

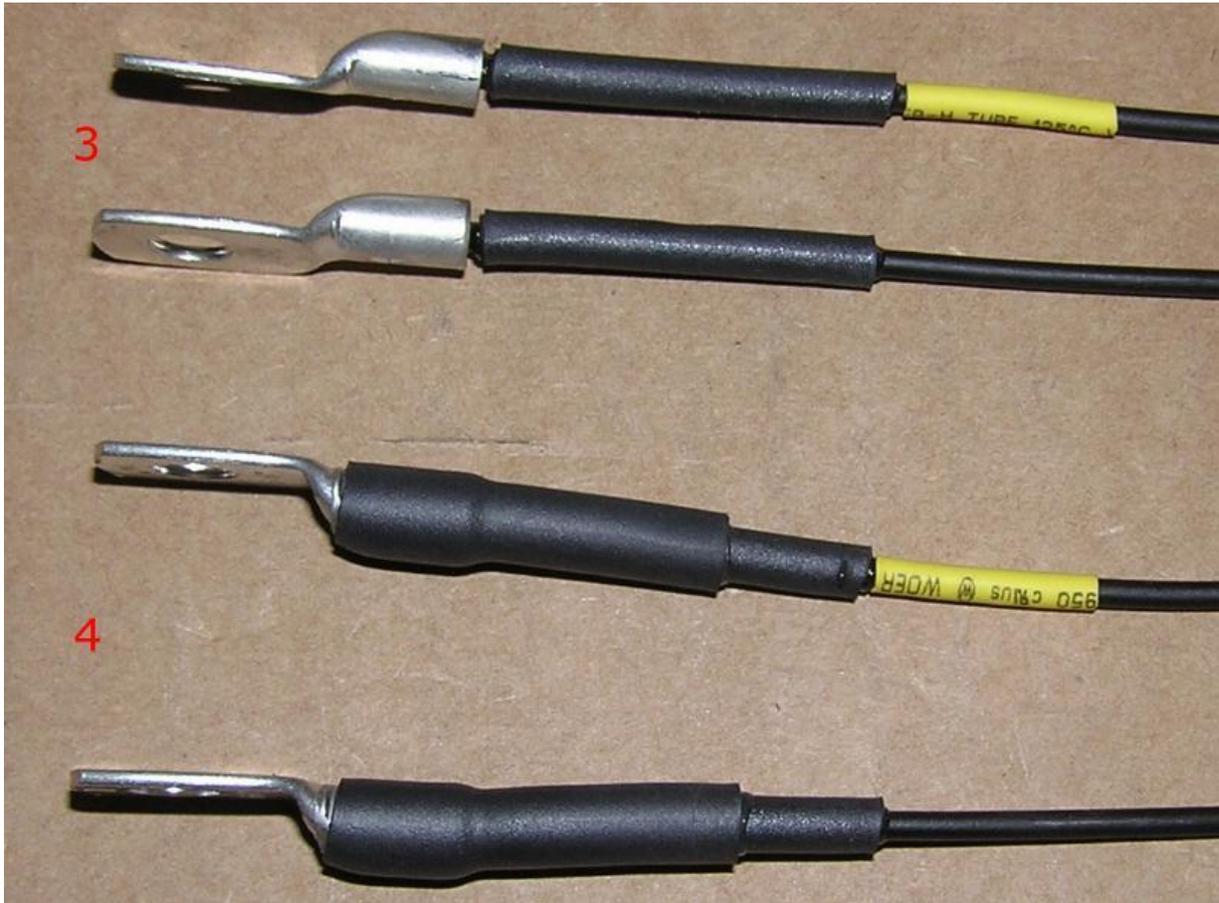
## Building Driven Elements (DE)

(Example: 10m-DE)

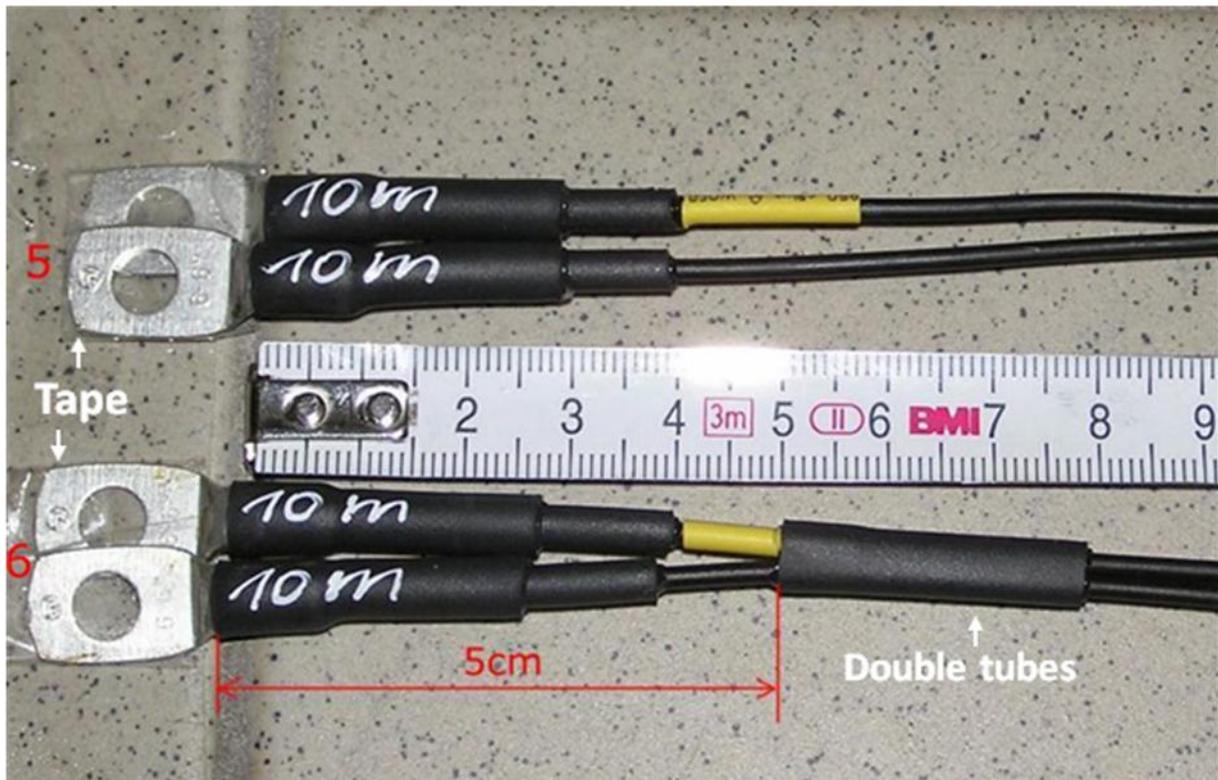
### PREPARING THE FEEDPOINT END:



- 1a. Cut two pieces of CQ-532 wire to the cut length shown in the table of lengths for the driven elements (in this example for the 10m Radiator it is 320cm).
- 1b. Remove 1cm of insulation from one end of each wire **and tin the bare wire with solder.**
  
- 2a. Insert the wire in the solder lug and if possible, crimp for a good mechanical connection. (Crimping is optional).
- 2b. Solder the connection to the solder lug.



- 3a. Cut a 3cm long piece of heat-shrink tubing (3/1 mm)
  - 3b. Slide this piece of tubing over the open end of the wire, until it is touching the solder lug.
  - 3c. Heat the tubing with a heat gun until it shrinks tightly onto the wire.
  - 3d. Do the same for the second wire.
  - 3e. Mark one of the two wires with colored heat-shrink tubing (shown here in yellow) or colored electrical tape. This colored tubing is not included in the antenna kit.
- 
- 4a. Cut a 3cm long piece of heat-shrink tubing (6/2mm).
  - 4b. Slip this tubing over the open end of the wire and push it to the other end, and over the solder lug.
  - 4c. Heat the tubing with a heat gun until it sits tightly on the solder lug and smaller tubing.



5. Label the driven element with a (white) permanent-ink pin (i.e. Edding or Sharpie).

Then tape the two solder lugs together with cellophane tape (this keeps the beginning of both wires at the same place).

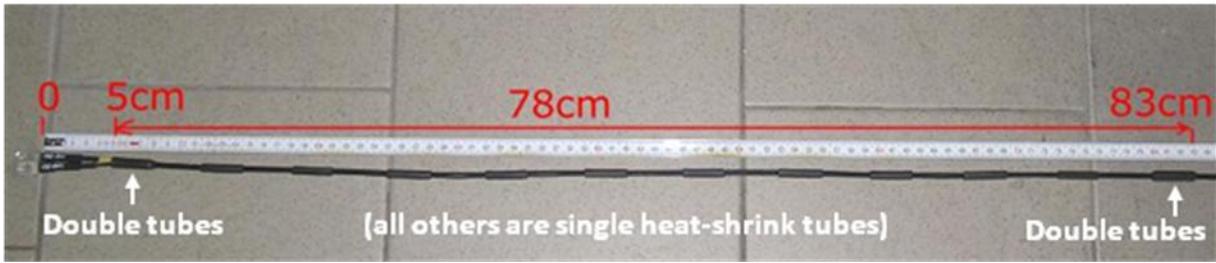
**IMPORTANT:** Both wires must remain parallel over the length of the feedline. The feedline must NOT have any twist in it.

## PREPARING THE PARALLEL FEEDLINE:

6. For 10m- und 12m-DE, place the first piece of heat-shrink tubing 5cm from the solder lug's flat surface (see picture). For other bands, use the measurement "C" in the table (15m does not have a feedline). **Then heat the tube and shrink it.**

**IMPORTANT:** Use double tubes (2 pieces of tubing) for the first and last heat-shrink tube (place the second one directly over the first one).

**IMPORTANT:** Keep both wires straight, parallel and under tension when installing the strips of heat shrink tubing.



This is how the feedline looks when it is completed.



Beginning: first shrink-tube placed 5cm (for 10m band) from the flat part of the solder lug.



The End is 83cm from the beginning.

This results in 78cm of parallel feedline.

**IMPORTANT:** After completion of the feedline, remove the tape from the solder lugs and measure between the two wires (with an Ohm Meter) to be sure there is no short circuit between the wires.

## INSTALLING THE CENTER INSULATOR:



Bend the two wires 90 degrees away from the center, away from each other.

Then insert the end of each wire through the slot of an insulator, through the tiny hole and pull it out the end of the insulator.

Pull it tight.

**IMPORTANT:** Mark the same wire as before with a piece of colored heat-shrink tubing (shown here as yellow, on the left).

**CAREFUL: YOU MUST MAKE CERTAIN IT IS THE SAME WIRE!**

The wire marked with yellow must be the same wire as the one marked with yellow next to the solder lug. **Control your work by** measuring with an Ohm Meter. Otherwise the feedline wires might get transposed and this will destroy the SWR on some bands.

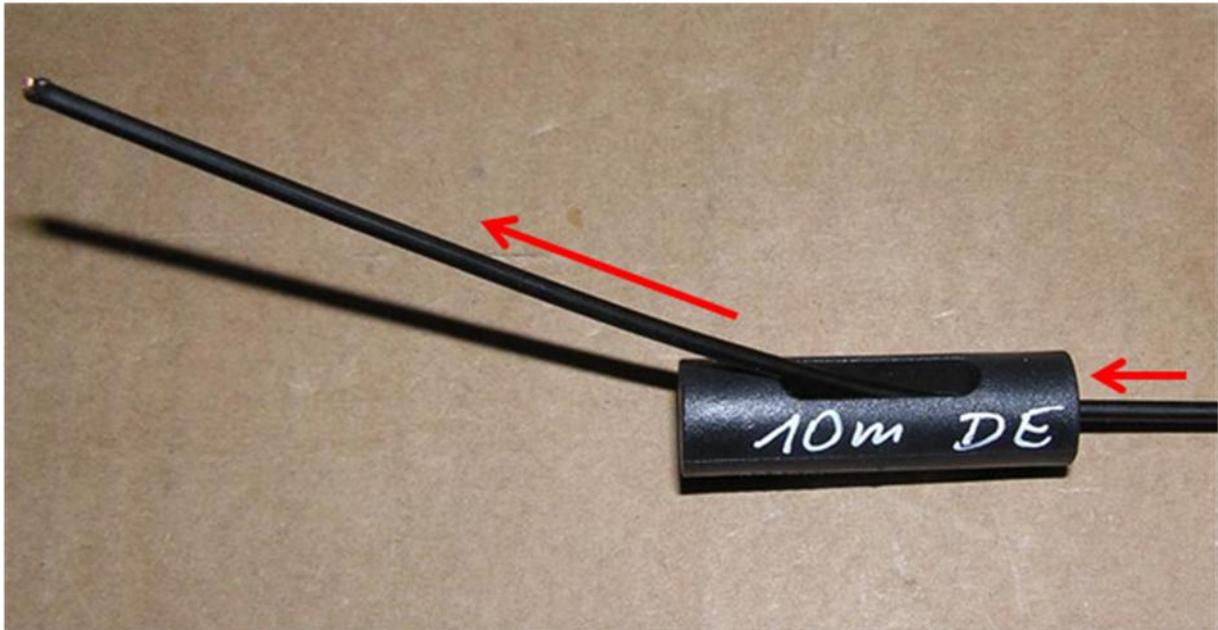
Finally, label the center insulator with a white permanent marker (see picture).

## ADDING THE LOOP TO THE INSULATOR:



Cut 20cm of PVDF Monofil and tie it through the center slot of the center insulator, creating a loop.

## PREPARING THE ENDS OF THE DE:



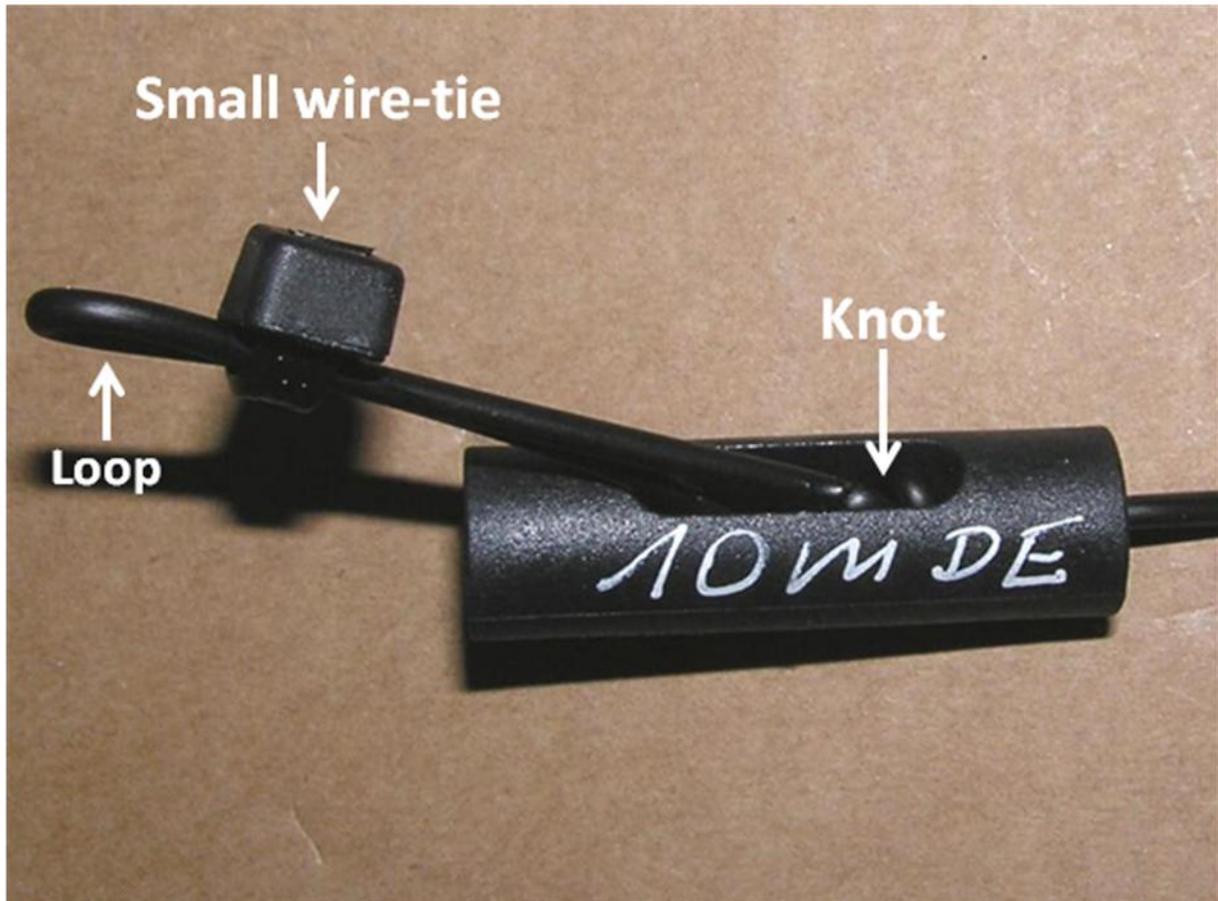
Insert the end of the wire through the hole on one end of the insulator, push it through, and pull it out through the slot in the center.



Tie a simple overhand knot in the wire, such that the end of the wire is **EXACTLY 10cm** from the knot.

(NOTE: 10cm is for the 10m DE and also for the 12m, 15m and 17m DE. The 20m DE is 15cm from the end.)

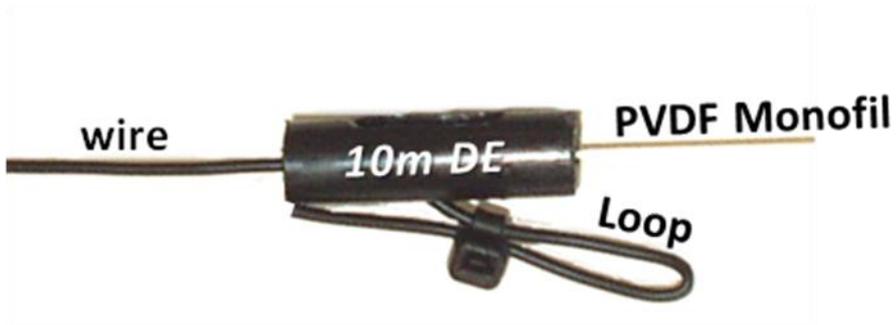
## CREATING THE WIRE LOOP AT THE END:



After tying the knot, bend the 10cm stub in the middle and fold it back towards the knot, creating a loop in the end of the wire.

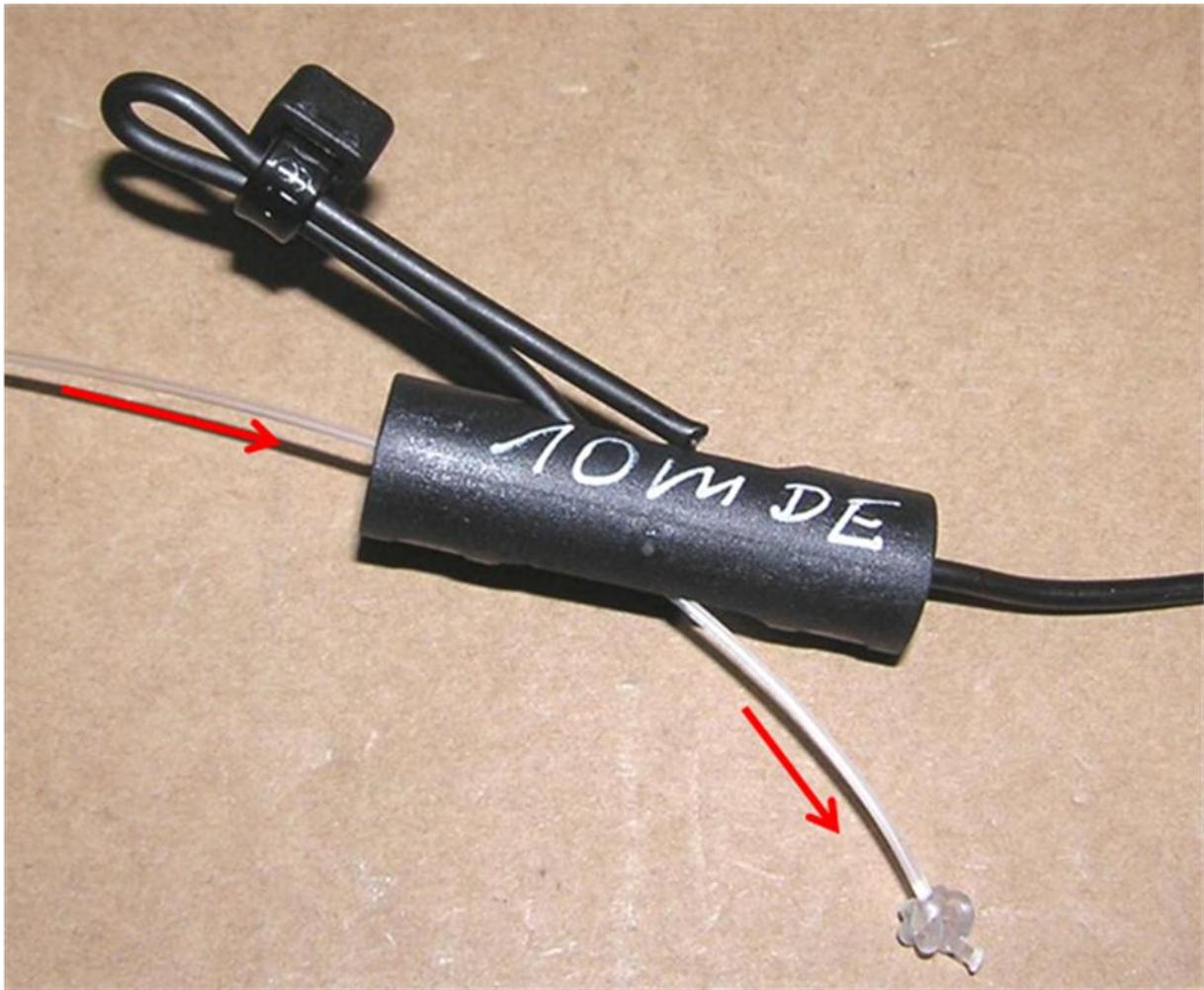
Secure the loop using a small wire-tie.

(Note: wire ties were not included in the antenna kit.)



This is how it will look after the PVDF Monofil is attached (later).

## ATTACHING THE PVDF MONOFIL LINES:



Insert the end of the PVDF Monofil line through the other end of the insulator, and pull it out through the slot in the center.

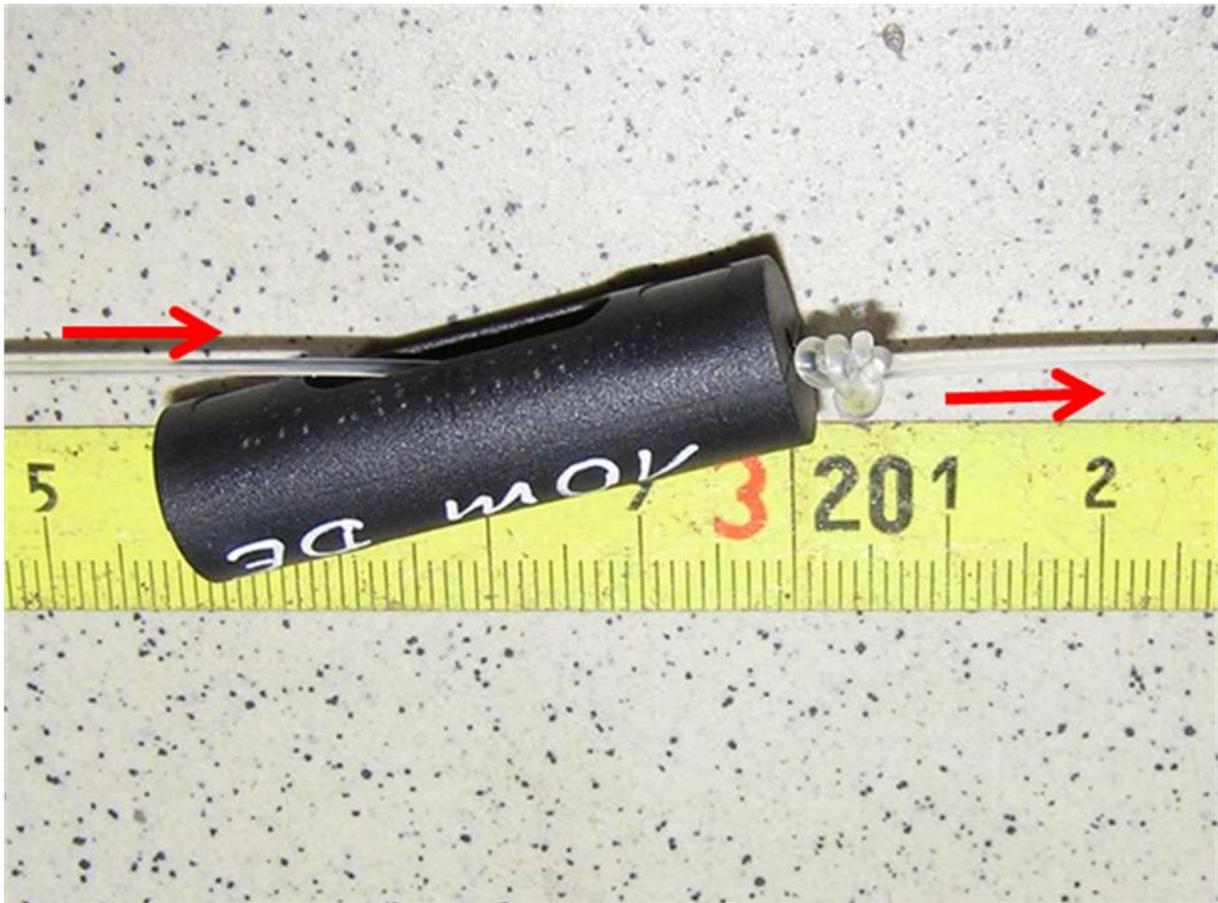
Tie a larger knot in the end of the Monofil line. We recommend tying 3 knots together to make it large enough such that it does not slip back through the hole.

Clip off the excess Monofil stub behind the knot.

Pull the Monofil line back through the insulator, pulling the knot inside of the center slot.

**(NOTE:** Make sure it cannot be pulled through the hole in the insulator.)

## ATTCHING THE 2<sup>nd</sup> INSULATOR TO THE MONOFIL LINE:



Insert the end of the Monofil line into the slot in the middle of the insulator, through the tiny hole, and pull it about from the end of the insulator.

Tie again a triple knot, leaving about 20cm of Monofil stub extending beyond the knot. This extra line (stub) is to allow for adjusting the tension of the line, later when the element is mounted to the fiberglass spreaders.

**IMPORTANT NOTE:** The lengths of Monofil Line shown for each band in the table are the distance from Knot-to-Knot. You must cut the line about 40cm longer (so that you have 20cm for each end for adjustment).

*(Also, the length of Monofil Line on 10m is 320cm, the same length that you cut the wire for this band. **This was a coincidence!** On other bands they are not the same length).*

FINALLY: Label the End Insulator with a white permanent ink pen.

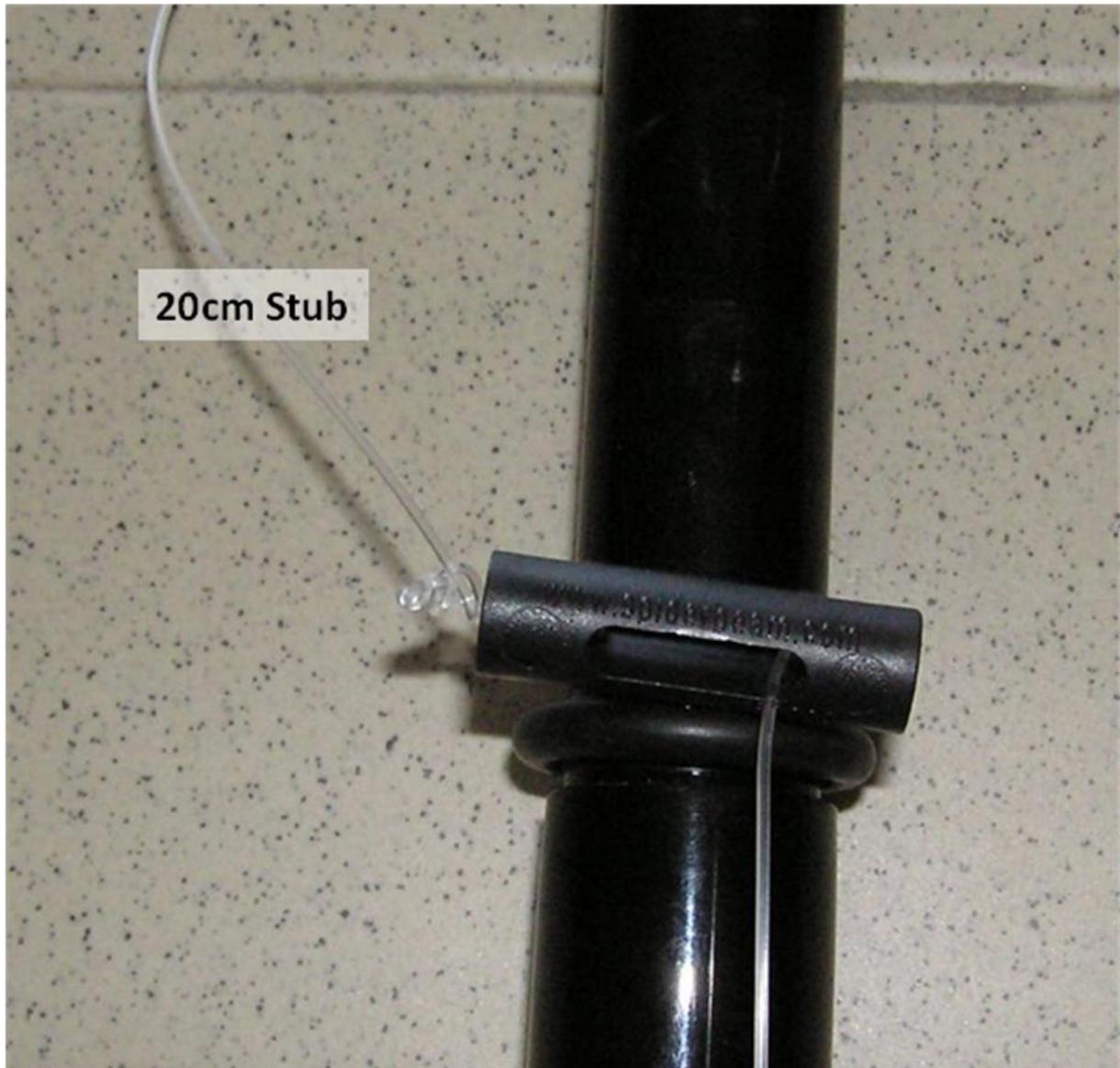
**Prepare both sides this way.**

## **MOUNTING THE PVDF MONOFIL LINE TO THE SPREADER:**

Create a loop in the Monofil in the same way we created the loops with the Kevlar rope for the line tensioners (Kevlar loop shown here:)



Slide loop over end of pole, push it to the rubber ring and pull tight, as shown in the picture below:



**THIS COMPLETES THE ASSEMBLY OF THIS DE.**