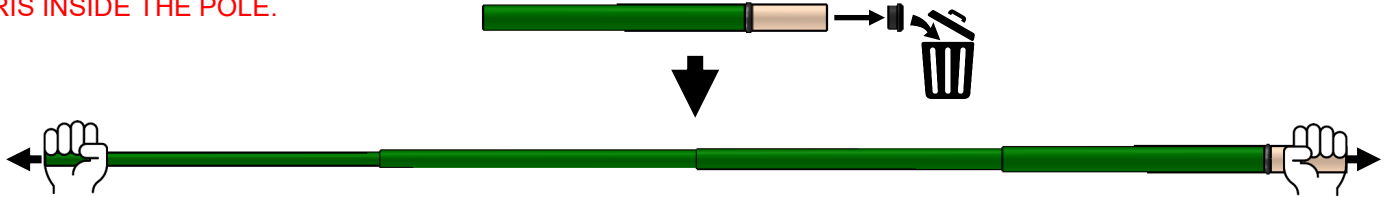
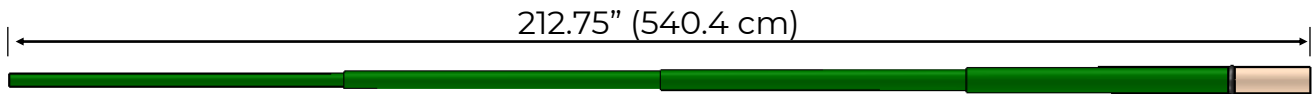


## PREPARING THE TELESCOPING POLES

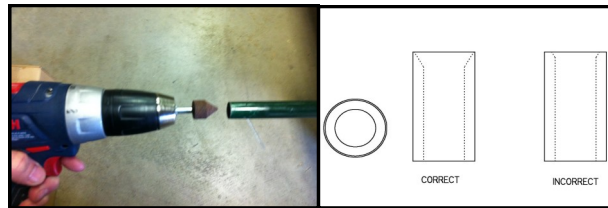
1. Extend the telescoping poles (PN 10-1013-02) to full length by firmly locking each section of the pole in place. A good methodology is to position each half of the joint so that they are several inches apart (while still within each other), and then pull quickly and firmly. Do this for each pole. There are rubber plugs inside the base section of each telescoping pole. These make it easier for handling, but they **MUST BE REMOVED BEFORE ASSEMBLY. VERIFY THE FOAM INSERT IN THE PLUG HAS NOT MADE ITS WAY DOWN THE POLE AND THAT THERE IS NO OTHER FOREIGN DEBRIS INSIDE THE POLE.**



2. With the poles fully extended, trim the end of the tip element of each pole so that the pole is 212.75 inches (540.4 cm) from the tip of the pole to the butt end, as shown below. **ONLY trim the poles used for the 40/30 loops**—if your antenna has 20m-6m straight elements, those should not be trimmed (must have a length of at least 213.1”). Use a hack saw, pipe cutter, or similar cutting blade that is suitable for fiberglass. Be sure that you cut the pole perpendicular to the length of the pole so that it is as “square” as possible.



3. Using the conical drill bit, chamfer the tips of the 40/30 poles as shown below. The image below shows the proper angle to chamfer to. Clean out the interior of the fiberglass poles after chamfering it.



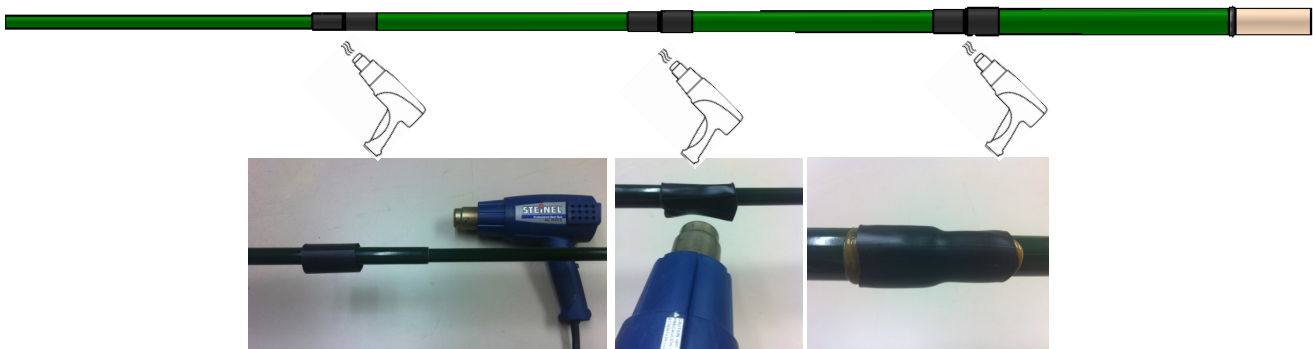
LOOK INSIDE OF THE TELESCOPING POLE TO VERIFY NOTHING IS BLOCKING IT. YOU SHOULD BE ABLE TO SEE LIGHT AT THE OTHER END IF THE POLE IS KEPT STRAIGHT. DEBRIS INSIDE THE TELESCOPING POLES CAN LEAD TO FAILURE OF THE EHU.

4. Each telescoping pole uses 3 polyolefin heat shrink pieces 1.5” x 3” (PN 10-1059-01), one covering each joint after it has been pulled tight. Once finished, the seal is secure and waterproof. This product requires a heat gun for activation of the adhesive.

5. When positioning the heat shrink, place it so that the joint of the telescoping pole is centered in the middle of the heat shrink.

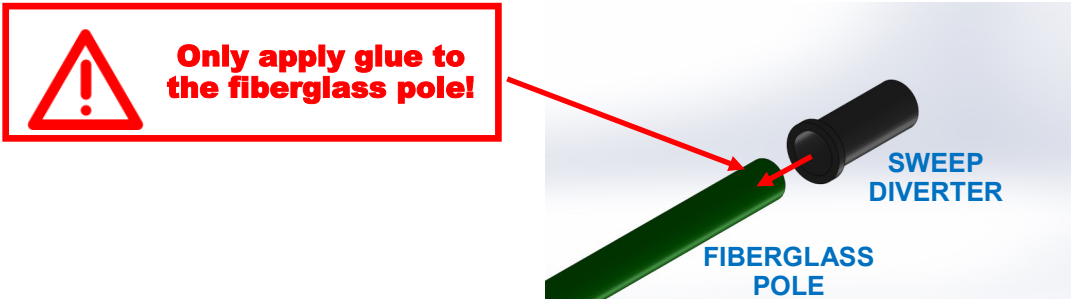
6. Using a heat gun (hair dryers will NOT work), apply heat evenly around the entire area of heat shrink. Note: there are 4 blue colored lines imprinted on the tubing. The joint is considered done being heated and waterproof when the lines change color to a yellowish green. Each line needs to change color to ensure even adhesion temperatures.

7. The heat shrink will want to slide as it is heated so wear gloves and reposition the heat shrink to keep it centered on the joint as needed. **Caution: The heat shrink will be HOT, wear insulated gloves!**



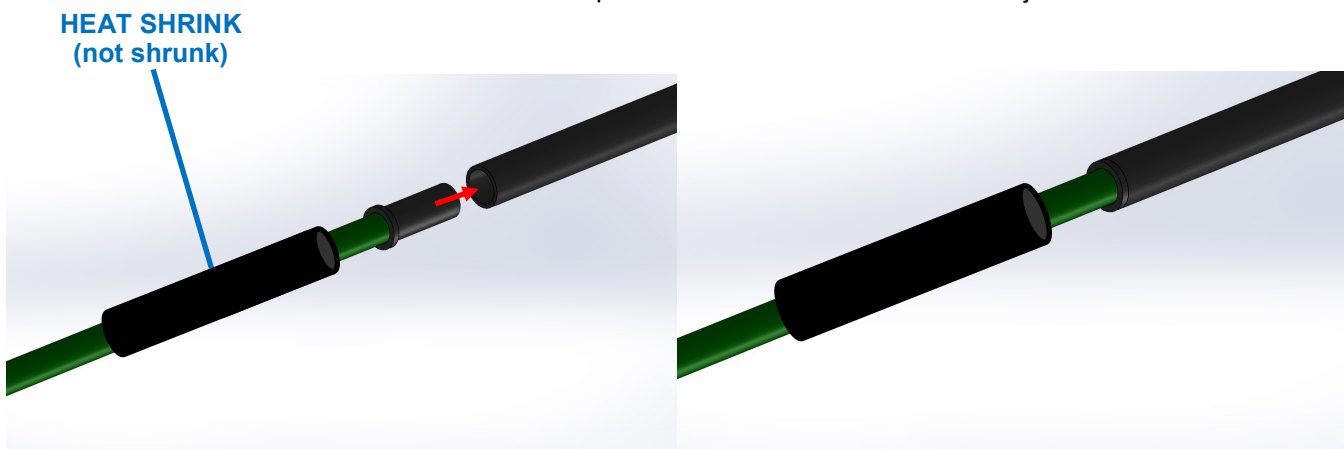
## ATTACHING SWEEPS AND DIVERTERS TO FIBERGLASS

8. Use the glue kit (PN 72-0009-03) from the glue/tape kit to attach the sweep diverters (PN 10-1511-01) to the tips of the fiberglass telescoping poles. **ONLY APPLY GLUE TO THE FIBERGLASS**. Slowly rotate the sweep diverter as you slide it onto the pole to let the glue cover the most surface area possible. **MAKE SURE THE SWEEP DIVERTER IS PUSHED AS FAR DOWN ONTO THE FIBERGLASS POLES AS POSSIBLE**. The sweep diverter should be oriented in the same way as shown in the figure below, with the flanged edge towards the rest of the pole. Be sure the glue has dried completely before moving onto the next steps.



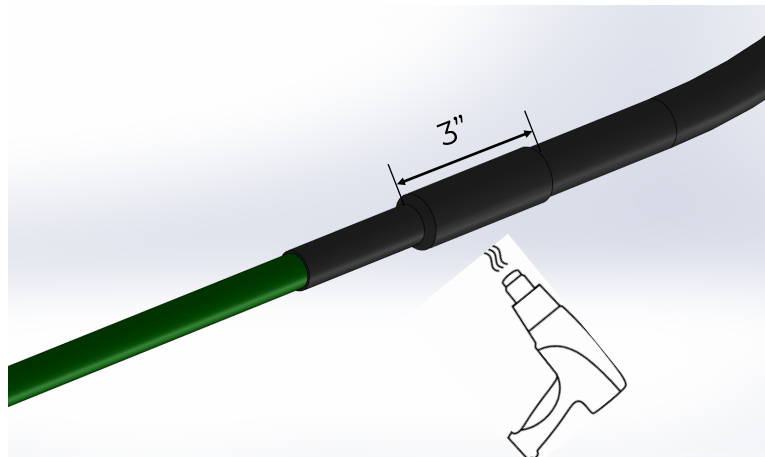
9. Put a piece of polyolefin heat shrink 1.1" x 6" (PN 10-1059-21) onto the telescoping pole, leaving the diverter clear. It should be down on the pole far enough that it doesn't interfere with fitting the diverter into the sweep.

10. Insert the fiberglass pole, with the sweep diverter on it, into the sweep as far as possible. **DO NOT GLUE THE SWEEP DIVERTER INTO THE SWEEP**. Reposition the heat shrink to cover the joint.



11. Shrink the polyolefin sleeve over the joint as described on step 6 on the previous page; **LEAVE AT LEAST 3" OF HEAT SHRINK ON THE SWEEP SIDE OF THE JOINT**. **Be EXTREMELY careful not to overheat the poly sweep, you will deform or kink the material if too much heat is applied** (if this occurs you will need to undo your work and replace the poly sweep).

12. Remember, the heat shrink will want to slide as it's heated. Reposition it as it cools to make sure the joint is fully covered. **The heat shrink will be hot; wear insulated gloves**.

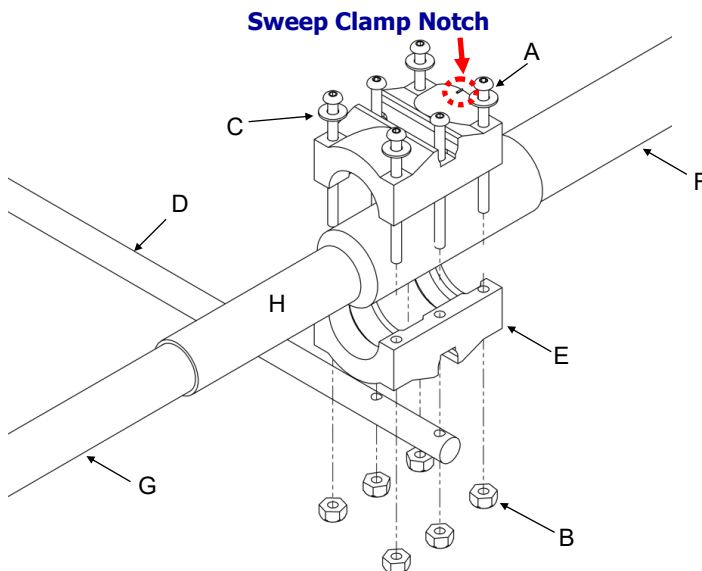


## ATTACHING SWEEP COUPLERS TO SWEEP TUBES

- Refer to [figure 6.06](#) during the following steps for an overview of the assembly process.
- Each of the sweep coupler halves (PN 10-1155-01) will have a notch in the mold on one side marked with silver sharpie. **IT IS CRITICAL THAT THESE NOTCHES ARE POINTING TOWARDS THE SWEEPS OR THEY WILL NOT WORK PROPERLY.** See [figure 6.07](#) for the location of the mark. Be certain that each half of the coupler has the mark facing the sweep tube!
- 13.** Place the coupler halves over the heat shrink on the sweep side of the joint. The flange on the diverter should still be visible through the heat shrink, as well as the edge of the sweep material. The non-marked side of the coupler should be placed as close to the edge of the sweep material as possible, without overhanging, as shown in the cutaway in [figure 6.08](#) where the sweep diverter is highlighted in blue.
- 14.** Insert four of the 6-32 x 2" socket head screw (PN 60-0186) with washer (PN 60-0016). Place the screws so that the threaded portion of the screw is facing downward. **BE SURE THAT THE DRAIN HOLES FOR THE PLASTIC SWEEP TUBE ARE POINTING DOWNWARD BEFORE INSTALLING THE COUPLERS.**
- 15.** Apply anti-seize to the threads and screw the Nylock nuts on. Tighten using a 5/16" wrench/socket to **turn the nut** and the provided 5/64" Allen Key to hold the screw. Tighten enough so that the clamp is held in place on the sweep/heat shrink. Final tightening will happen once the fiberglass spreader is installed.
- 16.** Repeat the previous steps on the other side of sweep tube.

**FIG. 6.06**

Key	QTY	Part Number	Description
A	6	60-0186	Screw, 6-32 x 2", 18-8 Button Socket CS
B	6	60-0014	Nut, 6-32 Nylock
C	4	60-0016	Washer, 6-32, Flat
D	1	10-1503-21	Fiberglass Rod, 3/8" x 31-3/4" long, black
E	2	10-1155-01	Sweep Clamp, SCH-160 Clamp Half
F	1	10-1153-01	Poly Sweeps (100psi)
G	1	10-1013-02	Telescoping Pole, 18 foot 4 section
H	1	10-1059-21	1.1" x 6" polyolefin heat shrink

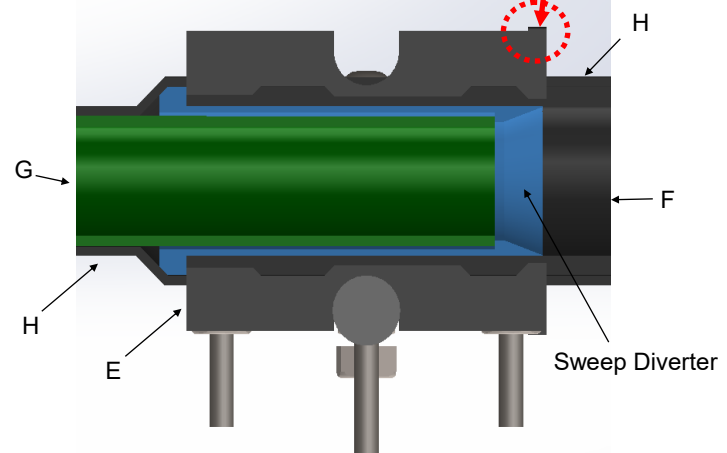


**FIG. 6.07**



**Sweep Clamp Notch**

**FIG. 6.08**



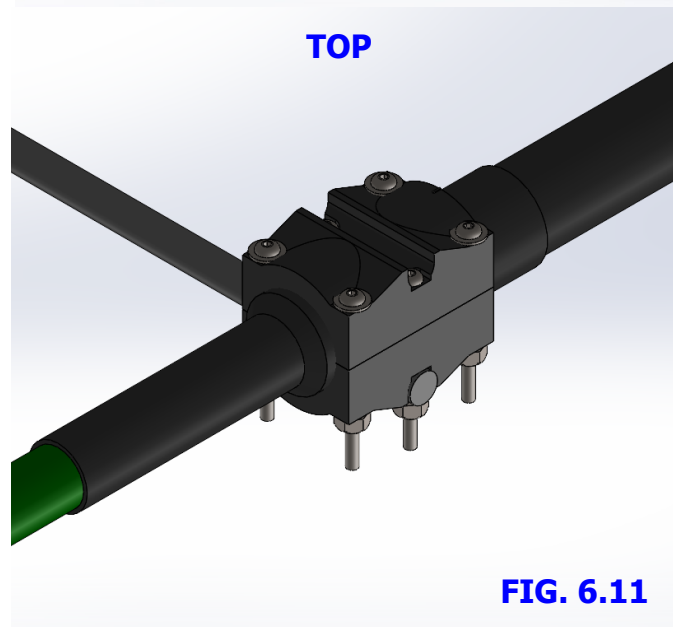
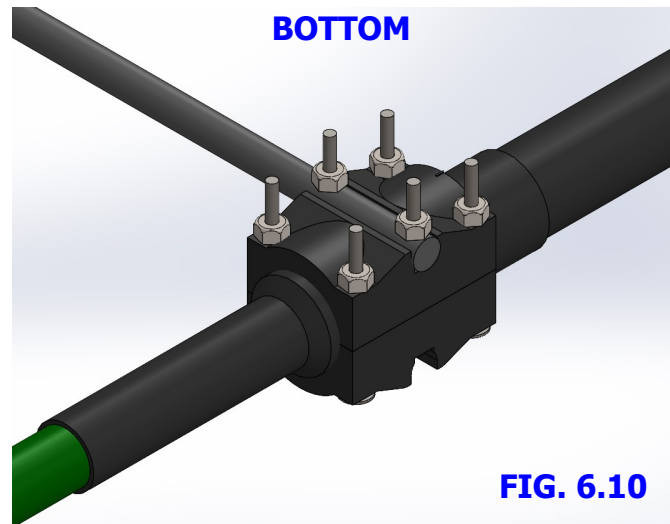
## MOUNTING FIBERGLASS SPREADERS

**17.** Mount the black fiberglass sweep spreaders (PN 10-1503-21) to the sweep couplers. There is a concave mounting area on each side of the plastic couplers. Position the fiberglass spreader so that the holes align with the clam shell couplers as shown in [figure 6.10](#). When installing the fiberglass spreader, you will want the spreader to be underneath the plastic coupler as shown in [figure 6.11](#). The spreaders will be longer than the couplers on each side of the loop. This is done on purpose to ensure plenty of fiberglass material is on each side of the screw.

**18.** Insert 2qty 6-32 x 2" socket head screw (PN 60-0186) through each of the coupler halves and the fiberglass rod. This screw must be placed so that the Nylock nut (PN 60-0014) is resting on the fiberglass material and the screw head are resting inside the concave groove on the top of the sweep coupler. Refer to [figures 6.10](#) and [6.11](#) for detail. The screws are longer than necessary so that you can get the nut on in the initial stages.

**19.** Tighten the Nylock nuts firmly. Be sure to use anti-seize on these screws or they will likely gall and have to be replaced.

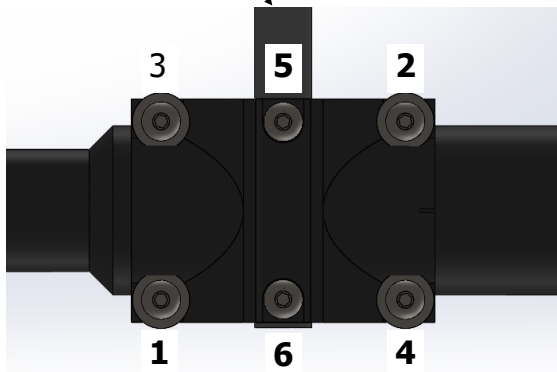
**20.** Repeat the previous steps on the other side of sweep tube.



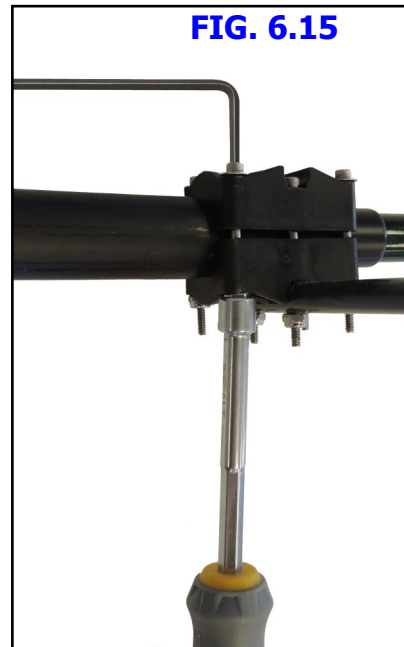
## FINAL TIGHTENING

- 21.** Finish tightening the four screws on the outside corners of the plastic coupler. Tighten evenly, in an automobile X type pattern as shown in [figure 6.14](#). If you do not tighten evenly, you may break the fastener. Once the outsides are firmly tight, tighten the two screws that hold the fiberglass spreader in place. [Figure 6.15](#) shows the suggested method for tightening the screws.
- 22.** When completely tightened, **THE SWEEP COUPLER HALVES SHOULD HAVE GAP OF ABOUT 5/16" – 3/8"**, as shown in [figure 6.16](#). This gap is not critical as the coupler is mostly to keep the spreader in place properly. **IT IS BEST TO LET THE SCREWS SIT FOR A WHILE (15-30MIN) AND TIGHTEN IN INTERVALS IN ORDER TO ALLOW THE PLASTIC CLAMP MATERIAL TO RE-FORM.** This also will reduce the chance of snapping a screw.
- 23.** [Figure 6.17](#) shows the completed sweep—repeat the process for each sweep.

Fiberglass spreader rod



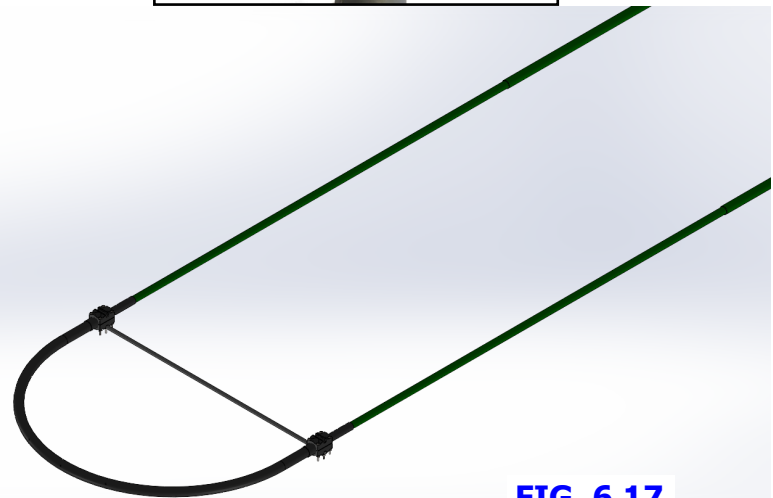
**FIG. 6.14**



**FIG. 6.15**



**FIG. 6.16**



**FIG. 6.17**