

Essex and Suffolk Gliding Club

Dyneema Cable Splicing Instructions

With acknowledgments to Cosalt International Limited for the photographs.

1. Joining a Broken Cable

- 1.1. Check the cable either side of the break and cut away any cable close to the break (up to 10 metres either side) that shows signs of damage or has previous joins in it.
- 1.2. Loosen up the cable for a distance of at least 1 metre from each cut end. This can best be done by looping it through the wire mesh on the side of the winch and pulling it to and fro a few times under tension.
- 1.3. Check that you have the necessary tools. See Photo 1.



Photo 1.



Photo 2.

You will also need some wing/insulating tape. A sharp knife can be used instead of the scissors.

- 1.4. On each piece of the cable mark at approximately 100 mm (4 inches) from the cut end and a further five points at about 35 mm (1 ½ inch) intervals. See Photo 2.
- 1.5. Start at the point furthest from the end and pluck out one strand at each mark. Cut off each plucked strand close to the cable. Do this to both pieces of the cable.
- 1.6. Mark at 500 mm (19 inches) from the cut end of each piece of cable. See Photo 3. Also mark at 1 metre from the cut end of each piece of cable.



Photo 3.

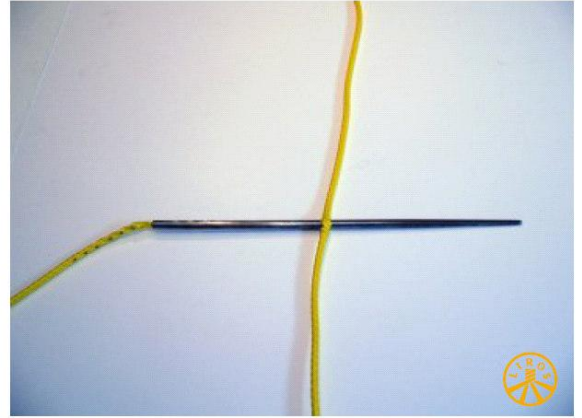


Photo 4.

1.7. Fit one end of cable to the fid. Make sure the end is snugly fitted into the hinged end of the fid. Close the hinge and bind it with adhesive tape. Make sure the tape is fitted smoothly (without wrinkles) and continue until it has just run on to the cable beyond the fid. Do not use too much tape. If it is too thick it will hamper the next stages.

1.8. Push the fid, attached to the end of one piece of cable, through the other piece of cable at the 500 mm mark. Make sure you go between the strands and roughly centrally. Do not pierce the strands. See Photo 4.

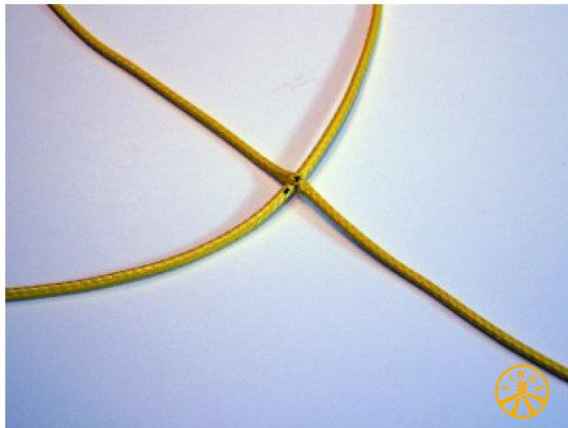


Photo 5.

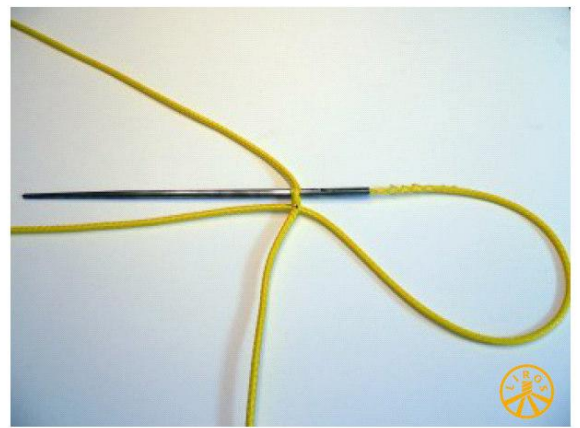


Photo 6. (NB. Fid should be at 45°)

1.9. Pull the cable through until the two 500 mm marks meet. See Photo 5.

1.10. When you open up the cable by pushing it along its axis you will see little holes where the strands open up. Skip two holes from the exit point where the fid came out and push the fid into the third hole at an angle of about 45°. This means it should come out at the fourth hole on the underside.

1.11. Repeat this once more another three holes from the previous exit point.

1.12. Starting a further three holes mm along the cable feed the fid into the centre of the cable and work the cable over the fid until the tip of the fid is beyond the 1

metre mark. Make sure that the tip of the fid stays central in the cable and does not poke out the side at any point. The cable should “concertina” up so that the 1 metre mark can be reached with all the cable packed on the fid. See Photo 7.

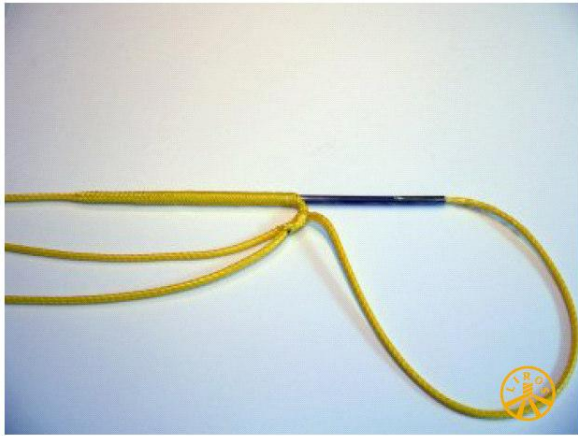


Photo 7.

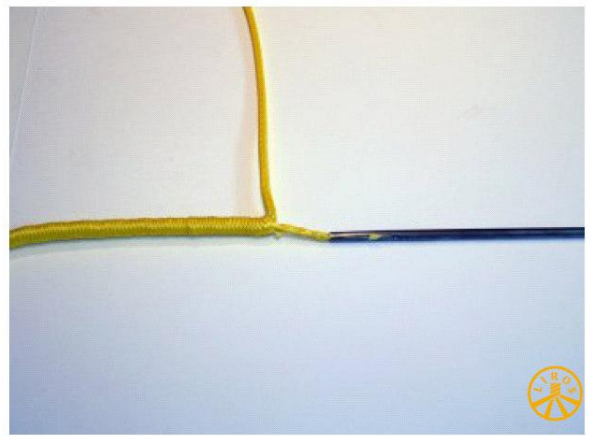


Photo 8.

1.13. Once comfortably past the 1 metre mark bring the fid out through the side of the cable and pull clear. See Photo 8. Remove the adhesive tape and detach the fid. Now pull the outer cable along so that the tapered tip of the other cable disappears inside.

1.14. Repeat stages 1.7 and 1.10 to 1.13 on the other cut end of cable.

1.15. Pull the cable out straight and smooth it out so that the splice lays flat. See Photo 9.



Photo 9.

1.16. The splice is now finished.

2. Forming an Eye on the End of the Cable.



Photo 1.



Photo 2.

- 2.1. Loosen up the cable for a distance of at least 1 metre from the end. This can best be done by looping it through the wire mesh on the side of the winch and pulling it to and fro a few times under tension.
- 2.2. Check that you have the necessary tools. See Photo 1. You will also need some wing/insulating tape. A sharp knife can be used instead of the scissors.
- 2.3. Mark at approximately 100 mm (4 inches) from the cut end and a further five points at about 35 mm (1 ½ inch) intervals. See Photo 2.
- 2.4. Start at the point furthest from the end and pluck out one strand at each mark. Cut off each plucked strand close to the cable.
- 2.5. Mark at a distance of 500 mm (19 inches) from the cut end of the cable. Also mark at a distance from the first mark sufficient to form the eye of the required size and again a further 500 mm along the cable.
- 2.6. Fit the end of cable to the fid. Make sure the end is snugly fitted into the hinged end of the fid. Close the hinge and bind it with adhesive tape. Make sure the tape is fitted smoothly (without wrinkles) and continue until it has just run on to the cable beyond the fid. Do not use too much tape. If it is too thick it will hamper the next stages.
- 2.7. Push the fid, attached to the end of one piece of cable, through the other piece of cable at the second (500 mm plus eye) mark. Make sure you go between the strands and roughly centrally. Do not pierce the strands. See Photo 3.

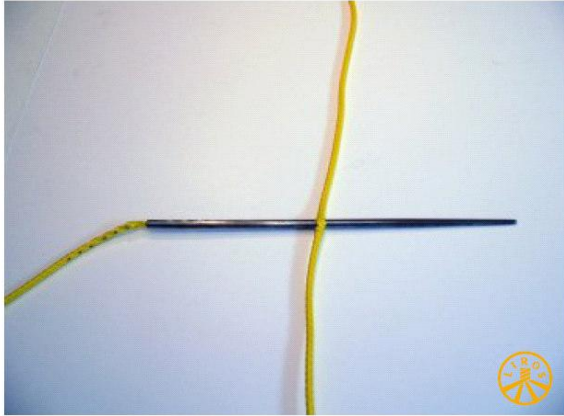


Photo 3.

2.8. Pull the cable through until the 500 mm mark comes to the point of intersection.
Photo 4.

2.9. When you open up the cable by pushing it along its axis you will see little holes where the strands open up. Skip two holes from the exit point where the fid came out and push the fid into the third hole at an angle of about 45° . This means it should come out at the fourth hole on the underside. Photo 5.

2.10. Repeat this once more another three holes from the previous exit point.

2.11. Starting a further three holes mm along the cable feed the fid into the centre of the cable and work the cable over the fid until the tip of the fid is beyond the final, 1 metre (plus eye) mark. Make sure that the tip of the fid stays central in the cable and does not poke out the side at any point. The cable should “concertina” up so that the final mark can be reached with all the cable packed on the fid. See Photo 6.

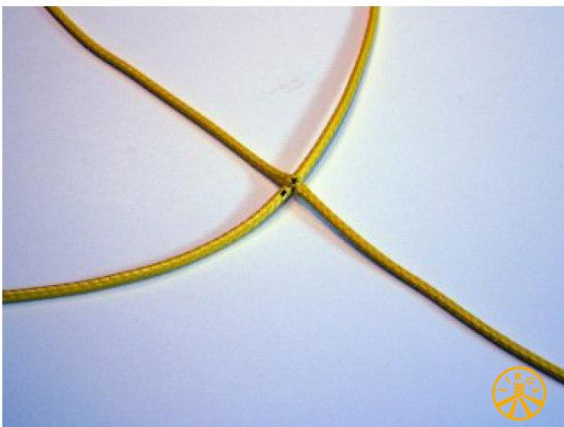


Photo 4. (NB. The loop is not shown here)

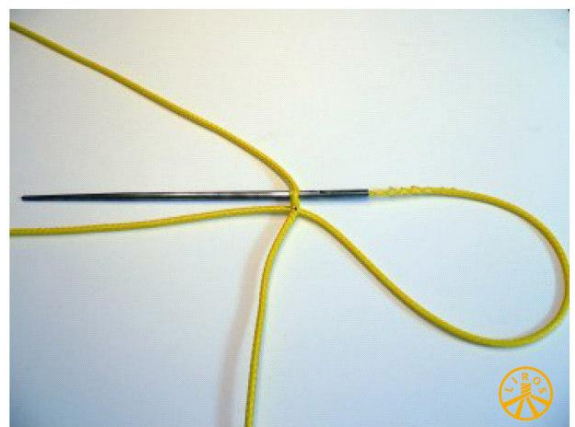


Photo 5. (NB. Fid should be at 45°)

2.12. Once comfortably past the final mark bring the fid out through the side of the cable and pull clear. See Photo 7. Remove the adhesive tape and detach the fid.

DO NOT LOSE THE END OF THE CABLE! You may need to pull more cable through at the next stage.

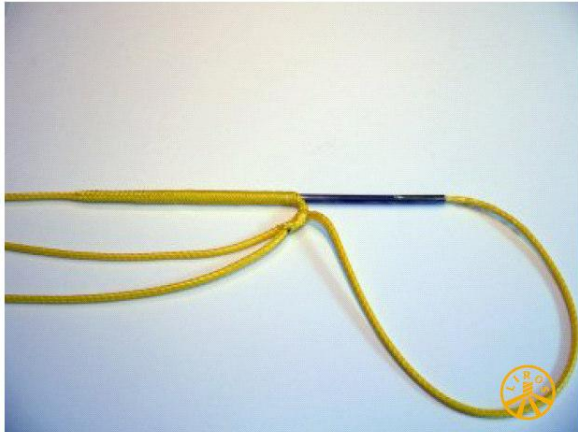


Photo 6.

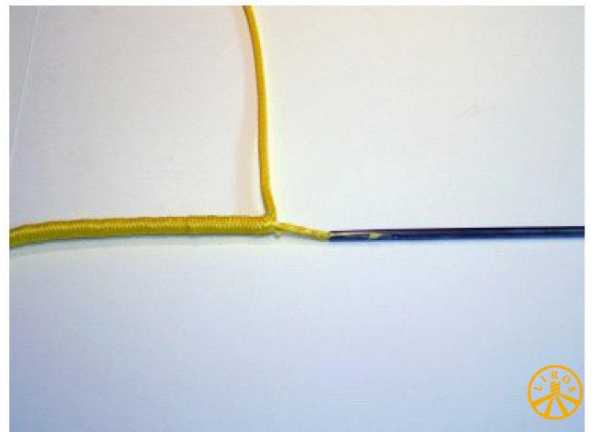


Photo 7.

- 2.13. Adjust the size of the eye by easing the cable through the splice and fit a "Thimble" if required, pulling the cable tight around the thimble.
- 2.14. Now pull the outer cable along so that the tapered tip of the cable disappears inside.
- 2.15. Pull the cable out straight and smooth it out so that the splice lays flat.
- 2.16. The splice is now finished.