

Constructing Transmitter Harnesses for the Eastern Woodcock Migratory Research Collaborative (EWMRC)

Created by

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Before you begin, you will need

- Stretch Magic Jewelry String
- Tygon Medical Tubing (1/16 inch internal diameter)
- 2 x 2 mm metal crimps
- Super glue
- Mineral Oil
- Scissors
- Ruler (metric)
- Needle nose pliers

I. Constructing Transmitter Harness

1. Cut 2 pieces of Stretch Magic Jewelry String. 1 piece will be ~10 cm long and the other will be a full arm length, measured from the center of your chest.



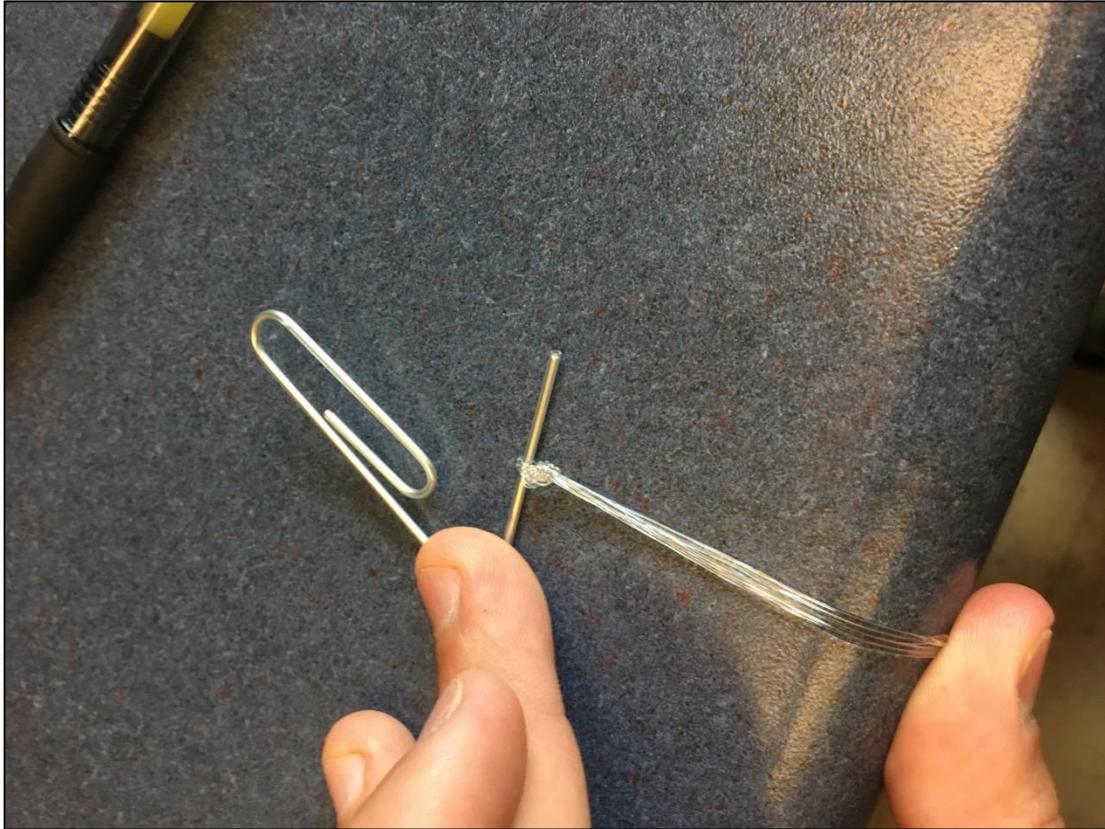
2. Find the midpoint of both pieces by folding jewelry cord in half.



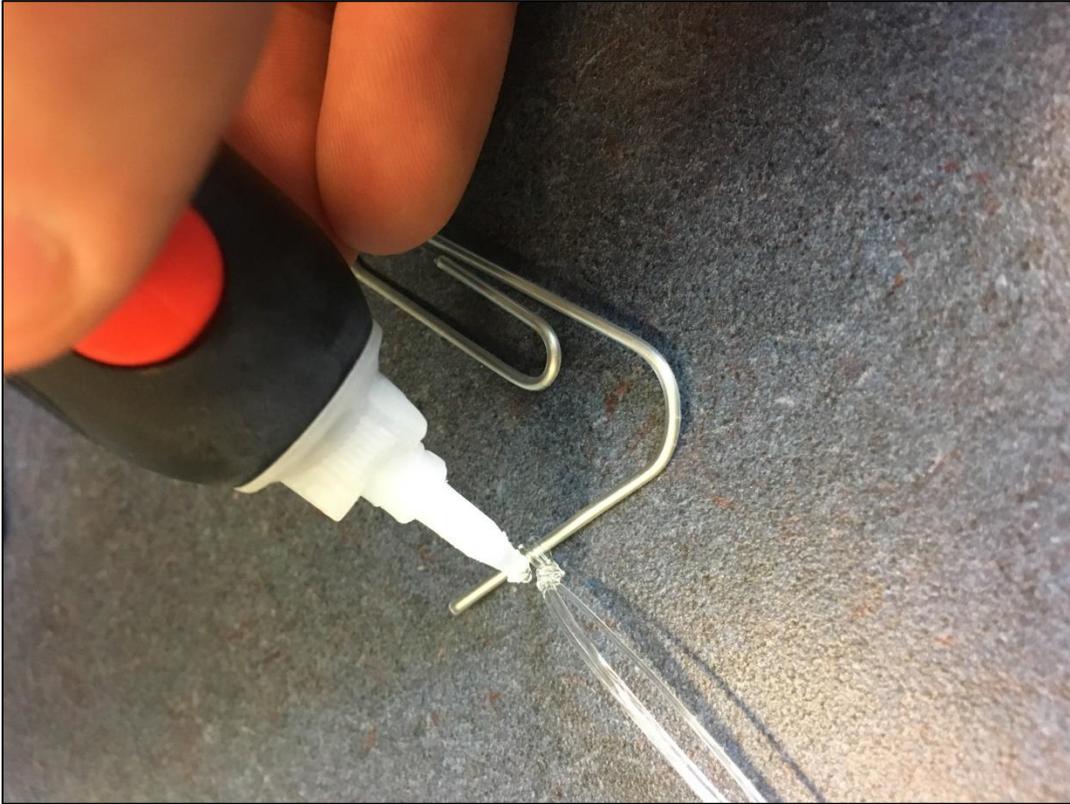
3. Tie an overhand knot using both cord lengths.



4. Pull the Stretch Magic cord tight. After the knot is tight, I recommend pulling each of the 4 strands individually for maximum knot strength. A paperclip works well to keep the knot and loops the correct size. The loops should be just large enough for 2 jewelry cord strand to fit through, yet small enough the 2 mm metal crimp will not slip through.



5. Super glue the knot to ensure it does loosen, usually causing your loops to enlarge.



6. Cut off the remaining 2 short strands.



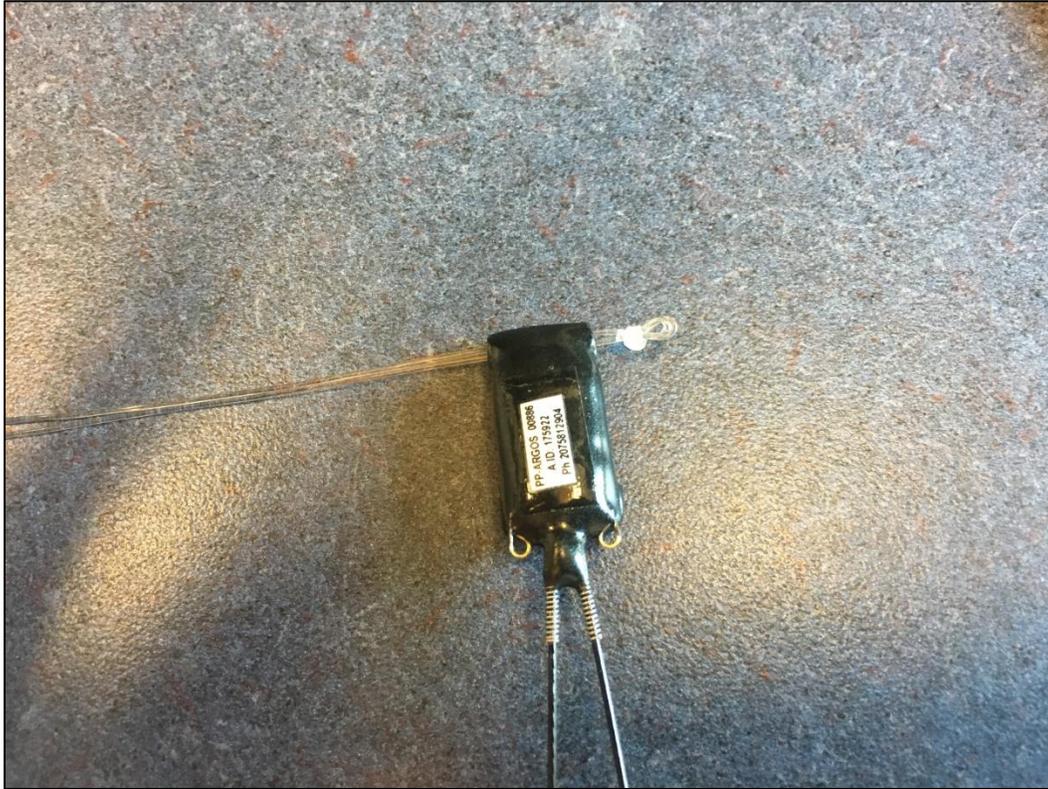
7. Cut two pieces of Tygon medical tubing to 5 cm for 4 gram units and 6 cm for 6.3 gram units. The average male woodcock (4 g unit) weighs ~ 130-150 g and the average female woodcock (6.3 g tag) weighs ~ 180-210 g.



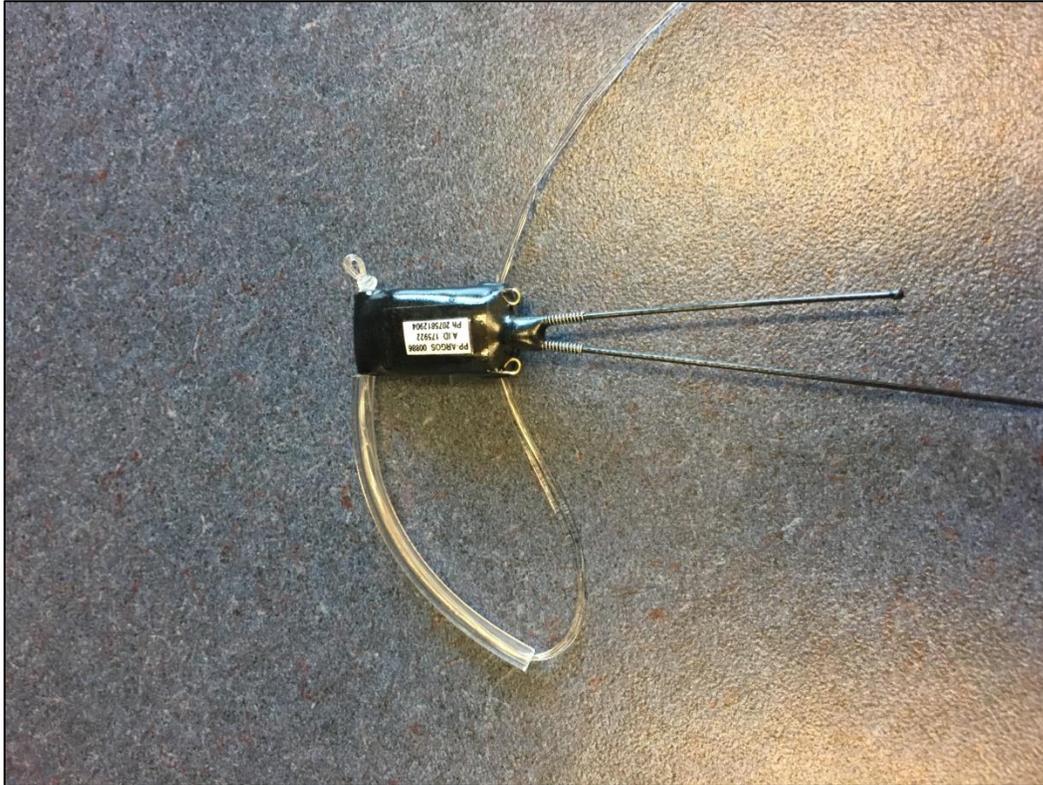
8. Apply 1 drop of mineral oil to each section of medical tubing.



9. Insert the 2 running ends of the cords through the front (i.e. non-antenna) transmitter tube. The knot should be situated flush to the tube when pulled tight.



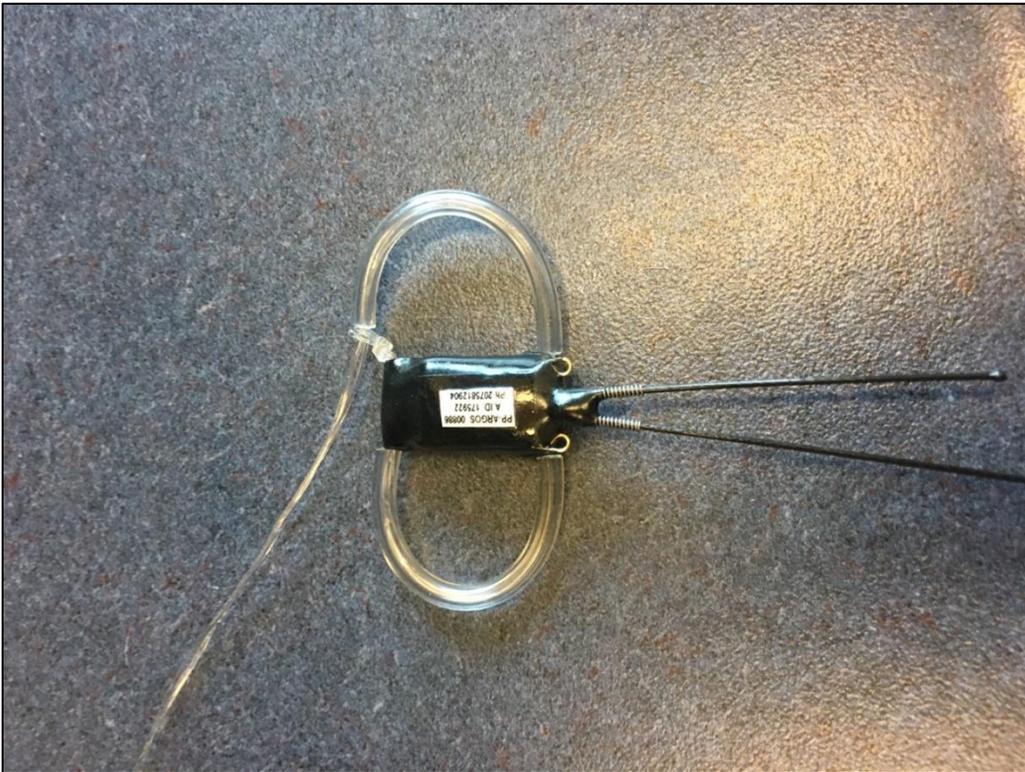
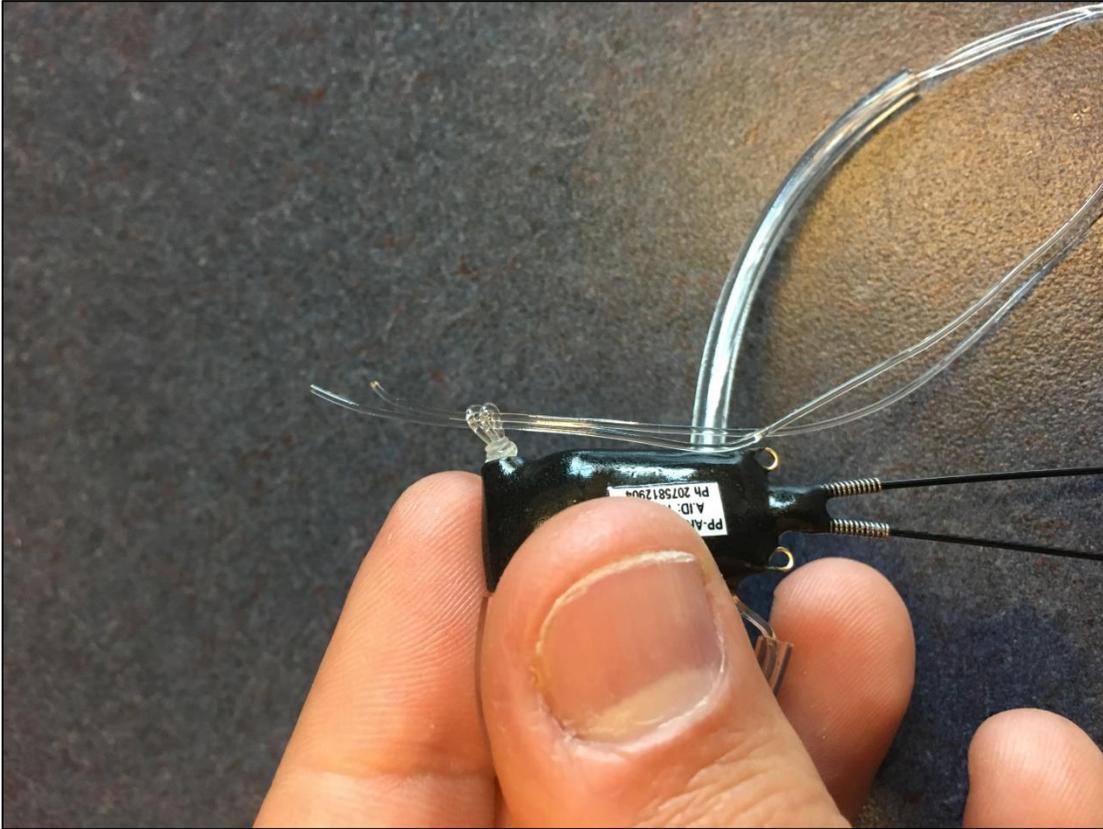
10. Insert the running ends of the cords through 1 section of Tygon medical tubing, starting on the end of the tube with the mineral oil bead. Next insert the running ends of the cords through the back (i.e. antenna) transmitter tube and pull the remaining loose cord through the tube.



11. Insert the running ends of the cord through the second section of Tygon medical tubing, starting on the end of the tube with the mineral oil bead.



12. Insert the running ends of the cords through the two cord loops next to the knot.



13. Slide two metal crimps onto the running ends of the cord. Note: If you use the pliers to turn the circular metal crimps into a slight oval shape, it will be easier to fit and slide the cord through the crimps.



14. Tie two overhand knots near the running ends of the cords. This will ensure the metal crimps do not slide off of the cords while fitting the transmitter on the bird.
15. The final transmitter should look like the photograph below. Remember to re-apply mineral oil to the Tygon medical tubing just prior to banding a bird (i.e. the day the transmitter is deployed). A non-lubricated leg loop will be extremely difficult to adjust – the Tygon medical tubing and Stretch magic jewelry cord create friction without a lubricant.

