



Yagi upgrade to the „Heavy Duty” Version

Many people wanted to use the Spiderbeam not only temporarily for portable activities, but also in a permanent installation at home. For most fixed installations low antenna weight is a bit less important, but the mechanical design must be strong enough to permanently survive storm and severe weather conditions for many years. Therefore two versions of the antenna were developed: a specially reinforced version optimized for fixed installation, and a lightweight version optimized for portable use. The “Heavy Duty” version gains a lot of extra ruggedness by the following changes to the design:

- specially reinforced fiberglass tubes, double wall thickness (2mm)
- center joint constructed with aluminum plates of double wall thickness (2mm)
- replacing the Velcro with stainless steel hose clamps with rubber padding
- (possible) addition of second upper guy line

No further changes to the antenna are necessary! The weight increases by approx. 5kg. Total weight is 11kg, which is still substantially less than many other 3- or 5-band beams with comparable on-air performance.

Material List for 3-Band Portable to 3-Band HD

When **converting to a Heavy Duty Version** a few pieces of material are different from those that are used with the portable version. See the following list for the necessary new material:

quantity	description
20	fiberglass tube segments, length = 1.15m, diameter 30mm, 2mm wall thickness
4	aluminium tubes, outer diameter 35mm, wall thickness 2mm, length = 175mm
8	aluminium tubes, outer diameter 10mm, wall thickness 1mm, length = 29mm
4	Rubber caps for HD segments
15m	Kevlar core guy line, 1.9mm diameter
8	Plastic - Insulators, black Polyethylene, UV resistant
8	Rubber O-Rings (EPDM, UV resistant), 20x6mm
1.3m	Flat rubber strip (EPDM UV resistant), width = 20mm, thickness = 5mm
9	V2A (stainless steel) hose clamps, diameter 25-40mm, width = 9mm (only 9 for the 3-Band version)
2	V2A (stainless steel) hose clamps, diameter 40-60mm, width = 9mm

All the Velco and EPOXY from your portable beam is not needed with the HD Version, because the Velcro for affixing the wire elements is replaced by the stainless steel hose clamps.

The other material remains the same.

Important note for portable YAGI Kit versions bought before 2019!

Since 2019 we use the same 2mm aluminium sheet metal for HD and portabel version of the center joint (cross).

Older portable Yagis only got a 1mm Aluminium sheet metal.

In case you have an old version you should also order a 2mm Version for the upgrade (separate order necessary).

Changes in your portable yagi

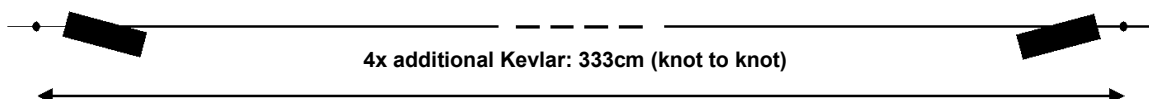
With the construction of the antenna, only a few small changes need to be made:

The spider center cross/joint:

The aluminum plates and tubes for the center joint are machined quite the same as the portable, beside the smaller Diameter for the fiberglass segments and the accordingly shorter aluminium sleeves. Simply exchange the tubes and sleeves and will have the HD version of the center cross.

Fabricating the additional Guy Lines:

In addition to the 8 Kevlar guy lines you fabricate another 4 Kevlar guy lines of 333cm length:



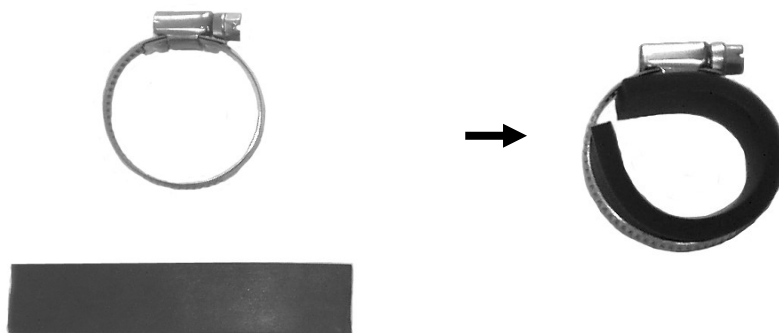
Preparing the Stainless Steel Hose Clamps with Rubber Padding:

Instead of the glue and velcro bands, you use the rubber padded clamps on the segments.

necessary parts:

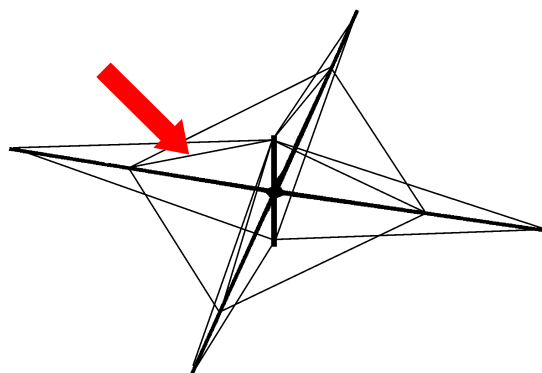
quantity	description
108cm	Flat rubber strip (EPDM UV resistant), width = 20mm, thickness = 5mm
9	V2A (stainless steel) hose clamps, diameter 25-40mm, width = 9mm

Cut the rubber strip in 9 pieces of 12cm length and stick it into the hose clamps:



Assembling the supporting center cross:

Put together the reinforced HD fiberglass tube segments exactly as with your portable version. Afterwards attach the guy lines. Use the 4 additional Kevlar lines of 333cm and attach as shown in the picture.



Mounting the Reflector & Director Elements:

The wire elements are mounted as for the portable version, but instead of the Velcro, use the hose clamps with the rubber padding and affix the wire element to the fiberglass boom as shown in the photo:

Mounting the Driven Elements:

The method for attaching the driven elements to the boom is the same: use the hose clamps instead of the Velcro tape.

Mounting the Balun to your mast/standpipe:

The method for attaching the balun to the mast is the same as well. No velcro is needed, just use the 2 larger hose clamps(40-60mm). No rubber padding is necessary when mounted on an alu standpipe or mast.



Important: When mounting the balun, make sure the symmetric feedlines are not stretched tight! If the feedlines are too tight, slide the balun a few centimeters down the mast, in order to release the tension on the lines. There must be slack on the feedlines, so they are not ripped out of the balun when the fiberglass tubes are flexing in the wind. This is all. No further changes are necessary.

Now you have your reinforced HD version of the 3-Band Yagi !

Original product of Spiderbeam GmbH, Otto-von-Guericke-Str. 3, 03130 Spremberg, Germany

For further information please visit shop.spiderbeam.com or contact us by Email at info@spiderbeam.com