

7. Add-On Dipole for Spiderbeam Yagis

Required material for HD and portable versions:

Nr.	quantity	description
1	1612cm	Wireman CQ-532 stranded Copperweld silky wire, PE-Insulation
2	16cm	Heat shrink tube 3/1mm with hotmelt glue inside
3	16cm	Heat shrink tube 6/2mm with hotmelt glue inside
4	10cm	Heat shrink tube 9/3mm with hotmelt glue inside
5	20cm	Heat shrink tube 13/6mm with hotmelt glue inside
6	8	Plastic - Insulators, black Polyethylene, UV resistant
7	2	M6 tubular cable lugs, tin plated copper
8	24m	PVDF monofilament fiber line, 1mm diameter
9	2	V2A (stainless steel) hose clamps, diameter 30-45mm, width = 9mm
10	2	V2A (stainless steel) hose clamps, diameter 25-40mm, width = 9mm
11	25cm	Flat rubber strip (EPDM UV resistant), width = 15mm, thickness = 3mm
12	10	Cable ties, UV-resistant 100x2,5mm
13	1	20cm diameter spool

7.1 Fabricating the Wire Elements

- Cut two pieces of heatshrink tube 3mm/1mm to a length of 3cm
- Cut two pieces of heatshrink tube 6mm/2mm to a length of 3cm
- Cut two pieces of CQ-532 wire to a length of 458cm
- On each of the two wires, remove 1cm of the isolation on one side and attach the solder lug
- Afterwards attach a piece of 3/1mm heatshrink tube and then a piece of 6/2mm heatshrink tube over the solder lug, thus forming a strain relief.



- Cut two pieces of heatshrink tube 3mm/1mm to a length of 5cm
- Cut two pieces of heatshrink tube 6mm/2mm to a length of 5cm
- Cut two pieces of heatshrink tube 9mm/3mm to a length of 5cm
- Slide the three pieces over the CQ-532 wire, they will later be needed for covering the solder joint.
- Now remove also 1cm of insulation from the other end of the wire

7.2 Attach the capacitive end load wires

- Cut two 168cm long pieces of CQ532 and remove 1cm of insulation at one end
- Cut two 180cm long pieces of CQ532 and remove 1cm of insulation at one end
- For each leg of the dipole, one wire of 168cm and one wire of 180cm length will be needed
- Twist and solder the 3 wires together. The Dipol leg must point in one direction, the two end loading wires (168 and 180cm) must point in the other direction



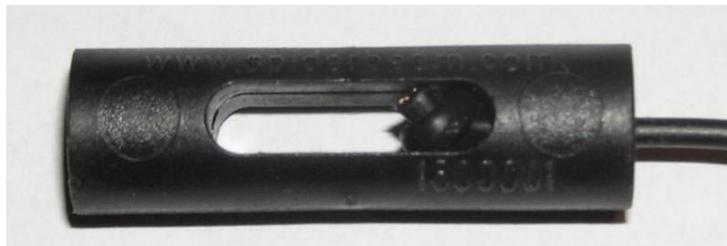
- Slide the 3/1mm heatshrink tube over the solder joint and heat it up.



- After it has cooled down, slide the 6/2mm heatshrink tube over the joint and again heat it up.
- After it has cooled down, slide the 9/3mm heatshrink tube over the joint and again heat it up.



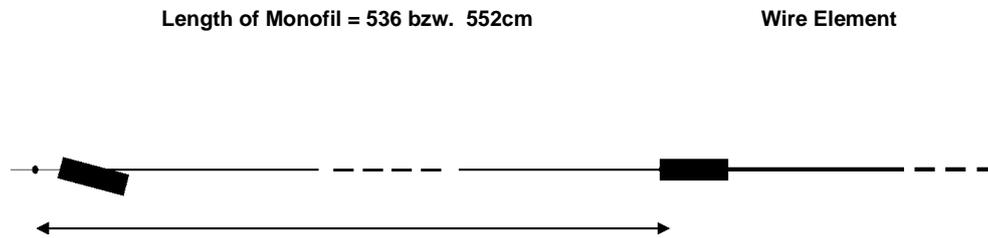
- At the end of the 168cm long end loading wire, attach an insulator and secure it with a knot
- Cut off the excess 2cm of wire



- Cut of a 576cm long piece of PVDF Monofil and attach it to the insulator. Attach another insulator at a distance of 536cm and let the remaining Monofil hang loose so you can later adjust the length.
- Attach end insulator at the end of the 180cm long end loading wire but let 30cm wire exceed the insulator. Fold back 15cm and fix it with 3 cable ties. This will later be used for adjusting resonance.



- Cut off 592cm PVDF Monofil and attach it at the Insulator. Attach another insulator at a distance of 552cm and let the remaining Monofil hang loose so you can later adjust the length.
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7.3 Fabricating the Rubber padded clamps

- Cut two pieces of 15x3mm flat rubber strip: Portable Beam: 12.5cm long, HD Beam: 11 cm.
- Cut two pieces of 13/6mm heat-shrink tubing: Portable Beam: 10cm long, HD Beam: 8 cm.

Then open the hose camps completely and lay flat onto the rubber strip, as shown below:



Slide the heat-shrink-tubing over them as shown below:



After heating and shrinking, it should look like this:

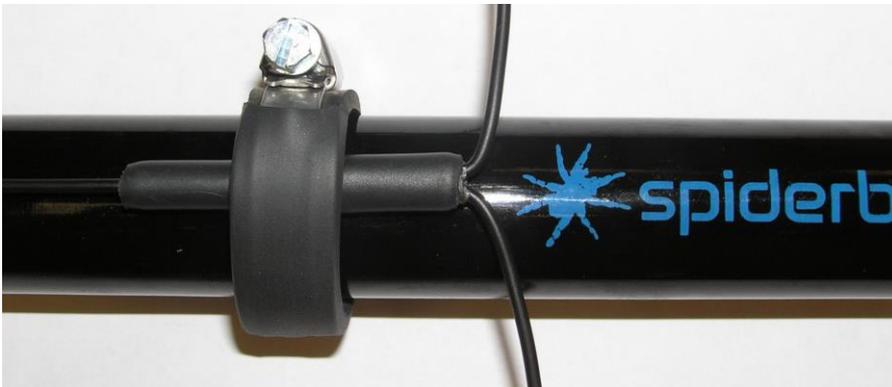


Now screw the end of the clamp back through the fastener:



7.4 Attaching the Dipole to the Spiderbeam Yagi

- Attach the solder lug of one dipole leg to the bolt on the righthandside of the Balun
- Route the wires to the end of the boom fiberglass spreader.
- Attach the Monofil ropes at the ends of each endload wire to ends of the lateral fiberglass spreaders.
- Now attach the solder joint which was covered with the 3 layers of heatshrink tube with the rubber padded clamp to the boom spreader (25...40mm clamp for HD Spiderbeam and 30...45mm clamp for Portable Spiderbeam). The dipole should be hanging free in the air between the balun and the end of the boom spreader (similar to the 15m driven element, only 90° rotated).



- This triple covered center joint will then be situated approx. 454cm on the rear end of the boom.
- The other dipole leg is installed in a similar fashion by attaching it to the lefthandside bolt of the balun and routing the dipole wires to the frontside of the boom. The triple covered center joint will then be situated approx. 468cm distance from the center. It means the endload wires will be strung between the 20m director and the second 10m director.

