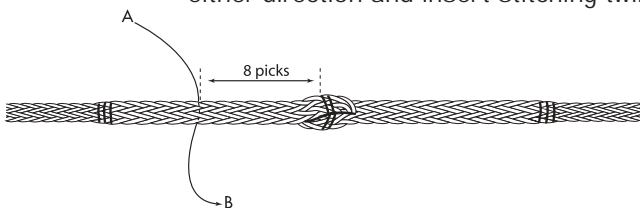


Give a final smoothing, away from crossover, stroking rope firmly. Tails should bury inside cover.

## LOCK STITCHING PROCEDURE

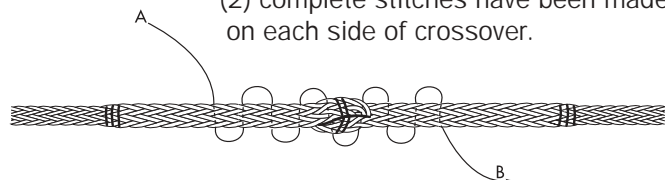
### Step 1

From mark 2 at crossover, count 8 picks in either direction and insert stitching twine.

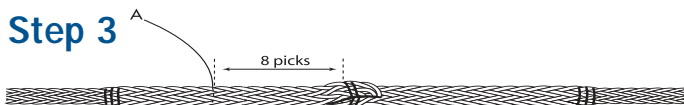


### Step 2

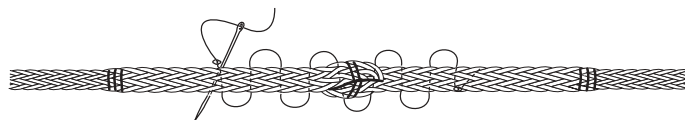
Working towards the crossover, pass end "b" back and forth through splice until a minimum of two (2) complete stitches have been made on each side of crossover.



### Step 3



Tie an overhand knot in each tail, as close to its exit point as possible.



Insert tail of stitching twine at exact location where twine emerges. Using needle or small fid, pull (or push) through rope at a slight angle. Pull hard on the end of the twine so that the knot disappears inside the rope. Trim off the remaining twine close to the rope.



## ***DYNALENE INSTALLATION INSTRUCTIONS FOR COVERING 12-STRAND ROPE***



### **Table of Contents**

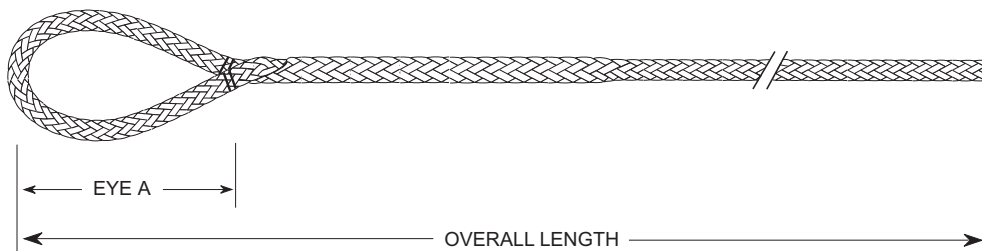
1. Determining the Length Required .....	2
2. Splicing Procedures .....	5
3. Finishing.....	12

# DYNALENE INSTALLATION INSTRUCTIONS

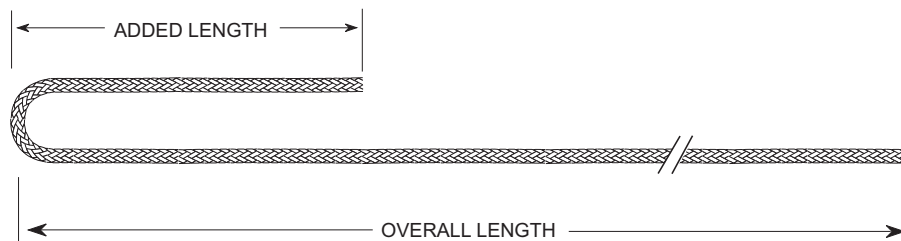
## 1. Determine the Length Required

### 1.1 Required length of a pre-spliced rope

The overall length required to perform a splice is the finished overall length of the rope + the length of the eye and the section of rope to be buried.

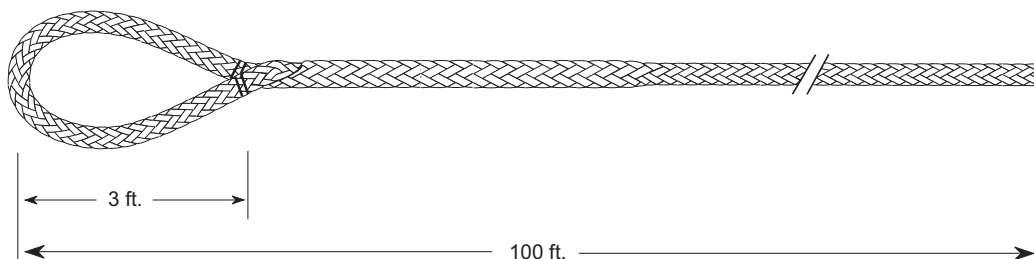


For 12 strand class II ropes, the length to be buried is 3 fid lengths. For fid lengths by diameter, reference the Rope Splicing section found on page 33 in the Commercial Marine Catalog. The ADDED LENGTH shown below is equal to the length of EYE A + 3 fid lengths + the length of EYE B (if eye each end) + 3 fid lengths. If a line were to be spliced with only one eye (see diagram below), the Length of Eye B would be zero.



\* For ropes with an eye one end only where the entire length of the rope is **not** being covered, an extra 1 fid length, of Dynalene should be added. This will be used to secure the Dynalene in the eye and the bitter end of the Dynalene to the rope. (See Finishing, pg 12)

### Sample calculation:



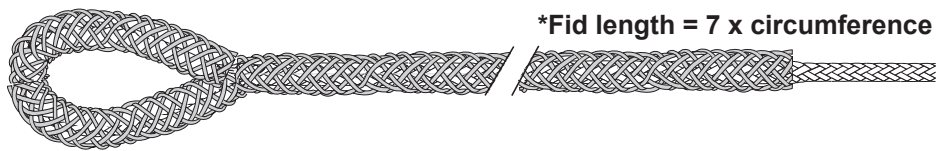


## ***To cover the entire line (eye one end):***

For a finished overall length of 100 ft with a 3 ft eye in one end, assuming a 6 inch circumference (2" diameter) rope, the Pre-spliced rope length required would be:

$$\begin{aligned}\text{Pre-Spliced Rope Length} &= \text{overall length} + \text{eye length} + \text{splice length} \\ &= 100 \text{ ft} + 3 \text{ ft eye} + 3 \times \text{fid length in ft.}^* \\ &= 113.5 \text{ ft of rope that will need to be covered}\end{aligned}$$

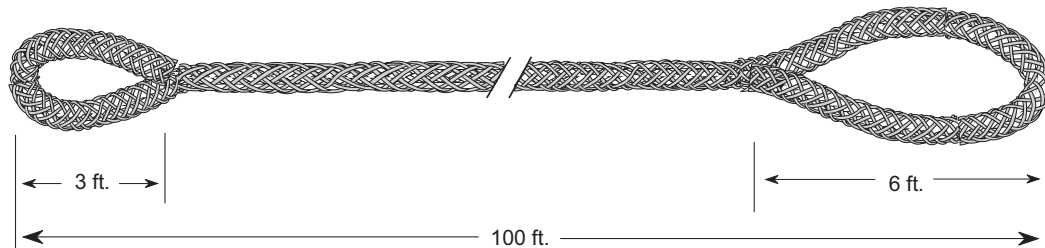
## ***To cover the eye and only a portion of the line:***



To cover only the eye plus the first 50ft in the sample shown above

$$\begin{aligned}\text{Pre-Spliced Rope Length} &= \text{overall length} + \text{eye length} + \text{splice length} \\ &= 50 \text{ ft} + 3 \text{ ft eye} + 3 \times \text{fid length in ft.}^* \\ &= 63.5 \text{ ft of rope that will need to be covered}\end{aligned}$$

## ***To cover the entire line (eye each end):***



For a finished overall length of 100 ft with a 3 ft eye in one end, 6 ft eye other end assuming a 6 inch circumference rope, the Pre-spliced rope length required would be:

$$\begin{aligned}\text{Pre-Spliced Rope Length} &= \text{overall length} + \text{eye A length} + \text{splice length} + \text{eye B length} + \text{splice length} \\ &= 100 \text{ ft} + 3 \text{ ft eye} + 3 \times \text{fid length in ft.}^*/12 + 6 \text{ ft eye} + 3 \times \text{fid length in ft.}^*/12 \\ &= 130 \text{ ft of rope that will need to be covered}\end{aligned}$$

## 1.2 Required Length of Dynalene

To determine your pre-spliced length of Dynalene, determine the length of rope to be covered and multiply by the factor from the table below:

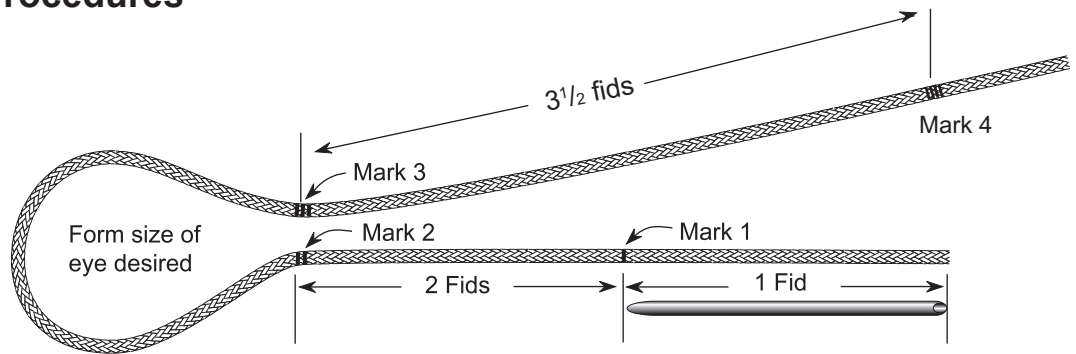
DYNALENE SIZE	ROPE DIA [IN]	ROPE DIA [MM]	MULTIPLY FACTOR	WEIGHT LBS/100FT
S	5/8	16	1.07	13.5
S	3/4	18	1.11	13.5
S	7/8	22	1.14	13.5
M	1	24	1.08	19.0
M	1 1/8	28	1.11	19.0
M	1 1/4	30	1.14	19.0
M	1 3/8	34	1.16	19.0
L	1 1/2	36	1.03	34.5
L	1 5/8	40	1.06	34.5
L	1 3/4	44	1.09	34.5
L	2	48	1.12	34.5
L	2 1/8	52	1.14	34.5
XL	2 1/4	56	1.08	89.0
XL	2 1/2	60	1.11	89.0
XL	2 5/8	64	1.14	89.0
XL	2 3/4	68	1.16	89.0
XL	3	72	1.21	89.0
XL	3 1/4	80	1.25	89.0

For example, to cover a 100ft Pre-Spliced Rope Length with a rope diameter of 2 in, the overall length of Dynalene required is:  $100 \times 1.12 = 112\text{ft}$ .

The pre-spliced length of Dynalene would be 112ft.

***\*Note: For eye and only a portion of the line – Add 1-1/2 fid lengths to your “pre-spliced length of Dynalene” figured above.***

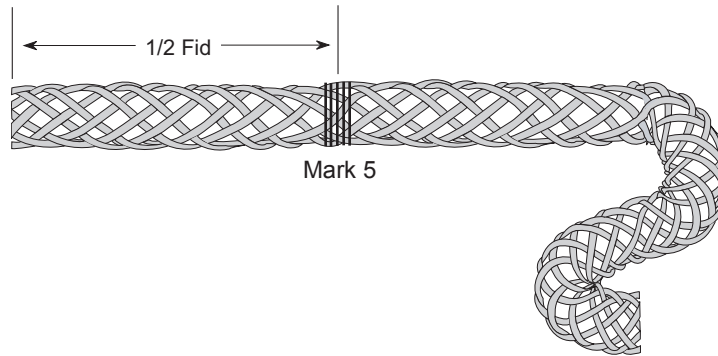
## 2. Splicing Procedures



### Step 1...Measurement

Tape end of line to be spliced and measure 1 fid length from taped end of line and make **Mark 1**. From **Mark 1**, measure (2) fid lengths and make **Mark 2**. Now form size of eye desired and make **Mark 3**. From **Mark 3**, measure 3-1/2 fid lengths and make **Mark 4**.

From the bitter end of the Dynalene, measure 1/2 fid length and make **Mark 5**.



Size of Dynalene	Total number of strands	Strands per bundle
S	12	2 strands in 6 bundles = 12 strands
M	12	2 strands in 6 bundles = 12 strands
L	32	5 strands in 4 bundles + 6 strands in 2 bundles = 32 strands
XL	32	5 strands in 4 bundles + 6 strands in 2 bundles = 32 strands

To make Dynalene handling easier, tape the ends of the Dynalene strands in pairs (1 s and 1 z strand per pair). This will allow the Dynalene to expand and fit over the rope without unbraiding (fig 1).

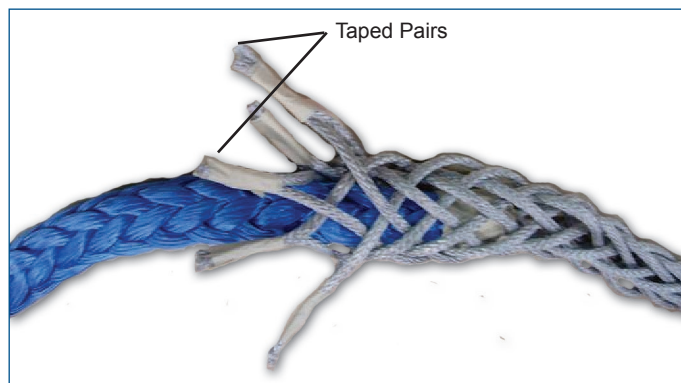


Fig. 1

# DYNALENE INSTALLATION INSTRUCTIONS

## Step 2...Insert Rope

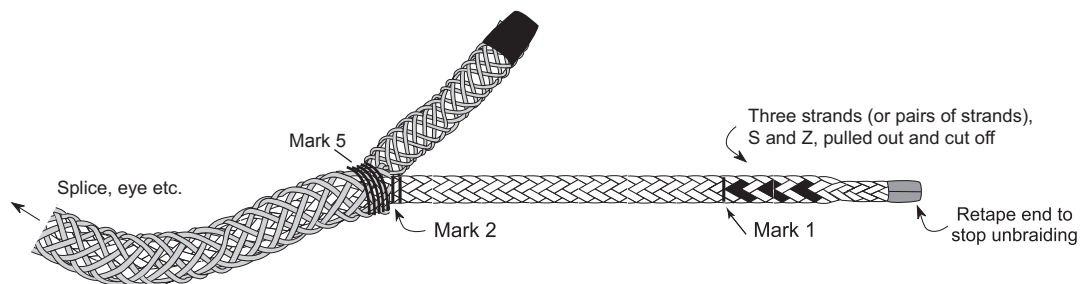
Insert the bitter end of the rope into Dynalene and push/slide the Dynalene cover back as far as needed. Once the length of the rope has been covered, extract the rope from the Dynalene at **Mark 5**. Pull the rope out of the Dynalene at **Mark 5** until **Mark 2** and **Mark 5** match. Tape the Dynalene tightly to the core rope at **Mark 2**.



Fig. 2

## Step 3...Taper the Rope Tail

From **Mark 1**, in the direction of the taped end of the line, mark every second S and Z strand\* for three strands. Cut every marked strand and pull out of line (tape at end can cause resistance and may have to be removed in order to pull out cut strands.)



Tapered end will now have only 6 strands remaining. Tape tapered tail tightly to keep from unbraiding.

*\*Larger rope diameters may have pairs of strands in S and Z direction. In this case, treat the pairs of strands as a single strand, marking and cutting both in each direction as described above.*

## Step 4...Create Access to the Splice Area

Form the eye by aligning Rope **Marks 2** and **3**, (see Fig. 3).

Be sure there is no twist in the rope throughout the eye portion.

Leaving some slack in the Dynalene (about like a comfortable jacket) extract the rope at **Mark 3** from the Dynalene. Pull until the rope between **Marks 3** and **4** is straight for splicing (see fig 4)

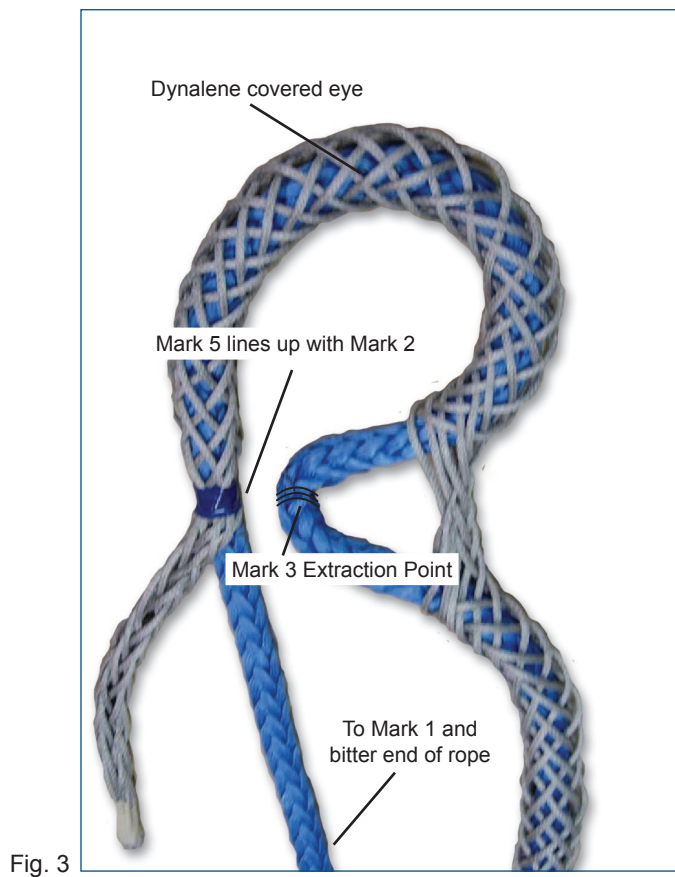


Fig. 3

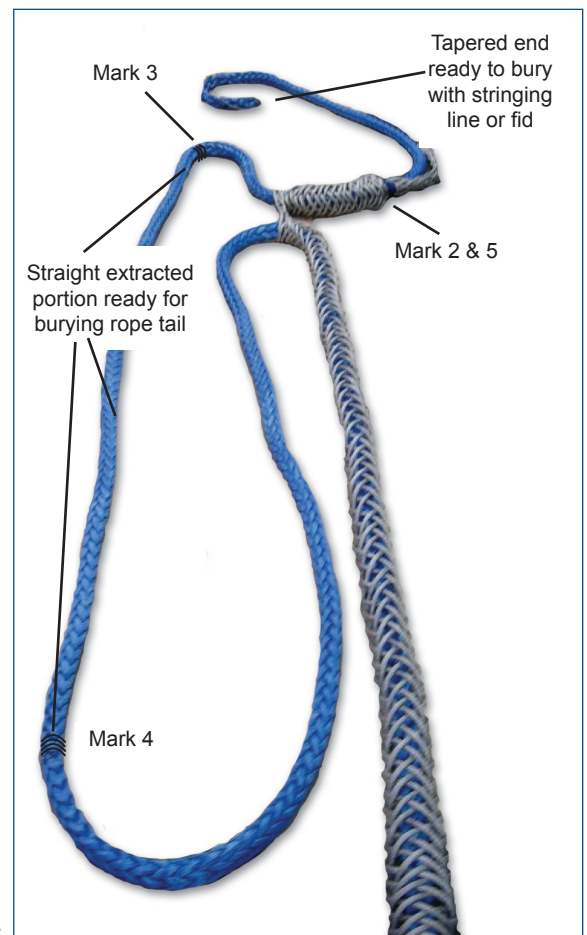


Fig. 4

# DYNALENE INSTALLATION INSTRUCTIONS

## Step 5...Form the Eye

Insert fid and tapered rope tail in at **Mark 3** and bring fid out at **Mark 4**. Pull fid and tapered tail out, till **Mark 2** matches **Mark 3**.

*Don't let the line twist.*

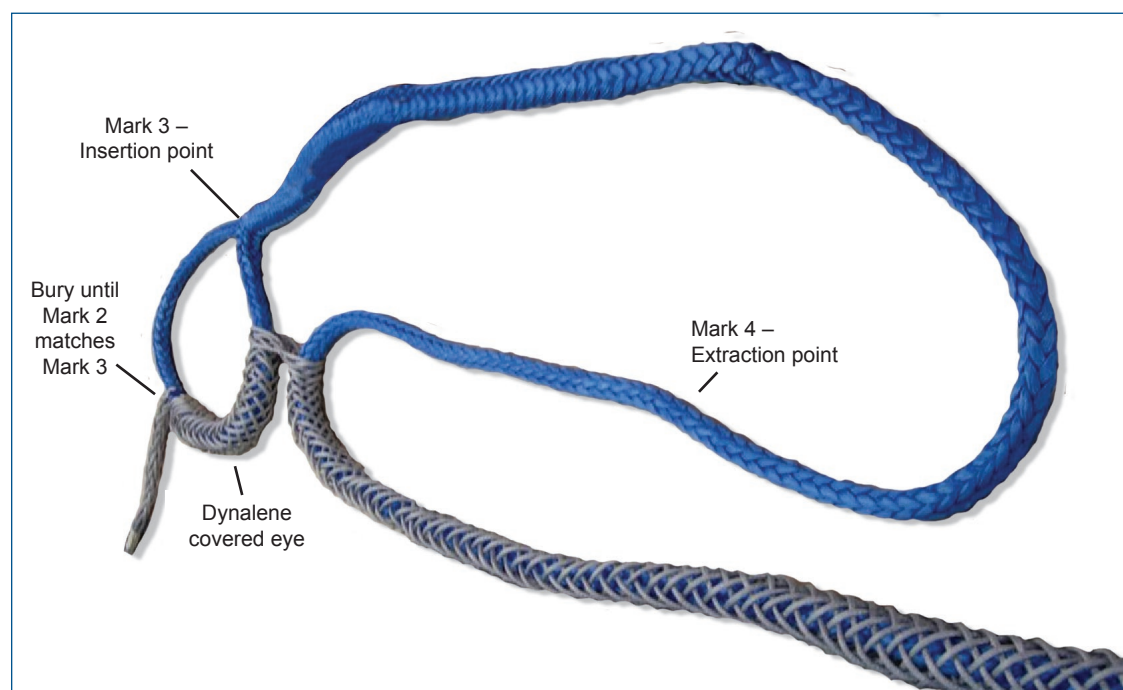
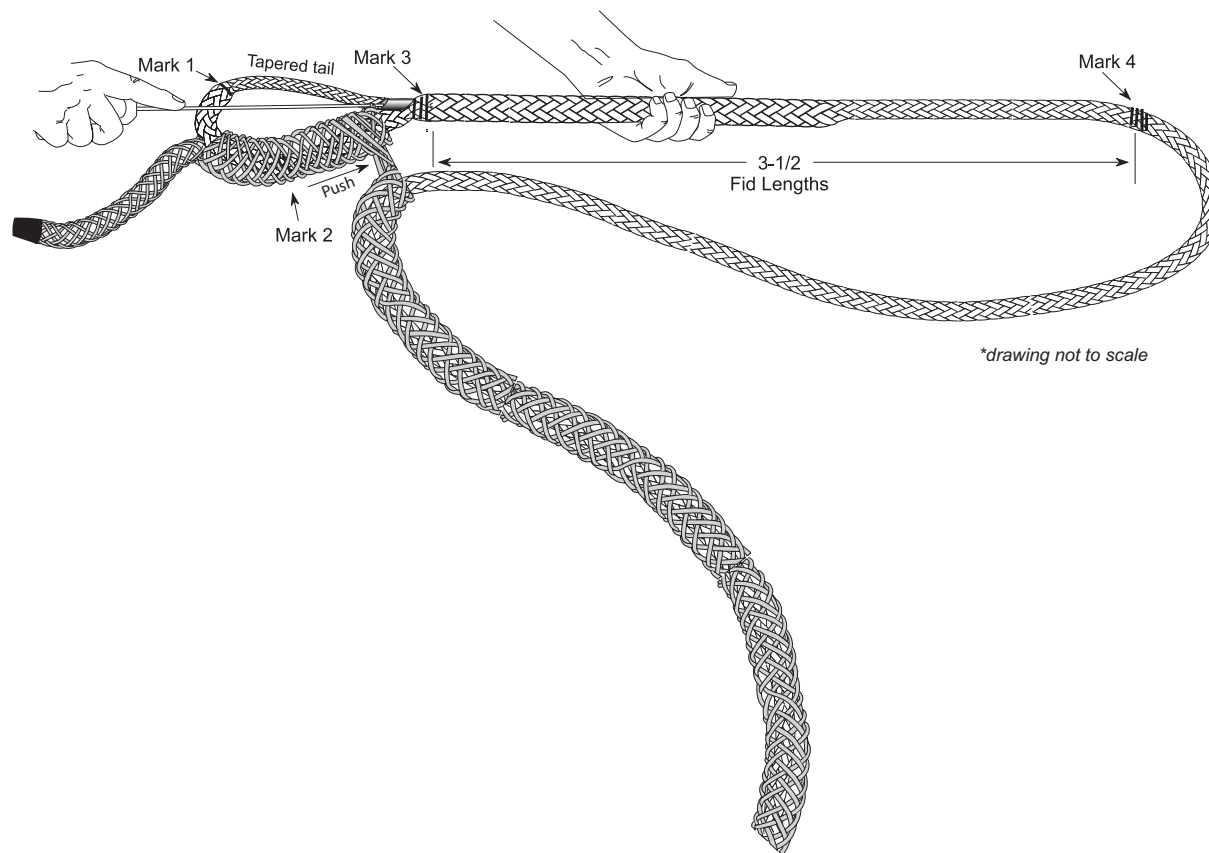


Fig. 5



## Step 6...Finish Burying

Pull hard on the tapered tail with one hand. With the other hand, smooth the bunched line towards the eye splice until **Marks 2** and **3** converge. Now, smooth the cover away from the eye towards **Mark 4**. Mark the tapered tail where it emerges at **Mark 4**. Pull tail out several inches, and starting at the new mark on the tapered tail, mark the crown of each strand working back toward the extraction point. Cut the strands at each new mark. Then with both hands and weight of body, smooth cover slack to bury tail in the standing part of the line.

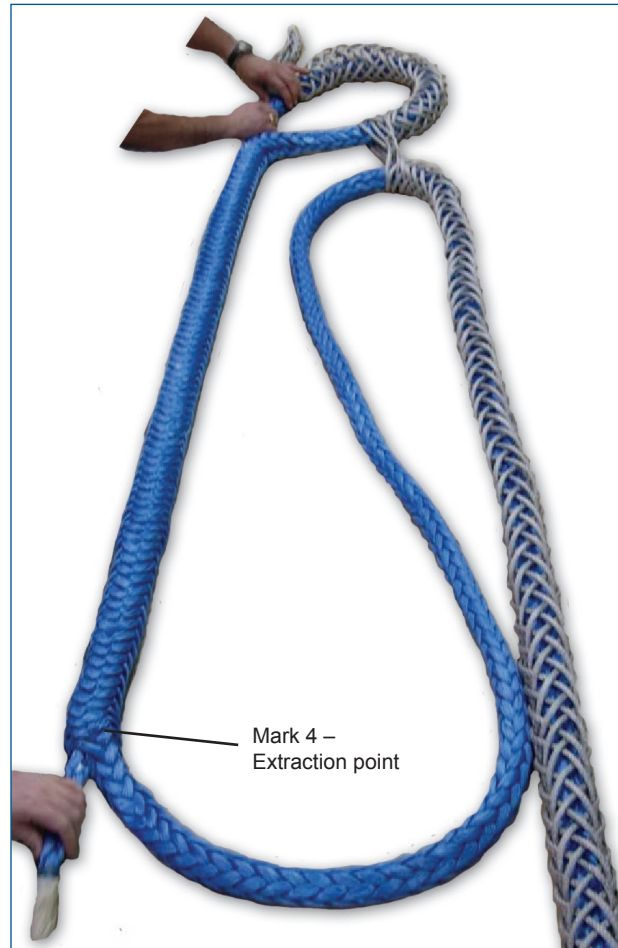
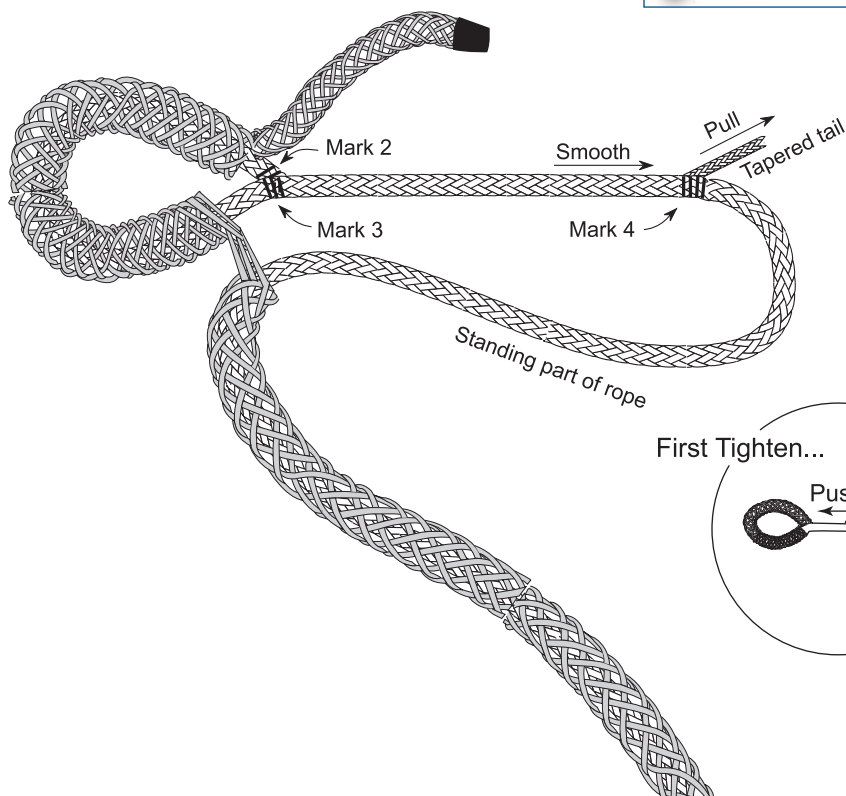
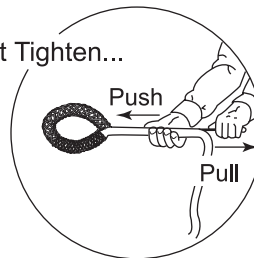


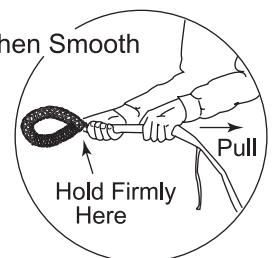
Fig. 6



First Tighten...



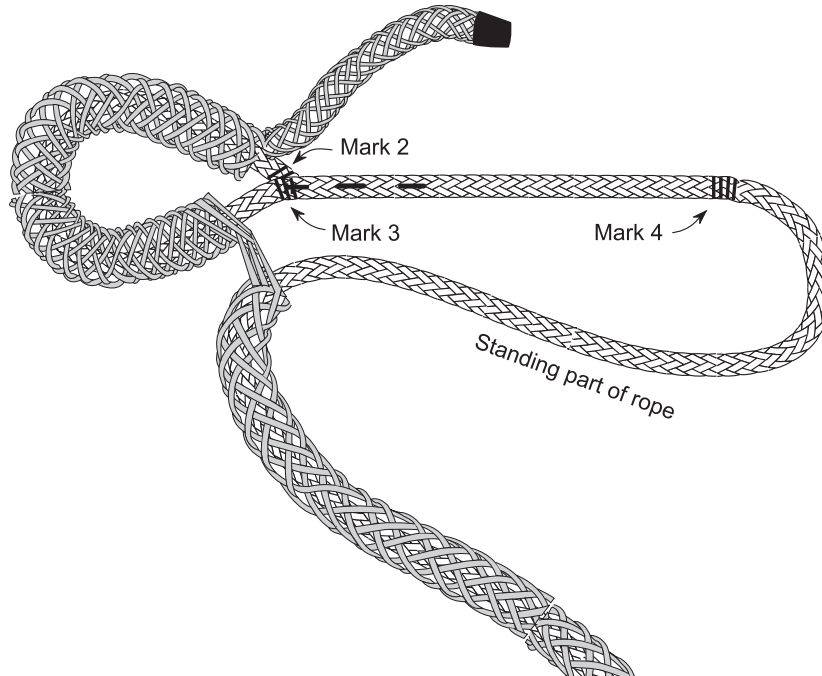
...Then Smooth



# DYNALENE INSTALLATION INSTRUCTIONS

## Step 7...Finishing Eye Splice

When finished, **Mark 2** and **Mark 3** should be at the same point in the vertex of the eye – which yields eye size desired. To finish eye splice, the splice must be lock-stitched (procedure following).

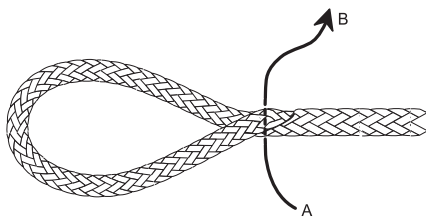


## Step 8..Secure the Eye with Lock-Stitch

Material Required: Approximately 1/2 fid length of nylon or polyester whipping twine or rope approximately the same size of the strands in the rope you are stitch-locking.

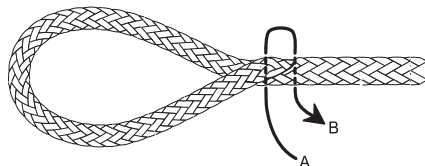
### Step 8.1

Pass stitching through spliced area near throat of eye as shown.



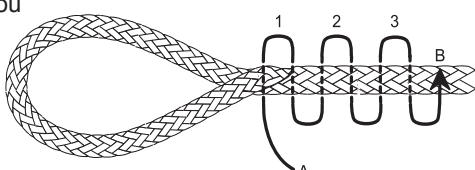
### Step 8.2

Reinsert as shown pulling snug but not tight.



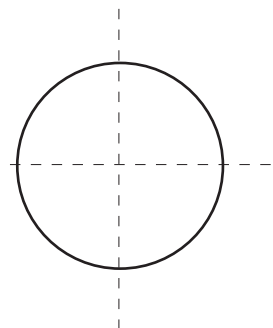
### Step 8.3

Continue to reinsert as shown until you have at least 3 complete stitches.



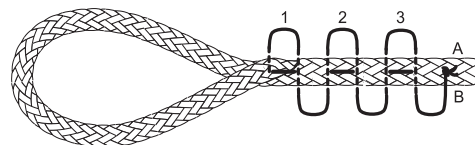
### Step 8.4

After completing Step 3, rotate spliced part of rope 90° and re-insert end A into spliced area in the same area and in the same fashion as in Steps 1, 2 and 3. The splice will now be stitched on two planes perpendicular to each other.



### Step 8.5

After stitching at least three complete stitches as in Step 3, extract both ends A and B together through the same opening in the braid. Tie them together with a square knot and reinsert back into braid.





## 2.1 Completion

Pull the rope back inside the Dynalene (see figure 7).



Fig. 7

Bury the Dynalene tail inside the Dynalene body (between the rope and the Dynalene (fig. 8).



Fig. 8

Remove the tape from the Dynalene tail and smooth out slack (fig. 9).



Fig. 9



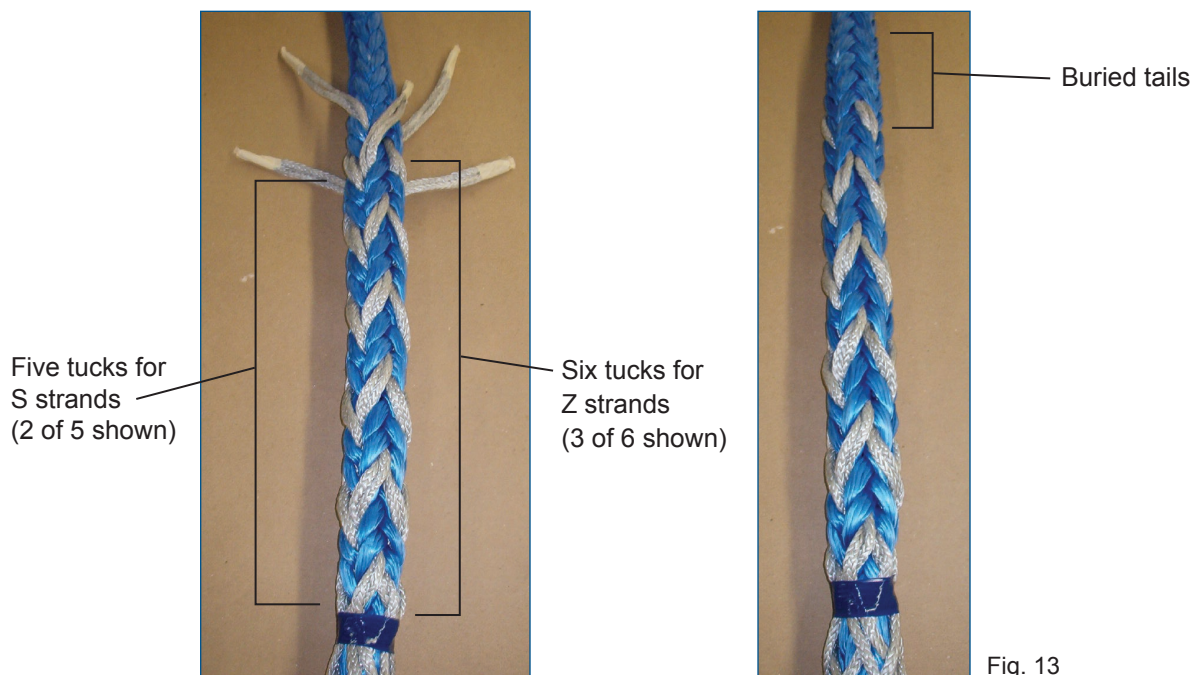
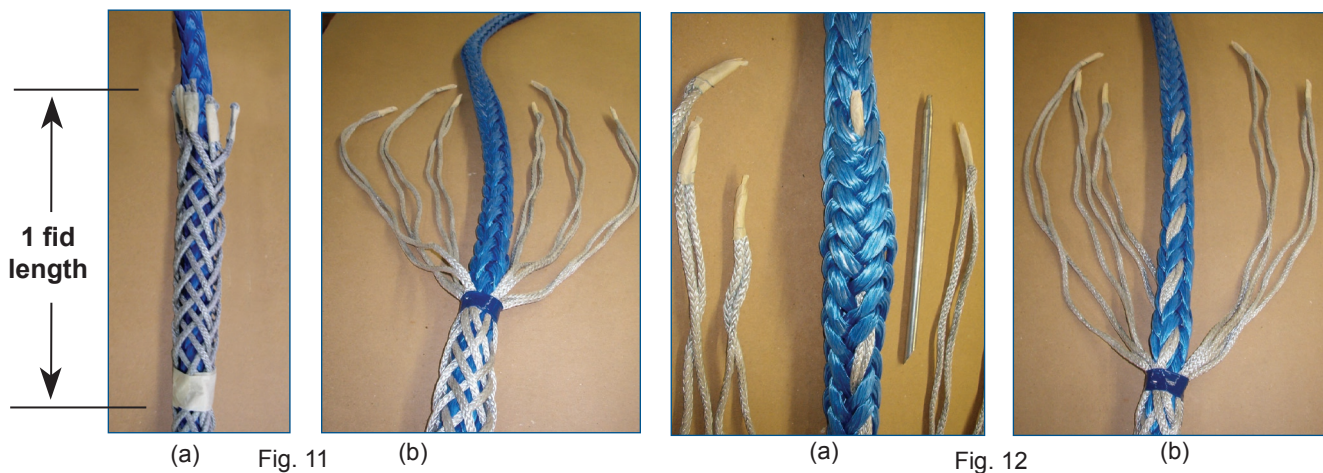
Fig. 10

## 3. Finishing

### ***Secure Open End of Dynalene (eye one end)***

Pull the Dynalene down the body of the rope to the same tightness as the Dynalene in the eye. Tape the Dynalene 1 fid length from the open end of the Dynalene (fig. 11). separate the Dynalene strands into 6 equal sized bundles (fig. 11).

Tuck into bitter end of the line around the rope. Begin with one bundle and perform 5 tucks through S strands. Leave the strand in the core at last tuck. Taking the adjacent bundle, perform 6 tucks through the Z strands. Leave the strand in the core at the last tuck (fig. 13). Repeat until remaining 4 stands have been tucked. One complete tuck consists of passing a strand over one strand and under two strands.



### ***Finish Installation for Ropes With Eye Each End***

Repeat steps 2.1-2.3

# Eye Splice Instructions

## Class I

### 16-Strand Arborist Climbing Lines



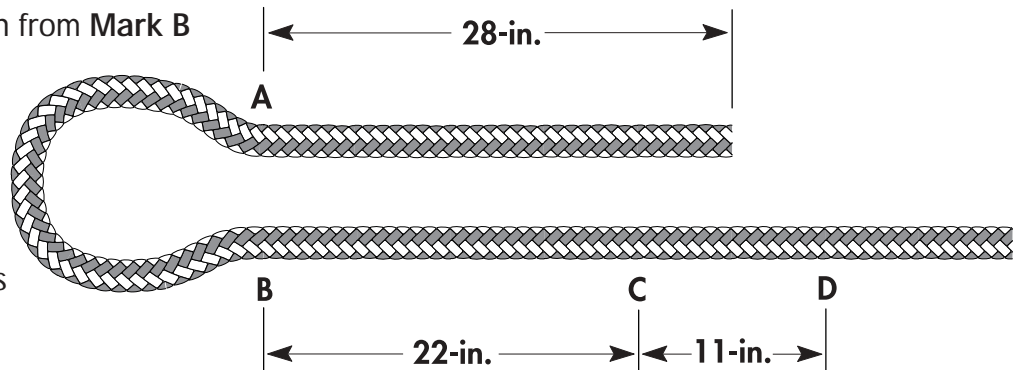
*Class 1 16-strand ropes are made from any or all of the following fibers: olefin, polyester, or nylon.*

#### TOOLS REQUIRED:

- Fid (a wire fid is the easiest tool to use)
- Marking pen
- Masking tape
- Scissors
- Bench vise (not required but does make the job easier)

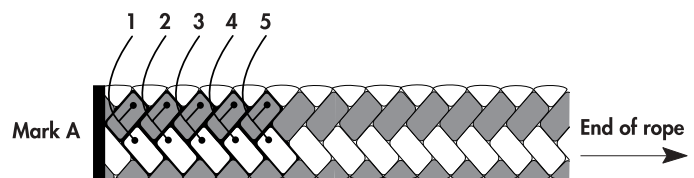
#### Step 1...Measurements

- Measure 28-inches from end of rope and make **Mark A**.
- Form desired size of eye and make **Mark B** opposite **Mark A**.
- Measure 22-inches down from **Mark B** and make **Mark C**.
- Measure 11-inches down from **Mark C** and make **Mark D**.
- Tie a knot in body of the rope about 11-inches down from **Mark D**.



#### Step 2...Marking Cover Taper

- From **Mark A** count 5 strand pairs toward the end of rope and mark the 5th pair (left and right strands).
- Continue counting down 5 pairs and marking the 5th pair until a total of 5 strand pairs are marked.



#### Step 3...Core Removal

Carefully open up the braid at **Mark C** and pull out the core yarns from the end of the rope back to **Mark C**.

## Step 4...Tapering End of Rope

- a. Pull out marked strand pairs from braid. **Do not cut.**
  - b. Tape end of cover tail and attach fid to tapered end of rope.
- 

## Step 5...Performing Splice

- a. Insert fid into rope at **Mark B** and out at **Mark D**.
  - b. Pull tail through body of rope from **B** to **D**.
  - c. As each marked strand pair is about to be buried in the rope, at **Mark B** carefully cut each strand in the marked pair.
  - d. Continue to pull the tail end of the rope through until **Mark A** and **Mark B** coincide.
- 

## Step 6...Marking Tails

- a. Smooth rope from eye back to **Mark D** to remove all slack in the braid.
  - b. Smooth rope from knot to **Mark C** to bury as much of the core yarns as possible.
  - c. Mark both cover tail and core yarns where they exit from the body of the rope.
- 

## Step 7...Final Taper

- a. Pull buried tail and cover yarns out of rope at their respective exit points until about 13-inches are exposed. This is the distance that the tail and core yarns overlap in the splice.
  - b. Cut both cover tail and core yarns where they were marked in *Step 6c* above.
  - c. Taper both cover tail and core yarns from the ends back about 6.5-inches. This taper provides a smooth transition from the buried tail of the splice to the core yarns extending down the remainder of the rope.
  - d. Bury the exposed ends by alternately smoothing the rope from the eye down and from the knot up.
- 

## Step 8...Finishing the Splice

- a. Secure knot firmly in place and pull sharply on eye to make sure all slack is removed from splice area and cover and core tails are seated properly.
  - b. Apply whipping to base of eye for a distance of about 1-inch or 2 rope diameters.
- 

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# Tuck Splice Instructions for Class 1 Round Plait Ropes

Class 1 Round Plait ropes are made from any or all of the following fibers: olefin, polyester, or nylon.



The Round Plait construction requires a splicing technique different from other 12-strand braided ropes. The "tuck" procedure may be performed in the field on both new and used rope with a minimum of tools.

## Materials required:

- Tape - ordinary paper masking tape
- Wire fid - see chart to determine proper size
- Cutting tool - a knife or scissors to cut the strands
- Tape measure

## Fid Specifications:

A fid length is equal to 7 times the rope circumference. To complete the splice a Samson 2" diameter wire fid may be used for most rope sizes. The dimensions of this fid are:

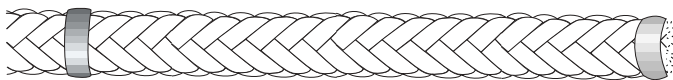


Fid Length	Wire Diameter	Width
21" (1/2 scale*)	1/4"	1-1/4"

\*1/2 Scale used to keep wire fids to a practical length.

## Step 1...Measurement

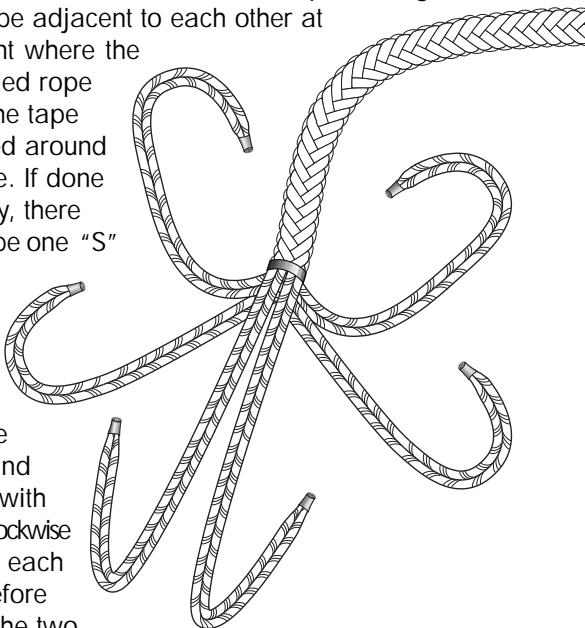
Lay out the rope and measure down from the end of the rope a length that is equal to 7 times the rope circumference. At this point put one loose wrap of tape around the rope.



## Step 3...Tape Strand-Pairs

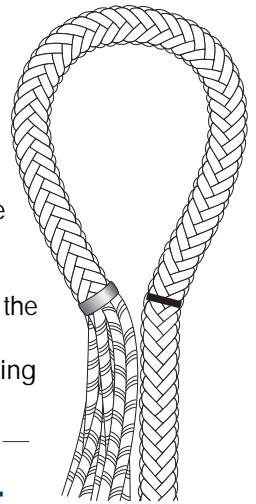
Combine the 12 individual strands into six pairs of two strands each. The strands that are paired together should be adjacent to each other at the point where the unbraided rope meets the tape wrapped around the rope. If done correctly, there should be one "S" strand

(strand with clockwise twist) and one "Z" strand (strand with counterclockwise twist) in each pair. Before taping the two strands together, twist each strand separately to maintain the twist of the fiber.



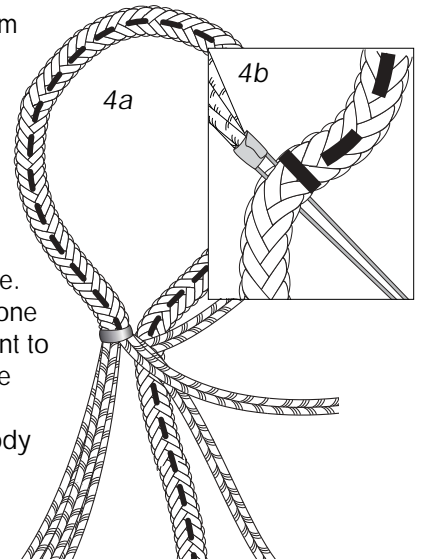
## Step 2...Marking Eye Size

Individually tape each of the 12 strand ends at the end of the rope. After the ends are taped, unbraid the rope back to the point wrapped with tape in Step 1. Form the desired eye size using the tape wrapped around the rope as a reference mark. Mark the body of the rope at the point coinciding with the tape.



## Step 4...Insert Strand-Pairs into Body of Rope

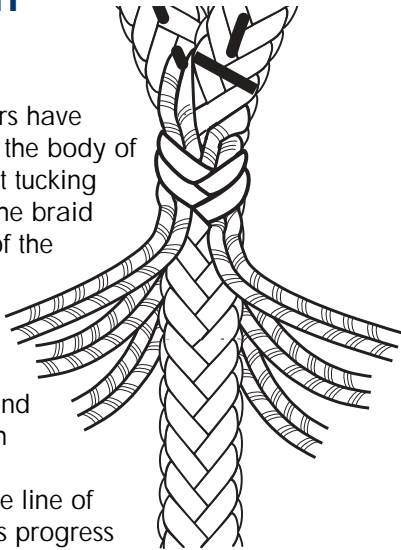
Lay out the rope to form an eye taking care there are no twists in the rope (4a). The black line running along the axis of the rope illustrates how the strand-pairs are separated for the splice. The 3 strand-pairs on one side of the line adjacent to the standing part of the rope will be passed directly through the body of the rope. 3 of the strand-pairs must be passed directly through the middle of the rope to the other side (4b).





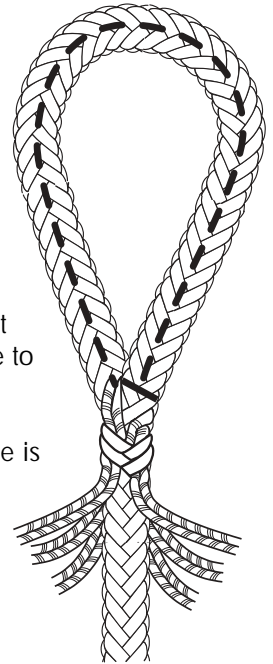
## Step 5...Begin Tucks

After the 3 strand-pairs have been passed through the body of the rope you can start tucking the strand-pairs into the braid of the standing part of the rope. One complete tuck consists of passing a strand-pair under two individual strands in the braid and over one strand. Each strand-pair is always tucked under the same line of braid so that the tucks progress straight down the body of the rope.



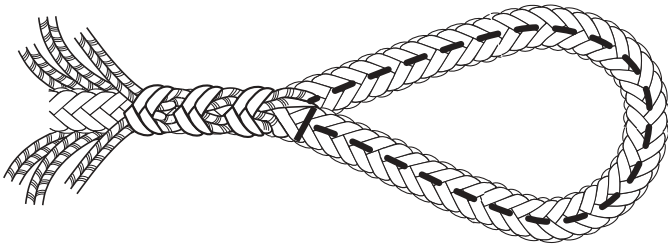
## Step 6...Removing Slack from First Tuck

After one complete tuck has been made with each of the six strand-pairs, pull on each pair to remove any slack from the strands and snug-up the base of the eye. Note: When pulling the strand-pairs, do not attempt to pull them so tight that they become straight. It is desirable to leave the tucked strands with some twisted in them so they have the necessary elongation when the rope is placed under load.



## Step 7...Complete Tucking Procedure

Do 3 complete tucks with all 6 strand-pairs. Each strand-pair is always tucked under the same line of the braid so that the tucks progress straight down the body of the rope.



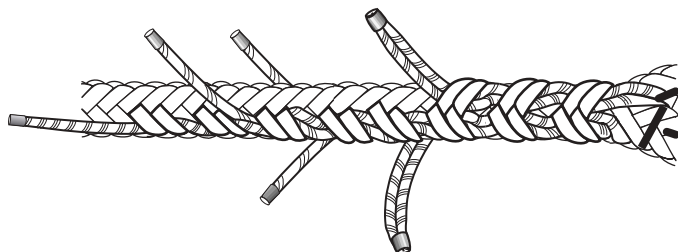
## Step 8...Tapering the Splice

After completing the first 3 tucks drop every other strand-pair and continue to do three more tucks with the remaining 3 pairs.



## Step 9...Finishing the Splice

After completing the second set of 3 tucks, untape the 3 strand-pairs used to make these tucks. Drop one strand from each pair and do at least 2 more tucks with the remaining single strand of each pair. Once you have completed the last tucks, cut off the excess material and tape or whip the ends. Leave enough of an end protruding so that the end does not slip back into the rope when the rope is loaded.



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# Samson Class 1 Round Plait End-for-End Splice

*Class 1 Round Plait ropes are made from any or all of the following fibers: olefin, polyester, or nylon.*

These instructions illustrate a “tuck” splice that can be performed in the field on new and used rope.

Before you begin the splice you will need the following:

1. Tape: ordinary paper masking tape works well.
2. Fid: a Samson Tubular Aluminum Fid or Wire Fid may be used. Tubular Fid size is determined by the size of the strands. For smaller ropes it may be the easier tool to use.
3. Cutting tool: a knife or scissors to cut the strands.
4. Tape measure.

**Special Tip:** When making the tucks using this splice don't pull the strands excessively tight and keep them twisted. This allows the tucked strands to elongate the same as the body of the rope, thereby preventing the tucked strands from being prematurely overloaded.

**To Begin the Splice:** Lay out and measure down from each end of the rope a length that is equal to seven times the rope circumference (21 times rope diameter). At this point put one loose wrap of tape around the rope (Point “A”). Tape each of the 12 strands at the end of the rope. After the ends are taped unbraid each rope back to point “A”.

## STEP 1



Combine the 12 individual strands into six pairs of two strands each. The strands that are paired up should be adjacent to each other at point “A”. If done correctly, there should be one “S” strand (clockwise twist), and one “Z” strand (counterclockwise twist) in each pair.

## STEP 2



Tape the two strands together. It is desirable that these strands retain some twist. To twist the strands merely hold the two strands as shown and rotate the taped end between the strands.

## STEP 3



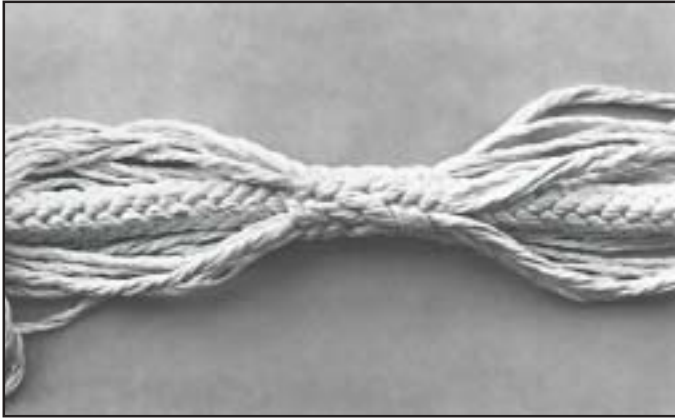
Join the two ropes together at point “A” and combine the pairs by starting at any one set of opposing set of strands and inserting one pair of strands between the strands of its opposite pair. This step is alternated, right, left, etc. as you join the pairs around the rope until all pairs have been joined.

## STEP 4



Now you can begin to tuck the pairs. One complete tuck consists of passing a strand pair over one strand and under two strands of the body of the rope. Pull the strands through and repeat on opposite pair, tucking straight down the body of the rope.

## STEP 5



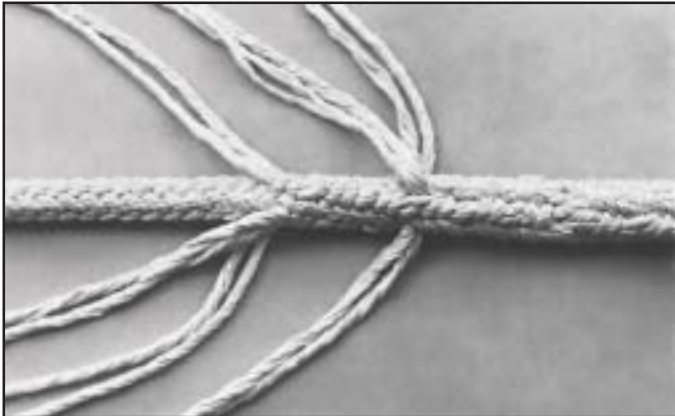
Do one complete set of tucks on all 12 strand pairs. Note: when pulling on the strand pairs, do not attempt to pull them so tight that they become straight. It is desirable to leave the tucked strands with some twist in them so that they have the necessary elongation when the rope is placed under a load

Do three complete tucks on each side of the splice with all six strand pairs. Each strand pair is always tucked under the same line of braid so that the tuck progresses straight down the body of the rope.

## STEP 6



## STEP 7



After completing the first three tucks drop every other strand pair and continue to do three more tucks with the remaining three pairs. This is done on each side of the splice.

After completing the second set of three tucks untape the three strand pairs used to make these tucks. Drop one strand from each pair and do at least two more tucks with the remaining single strand of each pair.

## STEP 8



## STEP 9



Once you have completed the last tucks, cut off the excess material and tape or whip the ends. Leave enough of an end protruding so that the end does not slip back into the rope when a load is placed on it.

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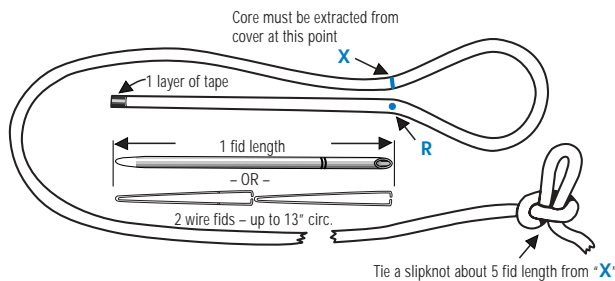


## Class I Double Braid Eye Splice\* Instructions for New Rope

Class I Double Braided ropes are made from any or all of the following fibers: olefin, polyester, or nylon.

*\*This splice is not suitable for core-dependent double braid constructions. Special splicing instructions are available for core-dependent double braided ropes; please contact Customer Service at (800) 227-7673 or (360) 384-4669. All Samson splicing instructions can be downloaded from our website, [www.samsonrope.com](http://www.samsonrope.com)*

All published Samson double braid rope strengths are derived from the testing of spliced rope.



### STEP 1 Marking the Measurements

Tape end to be spliced with one thin layer of tape. Then measure one (1) tubular fid length or two (2) wire fid lengths (because a wire fid is half size) from the end of the rope and mark. This is **Point R** (Reference).

From **R** form a loop the size of the eye desired and mark. This is **Point X** where you extract the core from inside the cover. If using a thimble, form the loop around the thimble. Tie a tight slip knot approximately five (5) fid lengths from **X**.

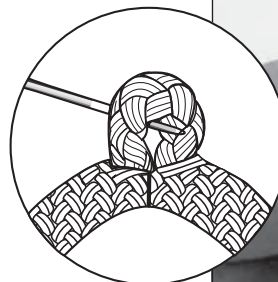
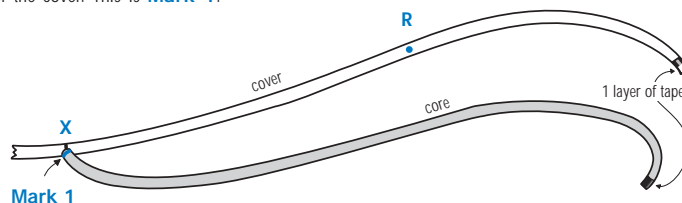
**This must be done.**



### STEP 2 Extracting Core

Bend the rope sharply at **X**. With the pusher or any sharp tool such as an ice pick, awl, or marlin spike, spread the cover strands to expose core. First pry, then pull the core completely out of cover from **X** to the taped end of the rope. Put one layer only of tape on the end of the core. Note: Do not pull cover strands away from rope when spreading cover as this will distort the rope unnecessarily.

To assure correct positioning of **Mark 1** do the following: Holding the exposed core, slide cover as far back as possible toward the tightly tied slipknot. Then, firmly smooth the cover back from the slipknot toward the taped end. Smooth again until all cover slack is removed. Then, mark the core where it came out of the cover. This is **Mark 1**.



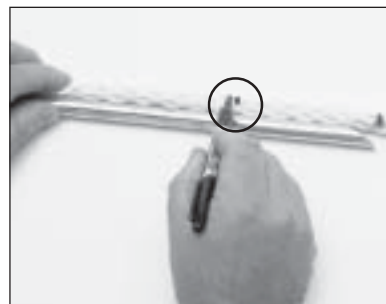
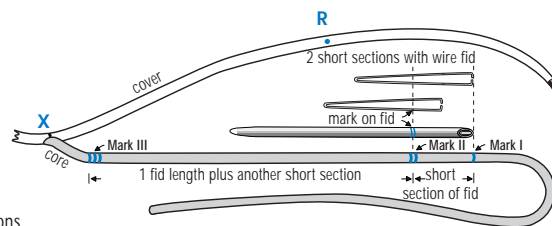
## STEP 3

### Marking Core

Again slide the cover toward the slipknot to expose more cover.

From **Mark 1**, measure along the core toward **X** a distance equal to the short section of a tubular fid (two short sections if using a wire fid) and make two heavy marks. This is **Mark 2**.

From **Mark 2** measure in the same direction one fid length plus another short section of the fid (with a wire fid, double measurements) make three (3) heavy marks. This is **Mark 3**.



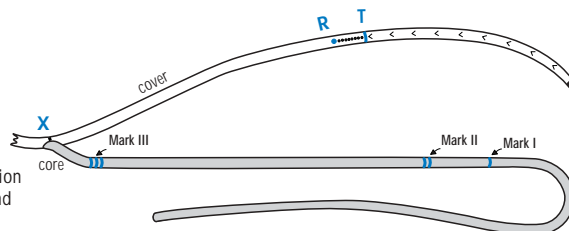
## STEP 4

### Marking Cover for Tapering

Note the nature of the cover braid. It is made up of strands with either one, two or three ends. By inspection you can see half the strands revolve to the right around the rope and half revolve to the left.

Beginning at **R** and working toward the taped end of the cover, count eight (8) consecutive strands (single or pairs) which revolve to the right (or left). Mark the eighth (8th) strand. This is **Point T** (see inset). Make **Point T** go completely around the cover.

Starting at **T** and working toward the taped cover end, count and mark the fifth (5th) right and left strand. From that mark count to the fourth (4th) right and left strand. Proceed in this manner, marking the fifth (5th) right and left strand and then marking the fourth (4th) right and left strand, until you reach the end of the taped cover.



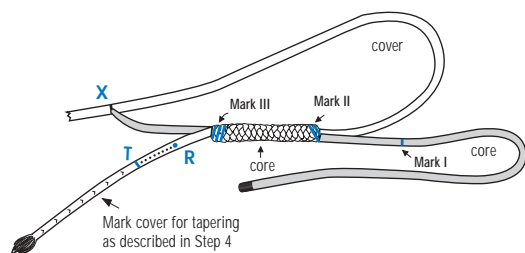
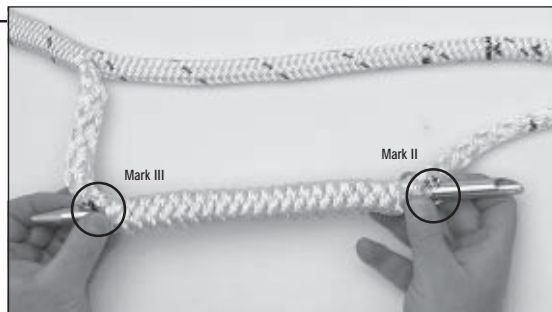
## STEP 5

### Putting Cover Inside Core

Insert the fid into the core at **Mark 2**. Slide it through and out at **Mark 3**.

Add extra tape to the cover end; then jam it tightly into the hollow end of the fid (see insert). Hold core lightly at **Mark 3**, place pusher joint into taped end and push fid and cover through at **Mark 2** and out at **Mark 3** (with a wire fid, first press prongs into cover, then tape over. Then, after fid is on, milk braid over fid while pulling fid through from **Mark 2** to **Mark 3**).

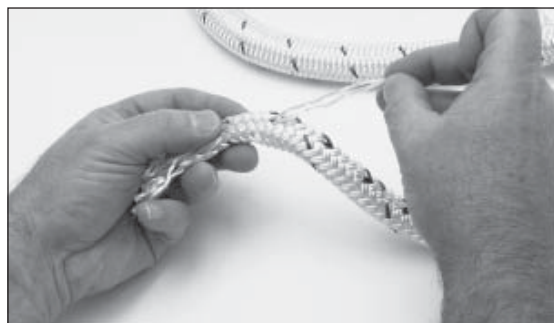
Take the fid off the cover; continue pulling cover tail through the core until **Mark R** on the cover emerges from **Mark 3**. Then remove the tape from the end of the cover.



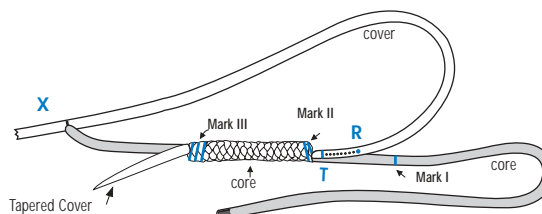
## STEP 6

### Performing Taper

Make sure the tape is removed from the cover end. Start with the last marked pair of cover strands toward the end, cut and pull them completely out (see photo). Cut and remove next marked strands and continue with each right and left marked strands until you reach **Point T**. Do not cut beyond this point.



The result should be a gradual taper ending in a point. Very carefully pull the cover back through the core until **Point T** emerges from **Mark 2**.







## STEP 7

### Reinserting Core into Cover

From **X** on the cover, measure approximately one-third (1/3) a tubular fid length toward the slip knot on the rope and mark this as **Z**.

You are now ready to put the core back into the cover from **T** to **Z**. Insert the fid at **T**, jam the taped core end tightly into the end of the fid. With the pusher, push the fid and core through the cover tunnel, past **X** and through the cover at **Z**.



Inserting fid through cover



Pushing fid and core through cover

When pushing the fid past **X** to **Z**, make sure the fid does not catch any internal core strands.

Note: Depending on the eye size, a fid may not be long enough to reach from **T** to **Z** in one pass. If not, bring the fid out through the cover, pull the core through and reinsert the fid into exactly the same hole it came out of. Do this as many times as needed to reach **Z**.



Pulling core end to tighten cross-over

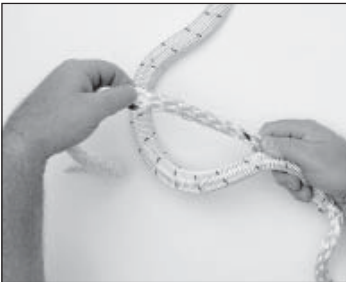
## STEP 8

### Marking Reduced Volume Tail Core

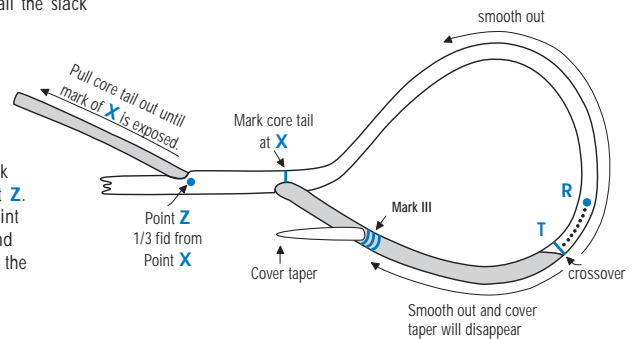
Alternately pull on the core tail at **Z**, then pull on the tapered cover at **Mark 3**. The crossover should be tightened until it is approximately equal to the diameter of the rope.

Smooth out the cover of the eye completely, from crossover **T** toward **X** to get all the slack out of the eye area.

Mark the core tail through the cover at **Point X**.



Pull the core tail out until the mark just made on the core is exposed at **Z**. Reduce the core volume at this point by cutting and removing one strand at each group, progressing around the circumference of the rope.



Measure one-third (1/3) of a tubular fid length from the start of the reduction cuts (mark) toward end and mark. Cut off remaining tail at this point. Make a 45° angled cut to prevent a blunt end.

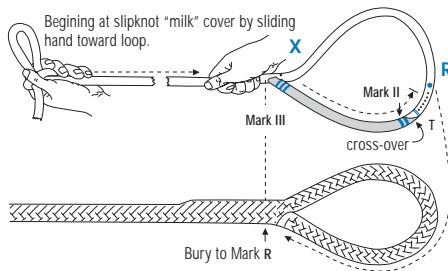


With one hand, hold crossover (Mark T). Firmly and completely smooth out cover section of eye from crossover toward X. Reduced volume core tail should disappear into cover at Z.

Smooth out the core section from the crossover toward **Mark 3** and the cover taper will disappear into the core.



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## STEP 9

### Burying Exposed Core

Hold the rope at the slipknot and with the other hand milk the cover toward the splice, gently at first, then more firmly. The cover will slide over **Mark 3**, **Mark 2** and crossover **T** up to **R** (it may be necessary to occasionally smooth out eye during milking to prevent reduced volume tail catching in the throat of the splice).

If bunching occurs at the crossover preventing full burying, smooth cover from **T** to **X**. Grasp crossover at **T** with one hand and then firmly smooth cover slack (female side of eye) with the other hand toward the throat (**X**). Repeat as necessary until bunching disappears.

Continue milking until all cover slack between the knot and the throat of the eye has been removed.

#### Tip: Before burying the cover over the crossover:

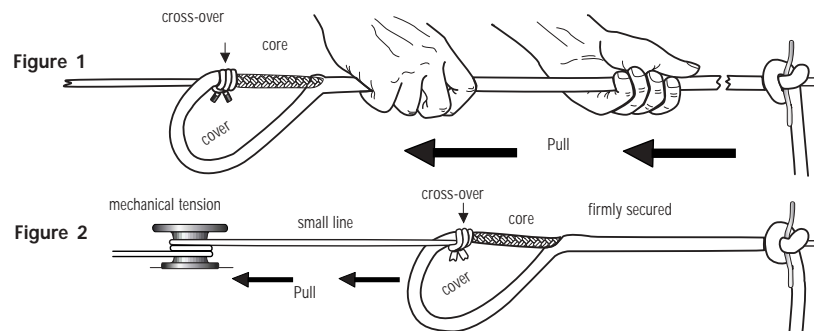
A. Anchor the loop of the slipknot by tying it to a stationary object before starting to bury. You can then use both hands and the weight of your body to more easily bury the cover over the core and crossover (see Figure 1 and Figure 2).

B. Holding the crossover tightly, milk all the excess cover from **R** to **X**.

Flex and loosen the rope at the crossover point during the final burying process. Hammering the cover at **X** will help loosen the strands.

With larger ropes it is helpful to securely anchor the slipknot, attach a small line to the braided core at the crossover and mechanically apply tension with either a block and tackle, capstan, come-a-long, or power winch. Tension will reduce the diameter of the core and crossover for easier burying (see Figure 2).

In order to prevent no-load opening of your eye splice, Samson recommends lock-stitching the eye. Instructions for performing this procedure are outlined below.



## Procedure for Lock-Stitching Eye Splices

Stitch locking is advantageous to prevent no-load opening due to mishandling.

Material Required: About one (1) fid length of nylon or polyester whipping twine approximately the same size as the strands in the rope you are stitch locking.

The same strands cut from the rope you are stitch locking may also be used.



### Step 1

Pass stitching through spliced area near throat of eye as shown.

### Step 2

Reinsert as shown pulling snug but not tight.

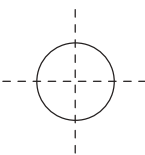
### Step 3

Continue to reinsert as described above until you have at least three (3) complete stitches.



### Step 4

After completing Step 3, rotate spliced part of rope 90° and reinsert end "A" into splice area in the same fashion as in Steps 1, 2 and 3. The splice will now be stitched on two planes perpendicular to each other. Make sure you do not pull stitching too tight.



Configuration of cross section after completing Step 4.



### Step 5

After stitching at least three (3) complete stitches as in Step 3, extract two ends A and B together through the same opening in the braid. Tie them together with a square knot and reinsert back into the braid between the cover and core.



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# Class I Double Braid End-For-End Splice



Class 1 Double Braids are made from any or all of the following fibers: olefin, polyester, or nylon.

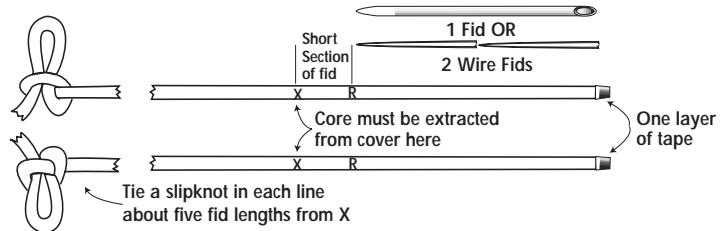
This Splice can be performed on new and used rope. This is an all-purpose splice technique designed for people who generally splice used rope as frequently as new rope. It retains up to 85% of average new rope strength and in used rope up to 85% of the remaining used rope strength.

## Step 1...Marking the Measurements

Tape the end of each rope with one thin layer of tape. Lay two ropes to be spliced side by side and measure one tubular fid length (two wire fid lengths because wire fid is 1/2 size) from end of each rope and make a mark. This is point R (Reference).

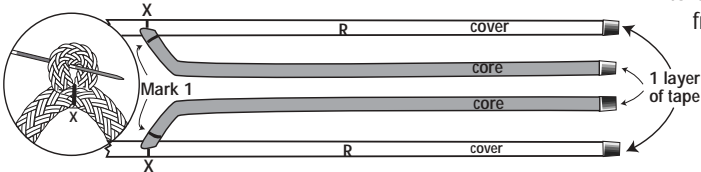
From R measure one short fid section length as scribed on the fid; then, mark again. This is Point X, where you should extract core from inside cover. Be sure both ropes are identically marked. Tie a slipknot approximately five fid lengths from X.

If you require the rope with the finished splice to be a certain overall length, refer to "Special Tips for Splicing".



## Step 2...Extracting the Cores

Bend rope sharply at X. With the pusher or any sharp tool such as an ice pick, awl, or marlin spike, spread cover strands to expose core. First pry; then, pull core completely out of cover from X to the end of rope. Put one layer only of tape on end of core.



DO NOT PULL COVER STRANDS AWAY FROM ROPE AS THIS WILL DISTORT COVER UNNECESSARILY

where it comes out of cover. This is Mark 1. Do this to both ropes.

To assure correct positioning of Mark 1 do the following: holding the exposed core, slide cover as far back towards the tightly tied slip knot as you can. Then, firmly smooth cover back from the slip knot towards taped end. Smooth again until all cover slack is removed. Then, mark core

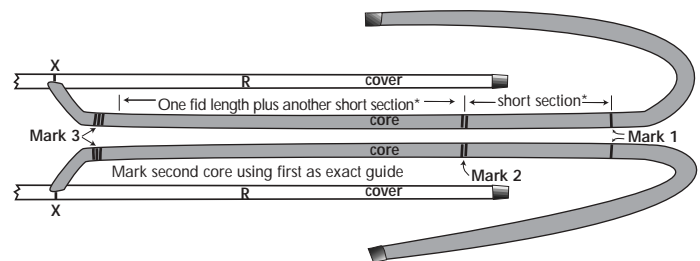
## Step 3...Marking the Cores

Hold one core at Mark 1 and slide cover back to expose more core.

From Mark 1, measure along core towards X a distance equal to the short section of fid\* and make two heavy marks. This is Mark 2.

From Mark 2 measure in the same direction **one fid length plus another short section \*** and make three heavy marks. This is Mark 3.

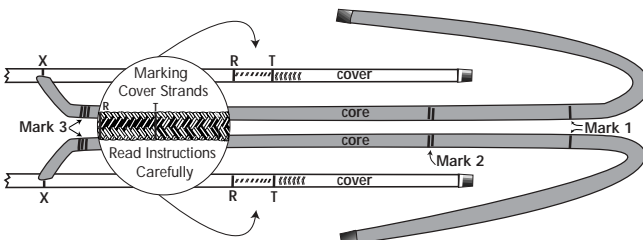
Mark second core by laying it alongside the first and using it as an exact guide.



\* With wire fid double measurements up to 13" circumference

## Step 4...Marking the Cover for Tapering

Note nature of the cover braid. It is made up of strands. By inspection you can see that half the strands revolve to the right around the rope and half revolve to the left.



Beginning at R and working toward the taped end of cover, count eight consecutive pairs of cover strands which revolve to the right (or left). Mark the 8th pair. This is Mark T (see inset). Make Mark T go completely around cover.

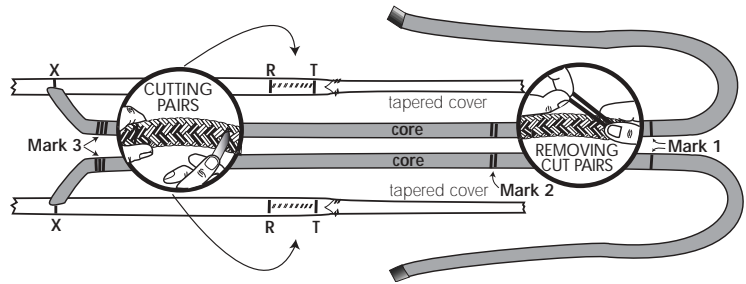
Starting at T and working toward taped cover end **count and mark every second right pair** of strands for a total of six. Again, starting at T, count and mark every second left pair of strands for a total of six (see inset). Make both ropes identical.

## Step 5...Performing the Taper

First remove tape from cover end. Starting with last marked pair of cover strands toward the end, cut and pull them completely out (see inset). Cut and remove next marked strands and continue with each right and left marked strands until you reach Point T. **Do not cut beyond this point** (see inset).

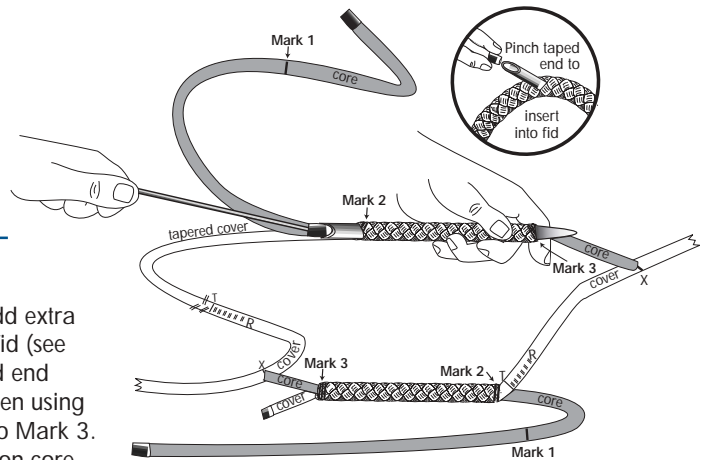
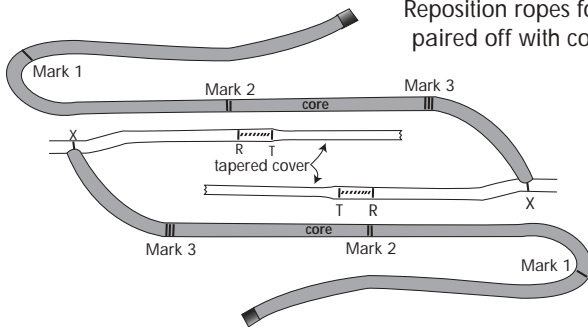
Retape tapered end.

Cut and remove marked strands on the other marked cover, again stopping at T. Retape tapered end.



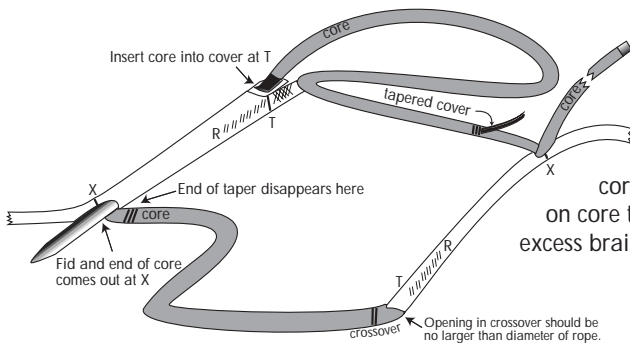
## Step 6...Repositioning the Ropes

Reposition ropes for splicing according to diagram. Note how cover of one rope has been paired off with core of the opposite line. **Avoid twisting.**



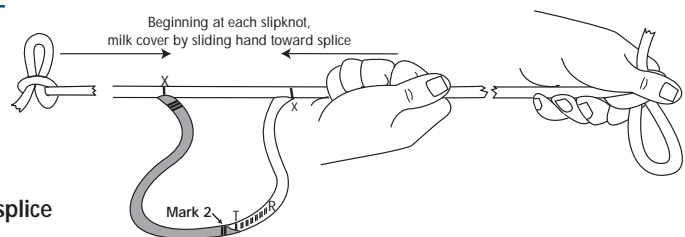
## Step 7...Putting the Cover Inside Core

Insert fid into one core at Mark 2 and bring it out at Mark 3. Add extra tape to tapered cover end then jam it tightly into hollow end of fid (see inset). Hold core lightly at Mark 3, place pusher point into taped end pushing fid and with cover in it from Mark 2 out at Mark 3. When using wire fid, attach fid to cover. Then pull fid through from Mark 2 to Mark 3. Pull cover tail through core until Mark T on cover meets Mark 2 on core. Insert other cover into core in same manner.



## Step 8...Reinserting the Core into Cover

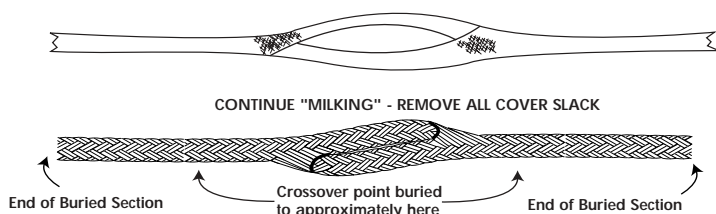
Now put core back into cover from T to X. Insert fid at T, jam taped core tightly into end of fid. With pusher, push fid and core through cover bringing out at Point X. When using wire fid attach fid to tapered core. Then pull fid and braid through from T to X. Do this to both cores. Remove tape from end of cover. Bring crossover up tight by pulling on core tail and on tapered covered tail. Hold crossover tightly smoothing out all excess braid away from crossover in each direction. Trim end of Tapered cover at an angle to eliminate blunt end. Tapered cover tail will disappear at Mark 3. Cut core tail off close to Point X at an angle.



## Step 9...Burying the Exposed Core

Hold rope at slipknot and with other hand milk cover toward the splice, gently at first, and then more firmly. The cover will slide over Mark 3, Mark 2 the crossover and R. Repeat with the other side of the splice.

Continue burying until **all cover slack between the knot and the splice** has been removed.



## Step 10...Finishing the Splice

The splice is done when **all cover slack** has been removed and there is an opening in the splice approximately equal in length to the diameter of rope. If, at the opening, one side of the splice is noticeably longer than the other side, something is wrong. Check Steps 1 - 9 and remake if necessary.

Now untie the slip knots.



# BACK SPLICE - Class 1 Double Braids



*Class 1 Double Braids are made from any or all of the following fibers: olefin, polyester, or nylon.*

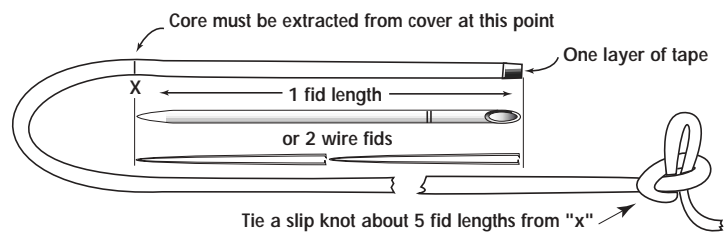


The Samson Back Splice is a neat and permanent way to terminate the end of a line. It is flexible and can be tapered to reduce bulk. To make a Back Splice half as long as described, use half measurements.

## Step 1...Marking the measurements

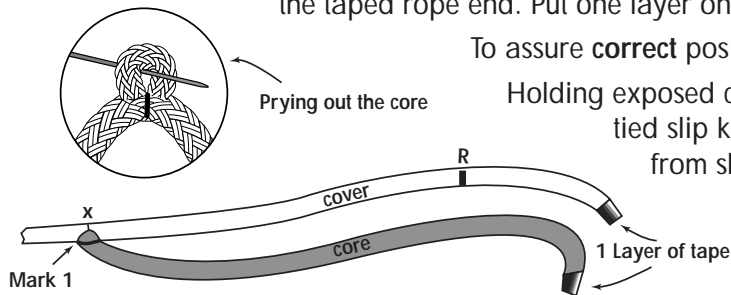
Tape end to be spliced with one thin layer of tape. Then, measure one tubular fid length (2 wire fid lengths) from end of rope and mark. This is Point X (Extraction).

Tie a tight slip knot approximately five fid lengths from X. **This must be done.**



## Step 2...Extracting the cores

Bend rope sharply at X. With pusher or any sharp tool such as an ice pick, awl, or marlin spike, separate cover strands to expose core. First pry; then, pull core completely out of cover from X to the taped end. Put one layer only of tape on end of core.



To assure **correct** positioning of Mark 1 do the following.

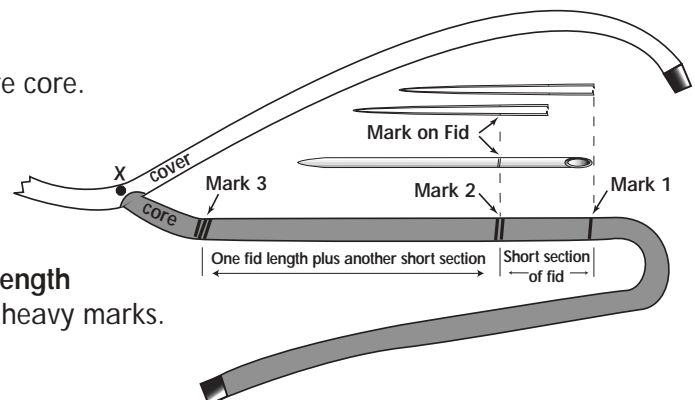
Holding exposed core, slide the cover as far back towards the tightly tied slip knot as you can. Then, firmly smooth cover back from slip knot towards the taped end. Smooth again until all cover slack is removed. Then, mark core where it comes out of the cover. This is Mark 1.

## Step 3...Marking the core

Again slide cover towards the slipknot to expose more core.

From Mark 1 measure along core towards X a distance equal to the **short section** of fid and make two heavy marks. This is Mark 2 (double measurements with wire fid).

From Mark 2 measure in the same direction **one fid length plus another short section** of the fid and make three heavy marks. This is Mark 3 (double measurements with wire fid).

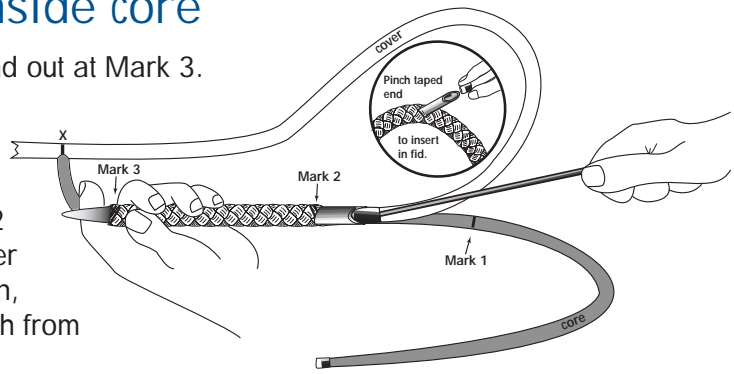




## Step 4...Putting the cover inside core

Insert fid into core at Mark 2. Slide fid through and out at Mark 3.

Pinch taped end of cover, jam it tightly into hollow end of fid (see inset). Hold core lightly at Mark 3, place the pusher point into the taped end, and push fid and cover through from Mark 2 and out at Mark 3. When using wire fids for larger size ropes, attach fid to taped cover. After fid is on, milk the braid over the fid while pulling fid through from Mark 2 to Mark 3.

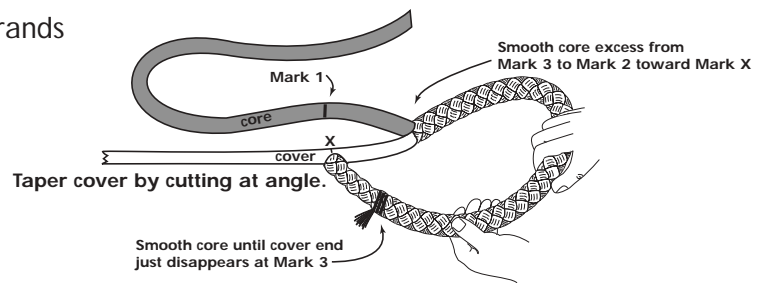


## Step 5...Adjusting the core over cover

Remove tape from cover end. Cut (trim) cover strands at an angle (taper) to avoid blunt end.

Smooth core from Mark 2 towards Mark 3 until cover ends **just** disappear inside.

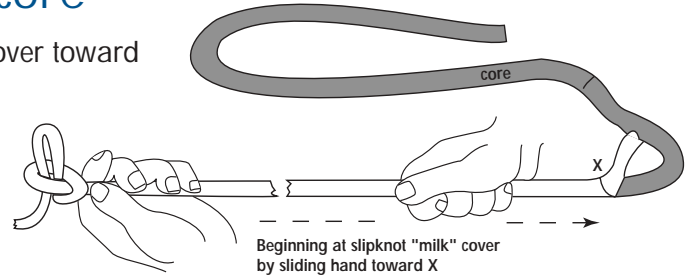
Next, holding core at Mark 3, smooth core from Mark 3 to Mark 2. Do this until all excess is eliminated.



## Step 6...Burying the exposed core

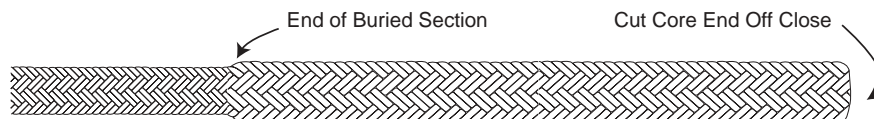
Hold rope at slipknot and with other hand, milk the cover toward splice, gently at first, and then more firmly. The cover will slide over Mark 3, Mark 2, and finally X. Be sure all excess cover is milked out so that X (a bump) is well inside the cover.

If final burying is difficult, flex the splice to loosen the strands, then continue burying.



## Step 7...Finished Splice

Cut the protruding core off close at the cover. Once again milk cover firmly towards the end so that it covers the cut off core.



*Splicing instructions are intended only for use by those with experience and knowledge in splicing techniques. Samson cannot be held liable for the performance of splices done by non-Samson personnel.*

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# Class 1 Double Braid Eye Splice for Used Rope

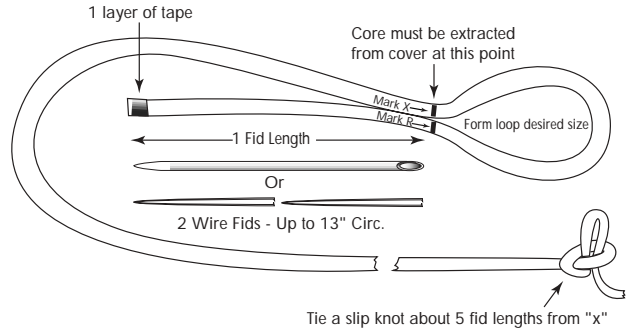
*Class 1 Double Braided ropes are made from any or all of the following fibers: olefin, polyester, or nylon.*

This is an eye splice which can be performed on used rope. This is an all-purpose splice technique designed for people who generally splice used rope as frequently as new rope. It retains up to 90% of the average new rope strength and in used rope up to the same proportion of residual used rope strength. *You may wish to read the supplemental information, "Special Tips for Splicing Used Rope" before beginning.*

Splicing used rope can be made easier by first understanding the rope condition. Natural shrinkage has occurred caused by water and heat. In addition, the cover yarns have often been abraded. Soak the section of rope to be spliced in water for several minutes - this lubricates and loosens fibers.

## Step 1 ... Marking the Measurements

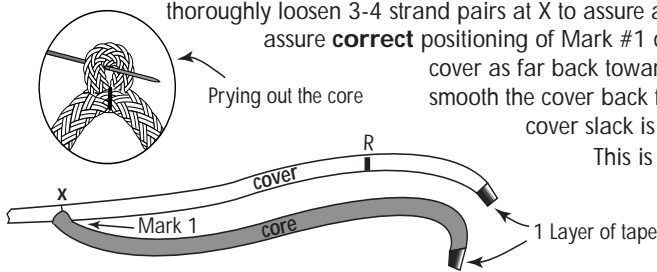
Tape end to be spliced with one thin layer of tape. Then, measure one tubular fid length (2 wire fid lengths) from end of rope and mark. This is point R (Reference). From R form a loop the size of the eye desired and mark. This is Point X where you extract core from inside the cover. If using a thimble, form the loop around the thimble\*. Tie a tight slip knot approximately five fid lengths from X. **This must be done!** \*You may wish to read supplemental info "Special Tips for Splicing" before installing thimble. If rope needs to be a specific length, also see "Special Tips for Splicing."



## Step 2 ... Extracting the Core

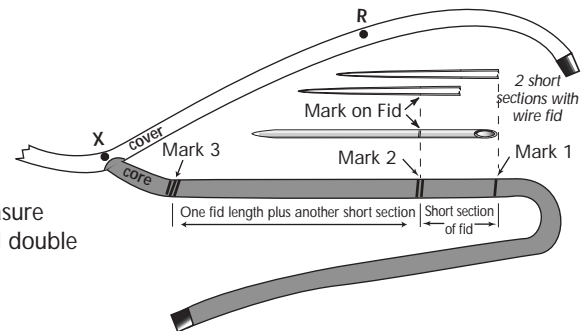
Bend rope sharply at X. With the pusher or any sharp tool such as an ice pick, awl, or marlin spike, spread the cover strands to expose core. First pry; then pull the core completely out of cover from X to the taped end of the rope. Put one layer only on end of core.

**Tip:** After marking cover untape end of rope, grasp end of core, and slide back cover pulling out core. This loosens and bunches up cover strands in the area of Point X and makes it easier to open up cover strands for extraction. Also, thoroughly loosen 3-4 strand pairs at X to assure a large and flexible hole for extraction, see left. To assure **correct** positioning of Mark #1 do the following: Holding the exposed core, slide cover as far back towards the tightly tied slip knot as you can. Then, firmly smooth the cover back from the slip knot towards taped end. Smooth again until all cover slack is removed. Then, mark the core where it comes out of the cover. This is Mark 1.



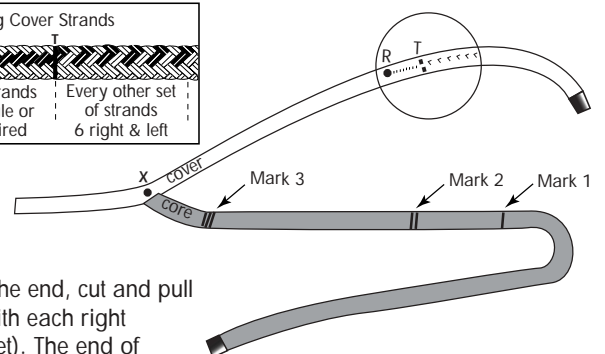
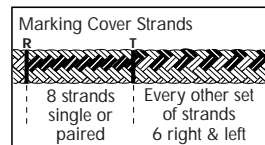
## Step 3 ... Marking the Core

Again slide cover toward slipknot to expose more core. From Mark 1, measure along core towards X a distance equal to the short section of tubular fid (2 short sections with wire fid) and make two heavy marks. This is Mark 2. From Mark 2, measure in the same direction one fid length plus another short section of the fid, (with wire fid double measurements) make 3 heavy marks. This is Mark 3.



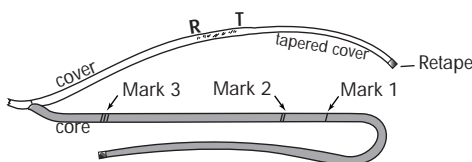
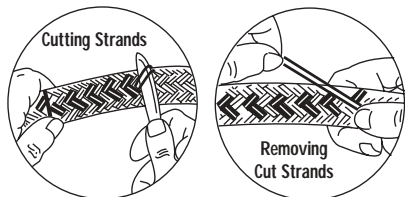
## Step 4 ... Marking the cover for tapering

Note nature of cover braid. It is made up of strands - single or paired. By inspection you can see half the strands revolve to the right around rope and half revolve to the left. Beginning at "R" and working toward taped end of the cover, count 8 consecutive strands (one or two) which revolve to the right (or left). Mark the 8th. This is Point T. (See Inset). Make Mark T go completely around cover. Starting at T and working toward the taped cover end, count and mark every second right set of strands for a total of 6. Again starting at T, count and mark every second left set of strands for a total of 6.



## Step 5 ... Performing the Taper

First remove tape from cover end. Start with last marked set of cover strands toward the end, cut and pull them completely out (See Inset). Cut and remove next marked strands and continue with each right and left marked strands until you reach Point T. Do not cut beyond this point. (See Inset). The end of the cover has now been tapered from "T" to the end. Retape tapered end.

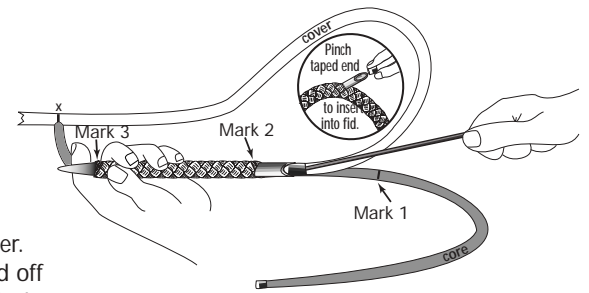


Note: If the same strand(s) is marked twice by accident, continue as though it is another strand.

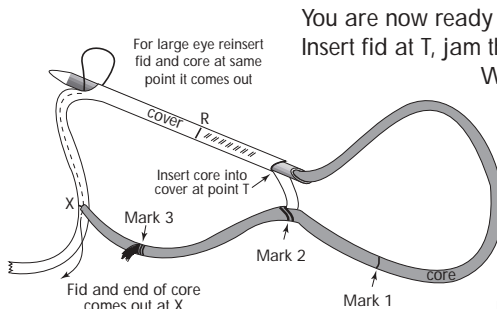


## Step 6 ... Putting the Cover Inside Core

Insert fid into core at Mark 2. Slide it through and out at Mark 3. Add extra tape to tapered cover end; then jam it tightly into the hollow end of fid (See Inset). Hold core lightly at Mark 3, place pusher point into taped end, and push fid and cover through from Mark 2 and out at Mark 3. With wire fid first press prongs into cover, then tape over. Insert fid and milk braid over fid while pulling fid through Mark 2 to Mark 3. Take the fid off the cover. Continue pulling cover tail through the core until Mark T on the cover meets Mark 2. Then remove tape from end of tapered cover.



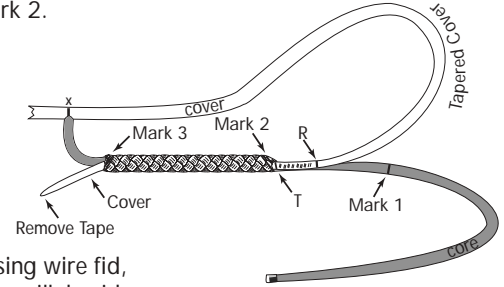
## Step 7 ... Reinserting Core Into Cover



You are now ready to put core back into cover from T to X. Insert fid at T, jam the taped cover end tightly into end of fid.

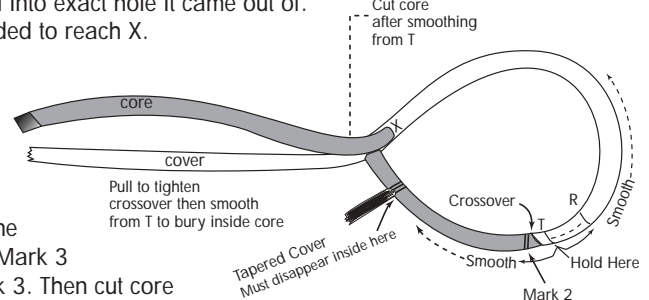
With pusher, push fid and core around to, and through opening at X (exactly where core was brought out). When using wire fid, attach fid to tapered core. After fid is on, milk braid over fid while pulling through from T to X.

Depending on eye size, fid may not be long enough to reach from T to X in one pass. If not, bring fid out through cover, pull core through and reinsert fid into exact hole it came out of. Do this as many times as needed to reach X.



## Step 8 ... Preparing to Bury Core

Next, pull on core tail coming out at X, then on tapered cover coming out at Mark 3, the crossover should be tightened until opening in crossover is approximately equal to diameter of rope. Hold the loop at the crossover with one hand. With other hand firmly smooth towards X in one direction, and towards Mark 3 in other direction. Remove all cover slack. Tapered cover will disappear at Mark 3. Then cut core tail off close where it comes out at X.



## Step 9 ... Burying the Exposed Core

Hold rope at slipknot and with other hand milk cover toward splice, gently at first, then more firmly. Cover will slide over Mark 3, Mark 2, the crossover, and R. Then smooth loop from T to X removing all slack. Continue milking until all cover slack between knot and throat of eye has been removed.

Tip: Before burying the cover over the crossover:

**A.** Anchor loop of slipknot by tying it to stationary object before starting to bury. You can then use both hands and weight of body go more easily bury cover over core and crossover (See Fig. 1 & 2).

**B.** Holding the crossover tightly milk all the excess cover from R to X.

Flex and loosen the rope at the crossover point during the final burying process. Hammering cover at point X will help loosen strands.

The use of shock cord in a rolling hitch around the cover is useful to make final burying easier and more complete. pull on the hitch toward the eye until all cover slack is removed. See "Special Tips for Splicing Used Rope."

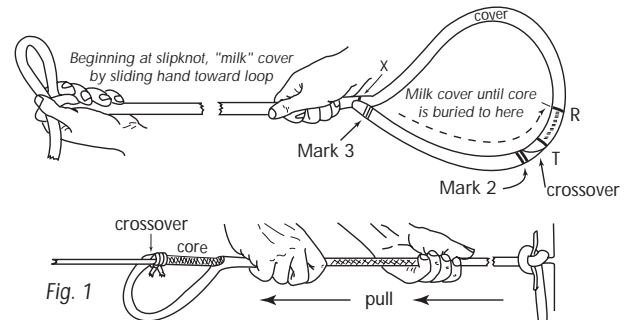
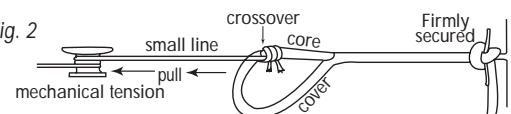


Fig. 1

For burying process, with larger ropes it is helpful to securely anchor slip knot, attach a small line to the braided core at the crossover and mechanically apply tension with either a block and tackle, capstan, come-a-long, or power winch. This tension will reduce diameter of core and crossover for easier burying.

Fig. 2

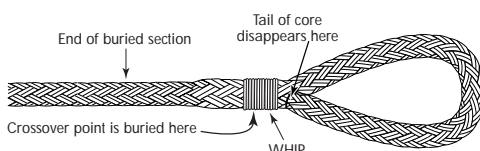


## Step 10 ... Finishing the Splice

Now untie the slipknot. If eye is not the right size, carefully check Steps 1 through 9.

If a hollow spot appears at the throat this means that the core tail was cut off too short. Do not worry as this does not affect the splice performance nor its strength. Reason: the total load of an eye splice is split between its own two legs. Therefore, each side of the splice only has to support 50% of the total load. The Braided Cover alone can handle this load factor.

You should whip the eye splice starting at base of throat of eye, especially if rope is 1" diameter and larger. Supplemental sheet on whipping is available.



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# Class 2 Core-dependent Double Braid Splice Instructions



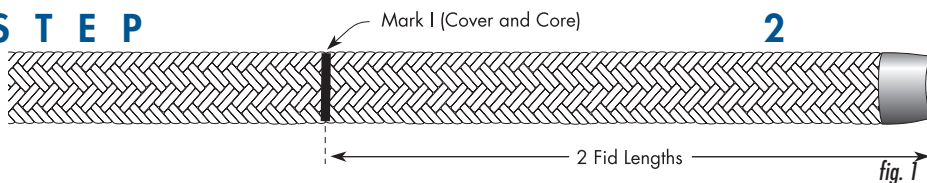
Class 2 core-dependent double braids are made in whole or part from any of the following high modulus fibers: Dyneema®, Vectran®, Technora®, and PBO®.

The following procedure is intended to preserve the strength of double braided rope constructions where the rope's core is the primary strength member.

## STEP 1

Measure 2 fid lengths back from end: Place **Mark I** on cover and on core.

## STEP 2

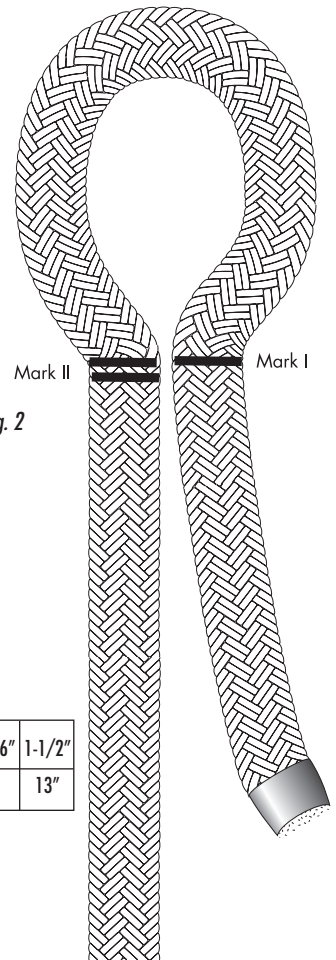


**Note:** A fid length for this purpose will be one complete length of the fid.

Measure eye size back from **Mark I** and place **Mark II** on both the cover and core, as done with **Mark I**.

When splicing on a thimble with ears, slide thimble on and position between **Mark I** and **Mark II**. Leave in place and continue with the splice.

fig. 2

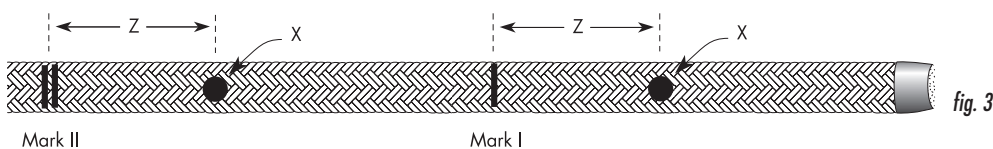


## STEP 3

Mark on cover two extraction points (X) "Z" length of a fid toward end of rope from **Mark I** and **Mark II**.

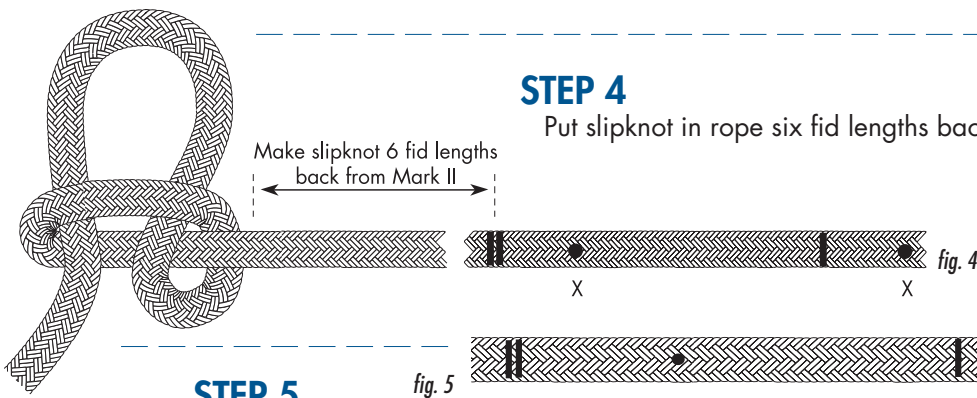
Length of Z section based on size of rope as follows:

Size (Dia.)	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	3/4"	7/8"	1"	1-1/8"	1-1/4"	1-5/16"	1-1/2"
Z Length	5"	5"	5"	5"	6"	6-3/4"	7-1/2"	8"	9"	9"	12"	12"	13"	13"



## STEP 4

Put slipknot in rope six fid lengths back from **Mark II**.



## STEP 5

Extract core at extraction point **X** nearest end of rope. Put an overhand knot in core at the point where it comes out of the cover.

fig. 5

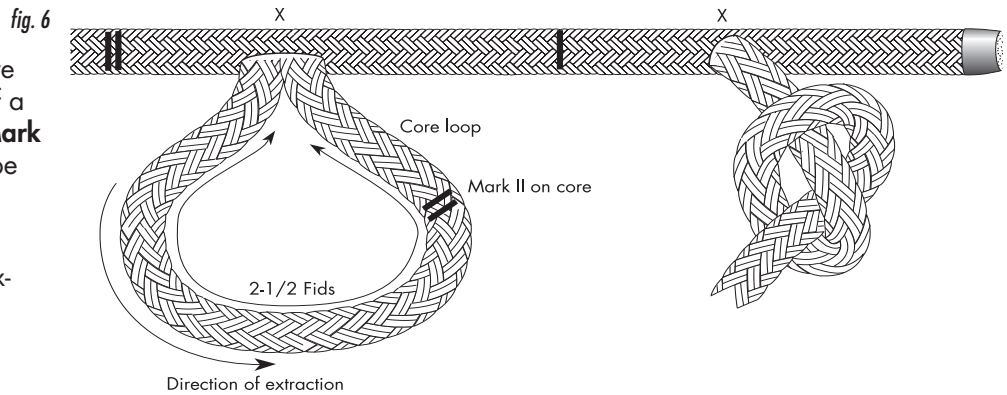




## STEP 6

Now extract core at second core extraction point **X** in the form of a loop. Expose 2-1/2 fids from **Mark II**. Extract from same side of rope as first extraction.

When using thimble with ears, move rope around thimble to expose second extraction point.

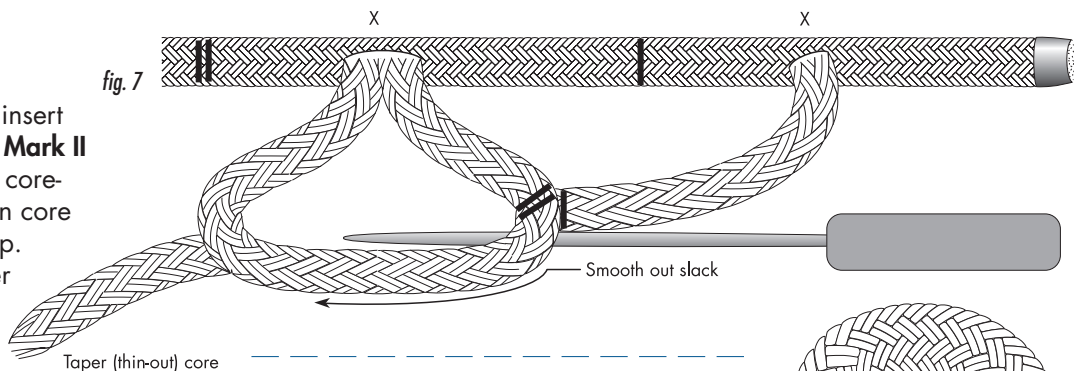


## STEP 7

Remove knot in core and insert core-tail into core loop at **Mark II** for 2-1/2 fid lengths. Pull core-tail through until **Mark I** on core meets **Mark II** on core-loop. Keep these marks together by inserting pusher through both marks.

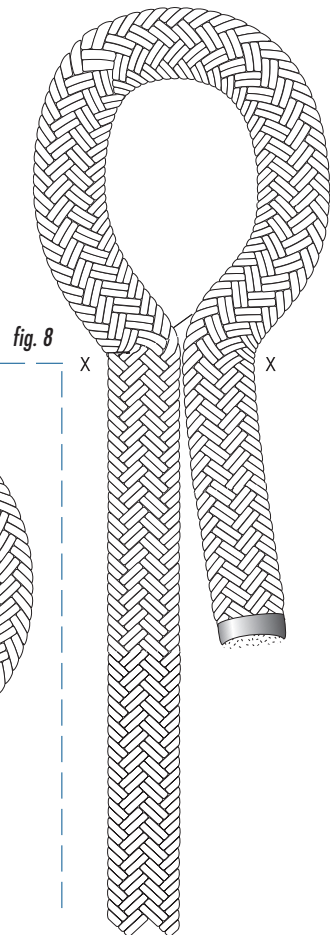
Taper end of core and smooth out slack away from **Mark II** on core-loop toward core end, which will disappear into core-loop.

Remove pusher (inserted earlier to keep **Mark I** and **Mark II** together).



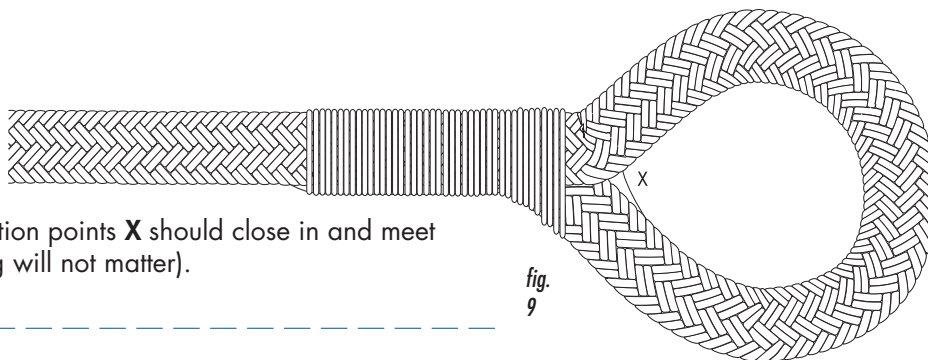
## STEP 8

Milk up cover completely away from slipknot and toward eye. This should bring cover up to **Mark I** and **Mark II** on core (a little over is acceptable).



## STEP 9

Smooth out cover slack around eye. Extraction points **X** should close in and meet (a little long will not matter).



## STEP 10

Bring cover-tail down on side of rope (minimum 2 times rope circumference in inches) and lock stitch excess cover to rope. After lock stitching, excess cover should be whipped to the neck of the rope with appropriate whipping twine.

**Splicing instructions are intended only for the use of those experienced and knowledgeable in splicing techniques. Samson cannot be held liable for the performance of splices done by non-Samson personnel.**

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# End/End Splice

## Double Braid - Class II Rope

**Z Section Chart**

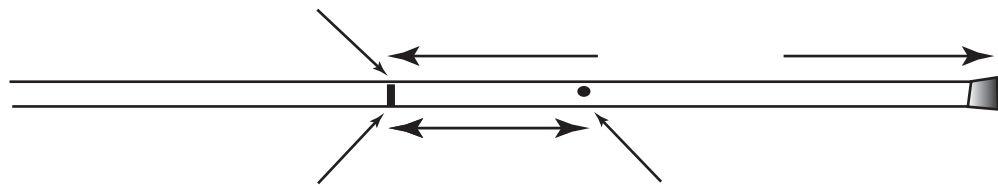
Size	1/4"	5/16"	3/8"	7/16"	1/2"	9/16"	5/8"	3/4"	7/8"	1"	1-1/8"	1-1/4"	1-5/16"	1-1/2"
Z-Length	5"	5"	5"	5"	6"	6-3/4"	7-1/2"	8"	9"	9"	12"	12"	13"	13"

### Step 1

From the end of Each rope, measure and mark as follows:

**A** - 2 Fid Lengths from end - Mark I on **Cover and Core**

**B** - From Mark I measure Z section lengths towards end of rope.

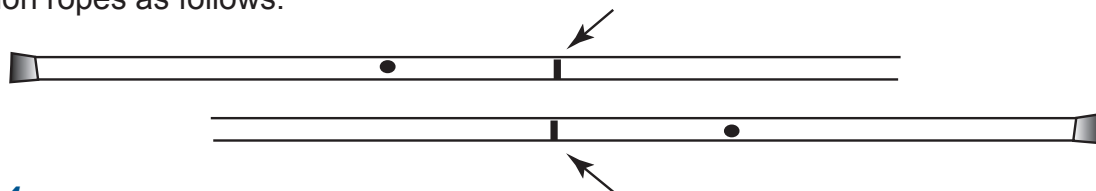


### Step 2

Measure back 6 Fid Lengths from Mark I and knot or spike each rope.

### Step 3

Position ropes as follows:



### Step 4

Re-mark Z section lengths (extraction points) so they are facing each other.

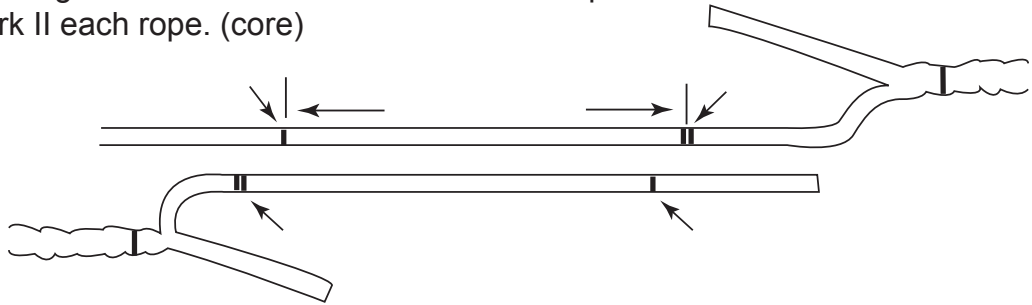
### Step 5

Extract cores at Z section marks, pull out completely from the ends of the ropes.

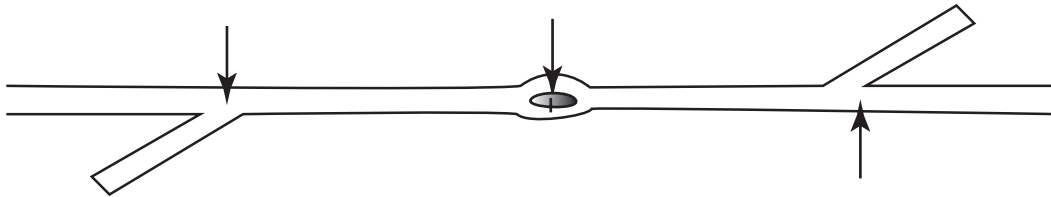
### Step 6

Slide covers back toward knots/spikes, enhance Mark I each core measure 2-1/2 Fid Lengths from core Mark I towards knots/spikes and make core Mark II each rope. (core)

### Step 7



Insert the end of each core into the opposing core at Mark I and out at Mark II. Inserting the core ends 1 pick down from Mark I on the entrance side of each core allows for a smoother crossover.



### Step 8

Perform 2-2-2-1-2 taper from end of each tail. \*Or cut the ends of tails at an angle

### Step 9

Tighten crossover by milking towards the crossover from each direction.

### Step 10

Milk away from the crossover in both directions. Tapered tails will disappear. Repeat until all slack is removed, the crossover and entire splice lengths should be smooth.

### Step 11

Milk the cover towards the crossover. Work one side at a time, hand tensioning the core splice area while working the cover up over it.

Covers should meet at or near the crossover. Should be lockstitched and whipped on each side of crossover (see eye splice instructions).

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# STRIPPING COVER FROM CORE-DEPENDENT CLASS II DOUBLE BRAIDS



*Class II core-dependent double braids are made in whole or part from any of the following high modulus fibers: Dyneema®, Vectran®, Technora®, and PBO®.*

Many high performance sailors like to strip the cover from the core to save weight aloft for halyard applications. In simple terms, you want to strip the cover from the core up to the area of the stoppers, cleats and winches. Leave the cover on the core wherever you have to cleat or winch the rope. The following is a simple, step-by-step method of stripping the cover and finishing the transition area where the cover ends and the core continues.

## Step 1

Mark a dot on the cover in the area where you want the core to be exposed.

## Step 2

Tie a knot with a loop about 5 feet back from the dot on the cover.

## Step 3

Extract the core from the cover at the dot.

## Step 4

Slide the cover back toward the knot, then milk the cover from the knot to the core to balance the cover and the core.

## Step 5

Lock-stitch the cover to the core from the dot back for about 3 complete passes.

## Step 6

From the point of the lock stitch toward the end of the cover material, measure 6 inches and mark. This will be **Mark 1** on the cover.

## Step 7

From **Mark 1** measure 6 inches and make another mark. This will be **Mark 2** on the cover. **Mark 2** should now be about 12 inches from the lock-stitch.

## Step 8

Cut off the cover at **Mark 2** and discard the rest of the cover material.

## Step 9

From the front of the lock-stitch toward the end of the exposed core, measure 15 inches and put a mark on the core. This will be **Mark A** on the core.

## Step 10

Insert a splicing fid with the cover into the core as close to the lock-stitch as possible. Continue pushing the fid through the center of the core and extract the fid and cover at **Mark A** on the core.

## Step 11

Pull the cover out of the core until **Mark 1** on the cover is exposed. Unbraid the cover from the end back to **Mark 1** on the cover. Angle-cut strands from **Mark 1** to the end of the cover to perform a taper.

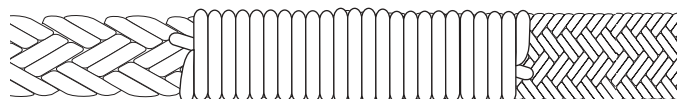
## Step 12

At the point of cover insertion into the core, milk the core down toward the end of the cover. This will cause the cover to disappear into the core.



## Step 13

Whip the area where the cover is inserted into the core, to finish.



*Splicing instructions are intended only for the use of those experienced and knowledgeable in splicing techniques. Samson cannot be held liable for the performance of splices done by non-Samson personnel.*

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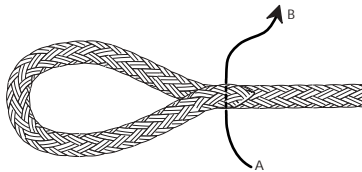
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# LOCK STITCH PROCEDURE

Material Required: Approximately 1/2 fid length of nylon or polyester whipping twine or rope approximately the same size of the strands in the rope you are stitch-locking.

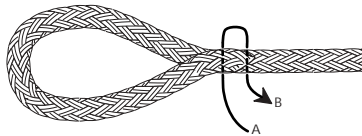
## Step 1

Pass stitching through spliced area near throat of eye as shown.



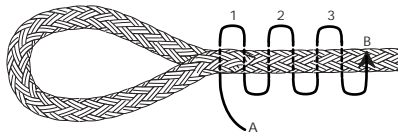
## Step 2

Reinsert as shown pulling snug but not tight.



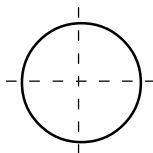
## Step 3

Continue to reinsert as shown until you have *at least 3 complete stitches*.



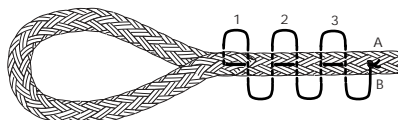
## Step 4

After completing *Step 3*, rotate spliced part of rope 90° and reinsert end **A** into spliced area in the same area and in the same fashion as in *Steps 1, 2 and 3*. The splice will now be stitched on two planes perpendicular to each other.



## Step 5

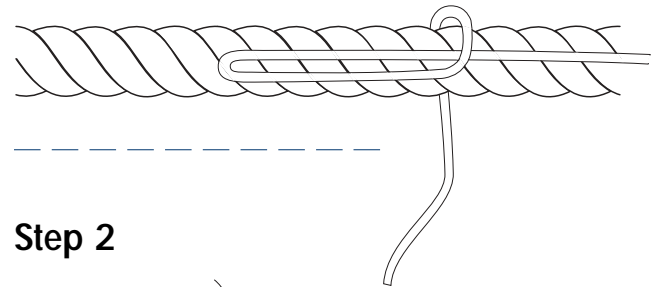
After stitching at least three complete stitches as in *Step 3*, extract both ends **A** and **B** together through the same opening in the braid. Tie them together with a square knot and reinsert back into braid.



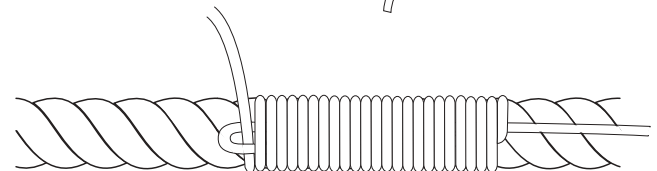
## WHIPPING FINISHED SPLICE

Whip or seize the end of the spliced area with whipping twine for extra security and a professional touch.

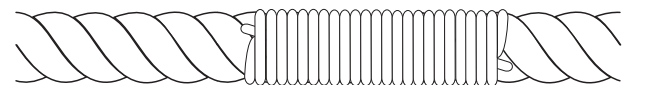
## Step 1



## Step 2



## Step 3



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# SAMSON ROPE TECHNOLOGIES

## Special Tips for Splicing

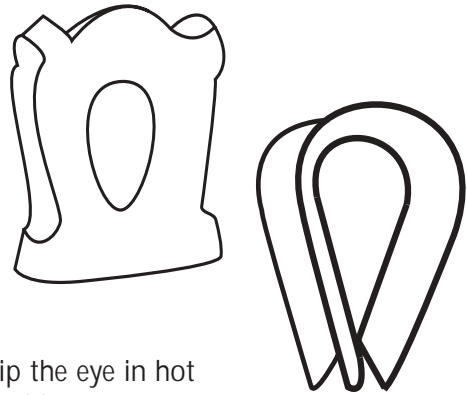
### SPLICE WITH THIMBLE

Follow Step 1 of the Class 1 Double Braid Eye Splice for determining the correct eye size. When burying exposed core, as in Step 9, bury to crossover, then insert thimble into eye before milking cover all the way. If using a thimble with ears, before inserting cover into core, as in Step 5, insert core through the rings (dog ears) and slide thimble beyond Mark 3.

Then proceed to make the splice according to instructions.

**Note:** Before final burying, slide thimble around to cover side of eye.

To secure finished eye tightly around thimble, either whip throat or dip the eye in hot water for several minutes. Hot water will shrink eye tightly around thimble.



### MINIMUM LENGTHS

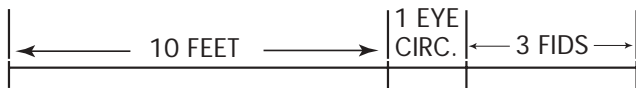
**Minimum Eye and Eye Sling** length with 2-in-1 Braid is 5 fid lengths from extraction Mark X to extraction Mark X, regardless of rope diameter. The size of eye does not affect the minimum length. Proceed to make the eye splice as per instructions.

**Exact Overall Lengths** with eye splices are determined by allowing for extra rope consumed in making the splices. For each splice the length of extra rope is equal to 1-1/2 fid lengths plus 1/2 the circumference of the eye.

Example: To make an Eye and Eye Sling 10' overall with two 6" eyes:



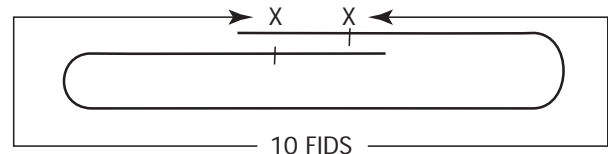
Measure and cut a length:



Then start with step #1 of class 1 double braid splice or step #1 of class 1 twelve-strand splice.

### END-FOR-END SPLICE

**Minimum Endless Loop (Grommet)** with 2-in-1 Braid is 10 fid lengths between extraction Mark X to extraction Mark X, regardless of rope diameter. Proceed with the Class 1 Double Braid End-for-End splicing instructions.



**Exact Overall Lengths** with endless loops are determined by allowing for extra rope consumed in making the End-for-End Splice. The length of extra rope is equal to 4 fid lengths.

Example: To make an endless loop 10 foot overall:



Measure and cut a length:



Then start with Step 1 of the *Class 1 Double Braid End-for-End* splicing instruction or Step 1 of the *Class 1 12-Strand End-for-End* splicing instruction.

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## FID LENGTH DEFINITION

The "fid length" for a rope is calculated as 21 times the rope diameter. As the rope diameter increases, so does the fid length. For example the fid length for a 4" diameter rope is 84".

The length of the splicing tool called a "fid" may or may not have a 1:1 correlation with the fid length for a given rope diameter. Refer to the example above and imagine trying to splice a 4" diameter rope with an 84" fid! To keep fids to a manageable length, they may be scaled to the actual fid length of a given rope diameter. Our Tubular Fids are 100% scale, meaning that the overall length of the tool is equal to the actual fid length for the corresponding rope diameter. Our wire fids are 1/2 scale meaning that the length of the tool is 1/2 the actual fid length for the corresponding rope diameter.

### Calculating fid short section

1/4" - 1/2" short section is 37.5% of fid length

9/16" - 3/4" short section is 30% of fid length

7/8" - up short section is 25% of fid length

## ALUMINUM TUBULAR FIDS

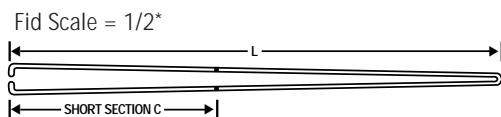
A different sized Splicing Fid is required for each size of rope.



Fid Size = Rope Dia. Inches	Total Fid Length Inches	Short Fid Section Inches
1/4"	5-1/2"	2-1/16"
5/16"	6-3/4"	2-1/2"
3/8"	7-3/4"	2-7/8"
7/16"	9-1/2"	3-9/16"
1/2"	11"	4-1/8"
9/16"	12-1/4"	3-5/8"
5/8"	14"	4-1/8"
3/4"	16"	4-3/4"
7/8"	19"	4-3/4"
1"	21"	5-1/4"

## WIRE FIDS

For rope sizes above 3" Circ. (1" dia.) - Use wire fid. Fid scale: 1/2 (for rope diameters between 1-1/16" and 2").



\* Wire fids are used for 3" circumference and larger ropes. In order to keep the fid length to a manageable size, the overall length is scaled down. Fids from 3" circumference to 6" circumference are 1/2 scale.

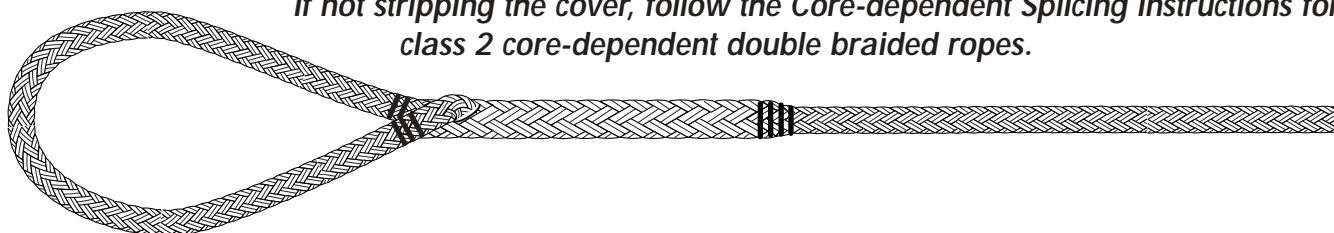
Fid Size = Rope Circ. (Inches)	Total Fid Length "L" (Inches)	Short Section "C" (Inches)
3"	10-1/2"	2-5/8"
3-1/2"	12-1/4"	3"
3-3/4"	13-1/4"	3-1/4"
4"	14"	3-1/2"
4-1/2"	16"	4"
5"	17-1/2"	4-1/2"
5-1/2"	19"	4-3/4"
6"	21"	5-1/4"

# Splicing Core End Only of Class 2 Core-Dependent Double Braid (where cover has been stripped)

Class 2 core-dependent double braids are made in whole or part from any of the following high modulus fibers: Dyneema®, Vectran®, Technora®, and PBO®.

For use on all high modulus fiber double braids where part of the rope's cover is stripped. This practice is common in competitive sailing in order to save weight aloft while preserving parts of the rope's cover for grip in stoppers and cleats. To splice the core end only, follow the instructions below.

*If not stripping the cover, follow the Core-dependent Splicing Instructions for class 2 core-dependent double braided ropes.*

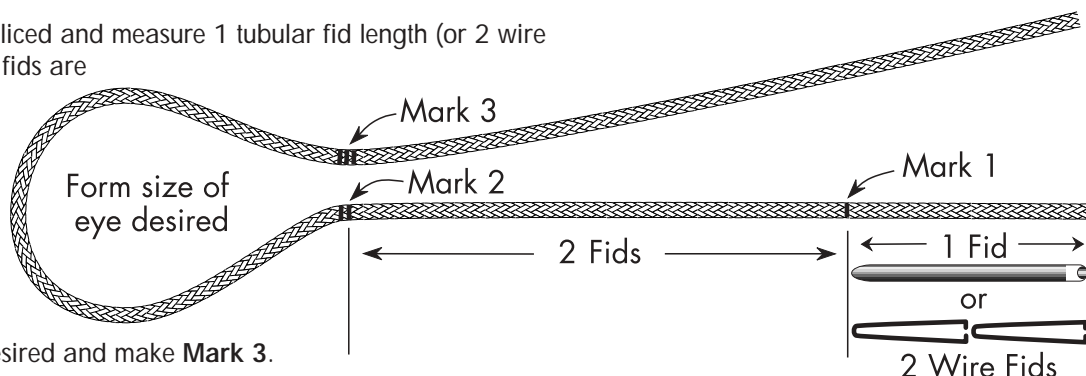


## Step 1

Tape end of line to be spliced and measure 1 tubular fid length (or 2 wire fid lengths because wire fids are half the length of tubular fids) from taped end of line and make **Mark 1**.

From **Mark 1** measure 2 tubular fid lengths (or 4 wire fid lengths) and make **Mark 2**.

Now form size of eye desired and make **Mark 3**.

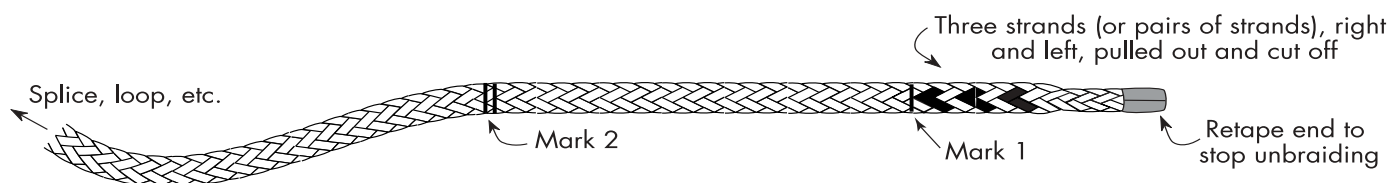


## Step 2

From **Mark 1**, in the direction of the taped end of the line, mark every second right and left strand\* for three strands on a 12-Strand core and two strands on an 8-Strand core.

Cut every marked strand and pull out of line (tape at end can cause resistance and may have to be removed in order to pull out cut strands).

Tapered end will now have only 6 (4 for 8-strand cores) strands remaining. Tape tapered tail tightly to keep from unbraiding.

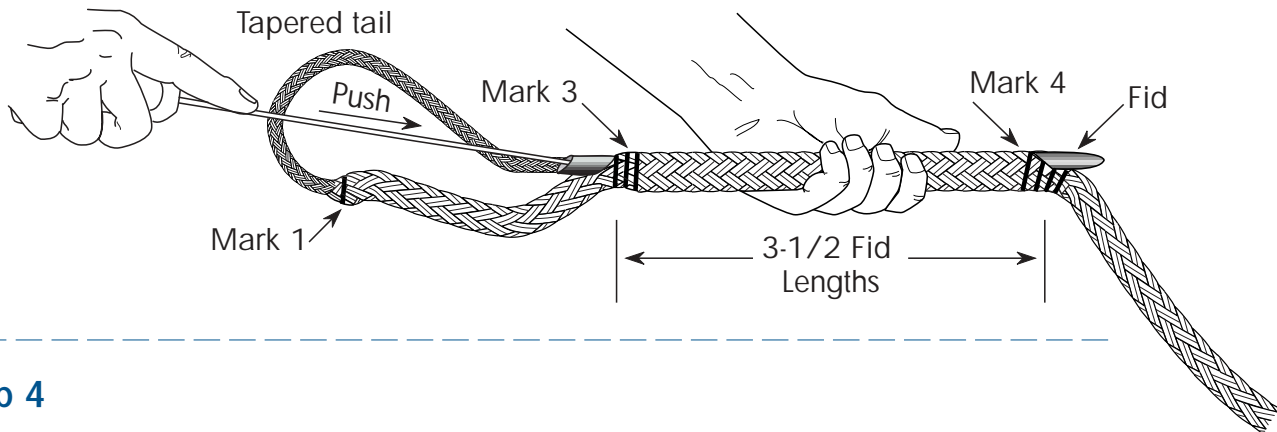


\*Larger rope diameters may have pairs of strands in right and left direction. In this case, treat the pairs of strands as a single strand, marking and cutting both in each direction as described above.

### Step 3

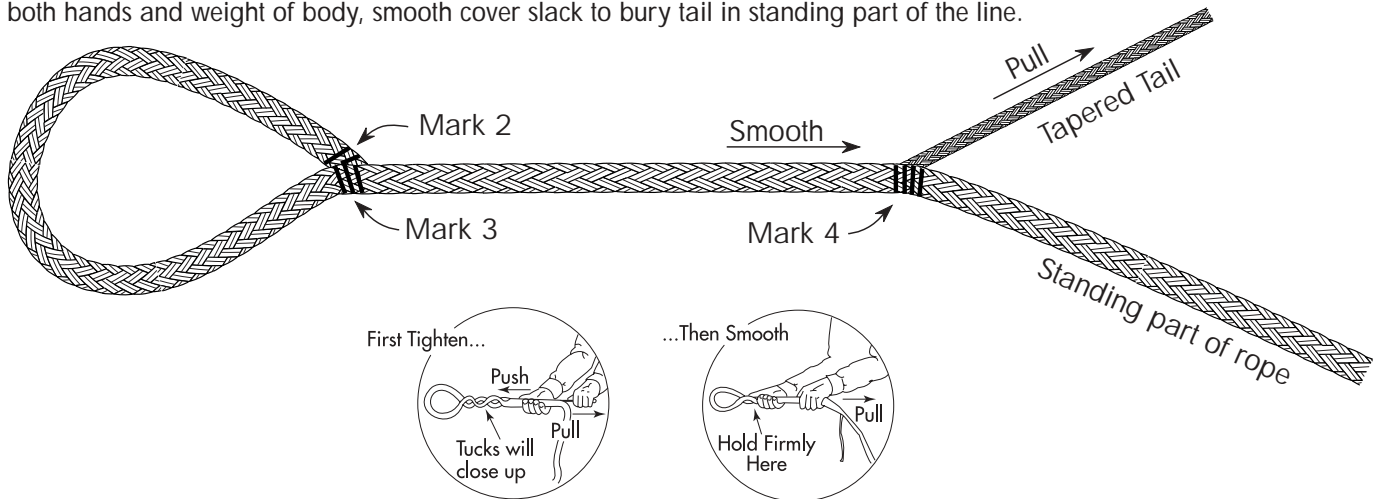
Measure 3-1/2 tubular fid lengths

(7 wire fid lengths), make **Mark 4**. Insert fid and tapered tail at **Mark 3** and bring fid out at **Mark 4**. Pull fid and tapered tail out. Don't let the line twist.



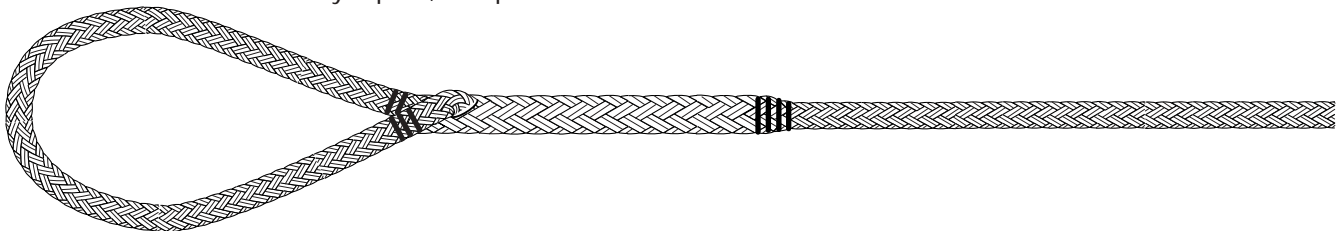
### Step 4

Remove fid. Pull hard on tapered tail with one hand. With other hand, smooth bunched line towards eye splice until marks 2 and 3 converge. Now, smooth the cover away from eye towards mark 4. Mark the tapered tail where it emerges at mark 4. Pull tail out several inches, cut tail off at an angle, so the angle cut ends at this mark. Then with both hands and weight of body, smooth cover slack to bury tail in standing part of the line.



### Step 5

When finished, **Mark 2** and **Mark 3** should be at the same point in the vertex of the eye—which, yields eye size desired. To finish eye splice, the splice must be lock-stitched.



Splicing instructions are intended only for the use of those experienced and knowledgeable in splicing techniques. Samson cannot be held liable for the performance of splices done by non-Samson personnel.

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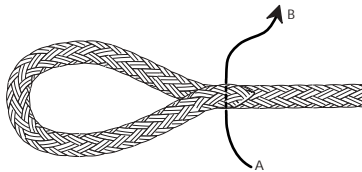
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# LOCK STITCH PROCEDURE

Material Required: Approximately 1/2 fid length of nylon or polyester whipping twine or rope approximately the same size of the strands in the rope you are stitch-locking.

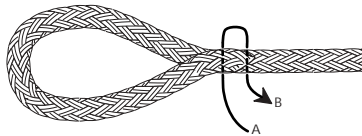
## Step 1

Pass stitching through spliced area near throat of eye as shown.



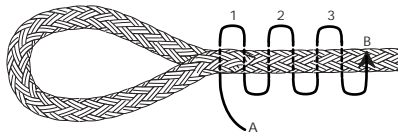
## Step 2

Reinsert as shown pulling snug but not tight.



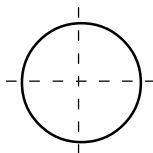
## Step 3

Continue to reinsert as shown until you have *at least 3 complete stitches*.



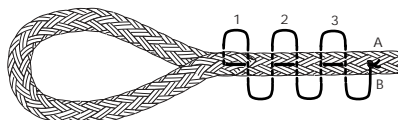
## Step 4

After completing Step 3, rotate spliced part of rope 90° and reinsert end **A** into spliced area in the same area and in the same fashion as in Steps 1, 2 and 3. The splice will now be stitched on two planes perpendicular to each other.



## Step 5

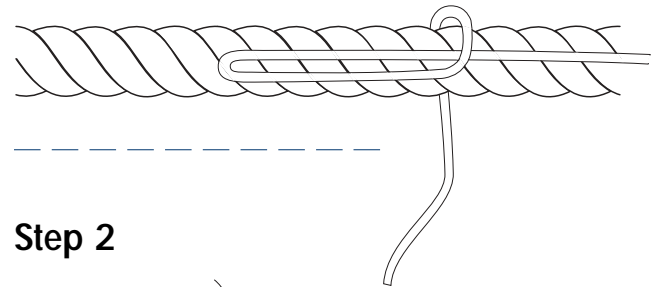
After stitching at least three complete stitches as in Step 3, extract both ends **A** and **B** together through the same opening in the braid. Tie them together with a square knot and reinsert back into braid.



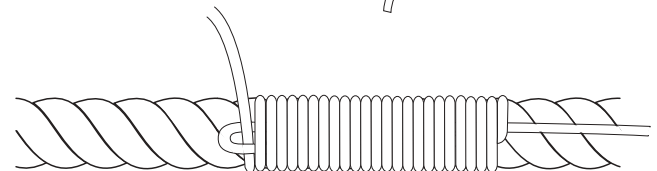
## WHIPPING FINISHED SPLICE

Whip or seize the end of the spliced area with whipping twine for extra security and a professional touch.

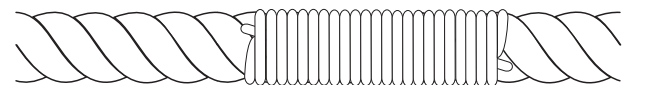
## Step 1



## Step 2



## Step 3



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# SAMSON ROPE TECHNOLOGIES

## Special Tips for Splicing

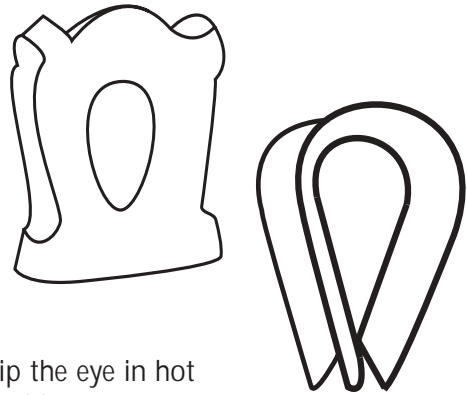
### SPLICE WITH THIMBLE

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Then proceed to make the splice according to instructions.

**Note:** Before final burying, slide thimble around to cover side of eye.

To secure finished eye tightly around thimble, either whip throat or dip the eye in hot water for several minutes. Hot water will shrink eye tightly around thimble.



### MINIMUM LENGTHS

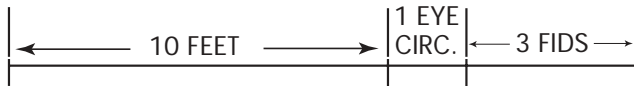
**Minimum Eye and Eye Sling** length with 2-in-1 Braid is 5 fid lengths from extraction Mark X to extraction Mark X, regardless of rope diameter. The size of eye does not affect the minimum length. Proceed to make the eye splice as per instructions.

**Exact Overall Lengths** with eye splices are determined by allowing for extra rope consumed in making the splices. For each splice the length of extra rope is equal to 1-1/2 fid lengths plus 1/2 the circumference of the eye.

Example: To make an Eye and Eye Sling 10' overall with two 6" eyes:



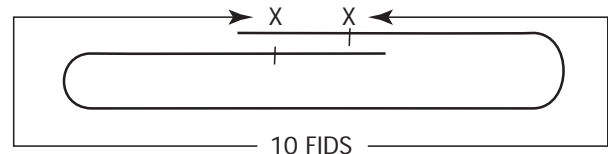
Measure and cut a length:



Then start with step #1 of class 1 double braid splice or step #1 of class 1 twelve-strand splice.

### END-FOR-END SPLICE

**Minimum Endless Loop (Grommet)** with 2-in-1 Braid is 10 fid lengths between extraction Mark X to extraction Mark X, regardless of rope diameter. Proceed with the Class 1 Double Braid End-for-End splicing instructions.



**Exact Overall Lengths** with endless loops are determined by allowing for extra rope consumed in making the End-for-End Splice. The length of extra rope is equal to 4 fid lengths.

Example: To make an endless loop 10 foot overall:



Measure and cut a length:



Then start with Step 1 of the *Class 1 Double Braid End-for-End* splicing instruction or Step 1 of the *Class 1 12-Strand End-for-End* splicing instruction.

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## FID LENGTH DEFINITION

The "fid length" for a rope is calculated as 21 times the rope diameter. As the rope diameter increases, so does the fid length. For example the fid length for a 4" diameter rope is 84".

The length of the splicing tool called a "fid" may or may not have a 1:1 correlation with the fid length for a given rope diameter. Refer to the example above and imagine trying to splice a 4" diameter rope with an 84" fid! To keep fids to a manageable length, they may be scaled to the actual fid length of a given rope diameter. Our Tubular Fids are 100% scale, meaning that the overall length of the tool is equal to the actual fid length for the corresponding rope diameter. Our wire fids are 1/2 scale meaning that the length of the tool is 1/2 the actual fid length for the corresponding rope diameter.

### Calculating fid short section

1/4" - 1/2" short section is 37.5% of fid length

9/16" - 3/4" short section is 30% of fid length

7/8" - up short section is 25% of fid length

## ALUMINUM TUBULAR FIDS

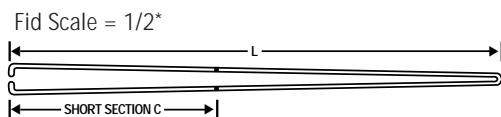
A different sized Splicing Fid is required for each size of rope.



Fid Size = Rope Dia. Inches	Total Fid Length Inches	Short Fid Section Inches
1/4"	5-1/2"	2-1/16"
5/16"	6-3/4"	2-1/2"
3/8"	7-3/4"	2-7/8"
7/16"	9-1/2"	3-9/16"
1/2"	11"	4-1/8"
9/16"	12-1/4"	3-5/8"
5/8"	14"	4-1/8"
3/4"	16"	4-3/4"
7/8"	19"	4-3/4"
1"	21"	5-1/4"

## WIRE FIDS

For rope sizes above 3" Circ. (1" dia.) - Use wire fid. Fid scale: 1/2 (for rope diameters between 1-1/16" and 2").



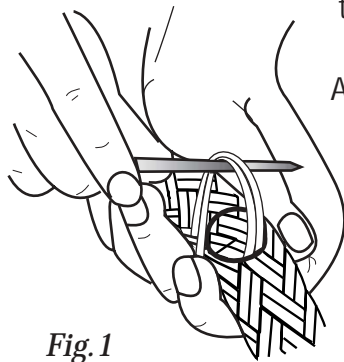
\* Wire fids are used for 3" circumference and larger ropes. In order to keep the fid length to a manageable size, the overall length is scaled down. Fids from 3" circumference to 6" circumference are 1/2 scale.

Fid Size = Rope Circ. (Inches)	Total Fid Length "L" (Inches)	Short Section "C" (Inches)
3"	10-1/2"	2-5/8"
3-1/2"	12-1/4"	3"
3-3/4"	13-1/4"	3-1/4"
4"	14"	3-1/2"
4-1/2"	16"	4"
5"	17-1/2"	4-1/2"
5-1/2"	19"	4-3/4"
6"	21"	5-1/4"

# Special Tips for Splicing Used Rope

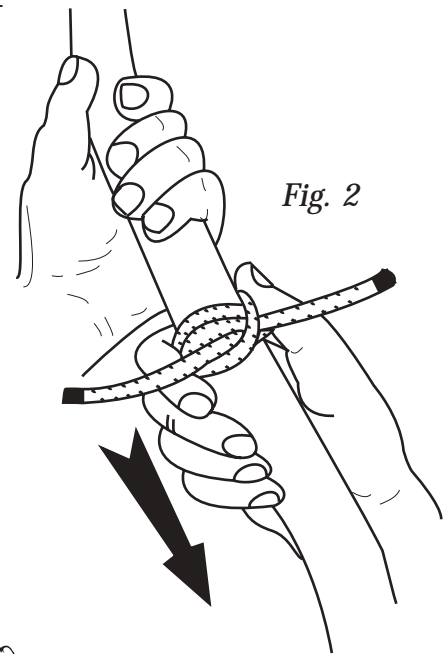
Splicing used rope can be made easier by first understanding the rope condition. Natural shrinkage has occurred caused by water and heat. In addition, the cover yarns have often been abraided. Therefore, by using the technique outlined in the Used Rope Eye Splice for Class 1 Double Braids, along with the following tips, you can splice used Braided Rope more easily and with better results.

Soak the section of rope to be spliced in water for several minutes - this lubricates and loosens fibers.



*Fig. 1*

After marking cover (as shown in Step #2 of the splicing instruction) untape end of rope, grasp end of core, and slide back cover pulling out core. This loosens and bunches up cover strands in the area of Point X and makes it easier to open up cover strands for extraction. Also, carefully loosen 3-4 strand pairs at X to assure a large and flexible hole for extraction. (See Fig.1).



*Fig. 2*

## **Final Burying:**

The use of shock cord in a rolling hitch around the cover is useful to make final burying easier and more complete. Pull on the hitch toward the eye until all cover slack is removed. (See Fig. 2)



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# Additional Rope Needed for Samson Class 1 Splices

## SOFT EYE SPLICE

Circumference of rope in inches expressed as feet, (allows for rope in buried section), plus length of the Eye Splice.

## EXAMPLE

Extra rope needed for a 6 ft. soft eye in a 10" circumference 2-in-1 Braid would be 16 ft. (10' + 6').

## THIMBLE EYE SPLICE

Circumference of rope in inches expressed as feet, (allows for rope in buried section), plus 1/2 the circumference of the rope in feet, (allows for rope around thimbles).

## EXAMPLE

Extra rope needed for a Thimble Eye Splice in 15" circumference 2-in-1 Braid would be 22 ft. (15' plus 7-1/2').

## END-FOR-END SPLICE

Circumference of rope in inches expressed as in feet times 2.

## EXAMPLE

End-for-End Splice in 8" circumference 2-in-1 Braid figure on 16 ft. extra for the buried sections of the crossover.



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