G3TXQ Broadband Hexagonal Beam assembly manual By MWØJZE

As soon as your antenna arrives please check the contents for damaged or missing items.

Package contents:

1	Aluminium Air Coaxial Centre-Post & Stub-mast
1	Anodized Aluminium Centre Hub with 48mm top and bottom aluminium flange
6	22mm OD x 1.5m spreaders with fitted cleats and D-loops
6	17mm OD x 1.5m spreaders with fitted cleats and D-loops
6	12mm OD x 1m spreaders with fitted cleats and D-loops plus two support cords
6	Pre-cut and assembled wire elements, one for each band

The antenna is 'plug-and-play', no measuring or cutting is required.

If you do not read the entire manual make sure you read
Points 5 & 6 on page 5 and points 7 & 8 on page 6

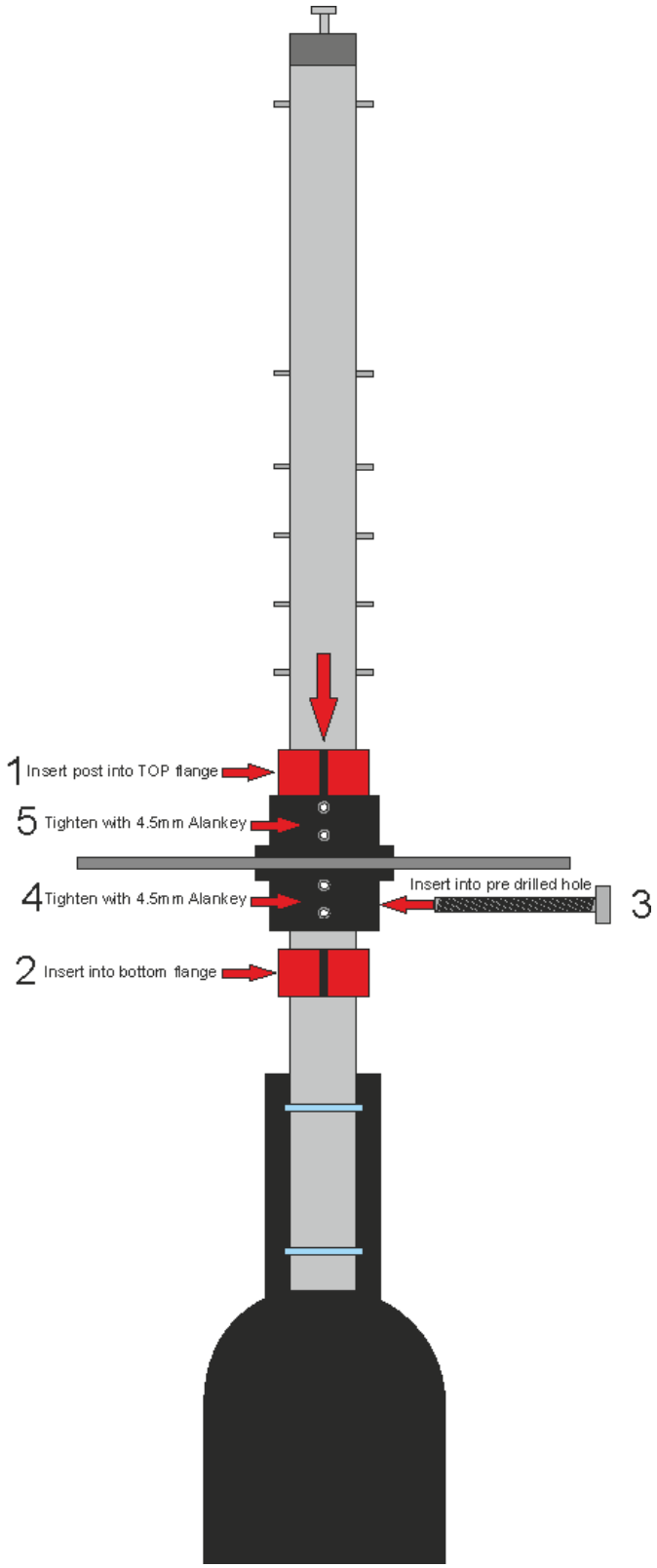
Tools needed
2 x 7mm spanners to attach wire elements to the centre-post
1 x 10mm spanner or adjustable spanners to fit flange to baseplate
1 x 4mm Alankey to fit flange to baseplate
1 x 8mm Alankey for flange grubscrews

The Hexbeam works best at heights around 35ft or more but it gives a good account of itself even at 20ft – particularly if it isn't pointing towards any close obstructions. You will see a marked reduction in SWR when raised to a reasonable height and away from nearby obstructions such as buildings. Remember that this beam is broad-banded so the SWR will remain quite low across each band – and well within range of most built-in antenna tuners in modern transceivers.

1 Assembling the hub and Centre-Post

The Hub comes in two parts; this is just for transportation purposes. The main body of the hub is already assembled for you but the bottom flange is left off during transit. Simply undo the nuts on the top flange (**DO NOT REMOVE THE TOP FLANGE**) and attach the bottom flange, make sure that the grub screws face the same way as the top flange as this represents the front of the Hexbeam, this is also represented with an arrow engraved on the bas plate.

1.A. Mounting the MW0JZE - G3TXQ Hexbeam To A Rotator

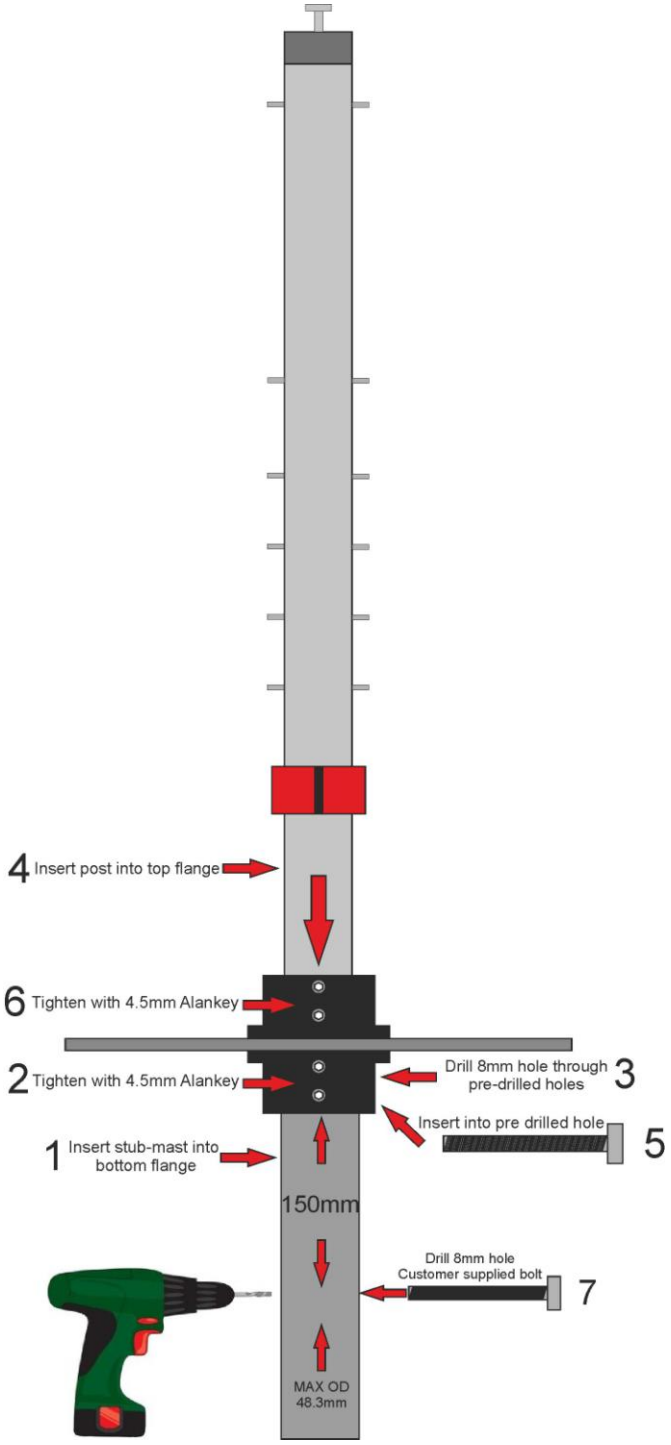


****4.5mm GRUBSCREWS have now been replaced with a 8mm GRUBSCREW****

The MW0JZE - G3TXQ Hexbeam comes with a red fibre collar, if you choose to fit the Hexbeam directly into a rotator you will need to fit this to the submast as shown above. Please observe which way it is fitted to the base plate when you unpack the antenna. It is marked with one end being black with a prominent line drawn on the side. Insert the Hexbeam centre post into the top of the base plate, slide the fibre collar up the stubmast. Line up the holes insert and tighten the bolts.

IMPORTANT, GRUB-SCREWS MUST BE AS TIGHT AS POSSIBLE!!!

1.B. Mounting the MW0JZE - G3TXQ Hexbeam To A Cage Stubmast



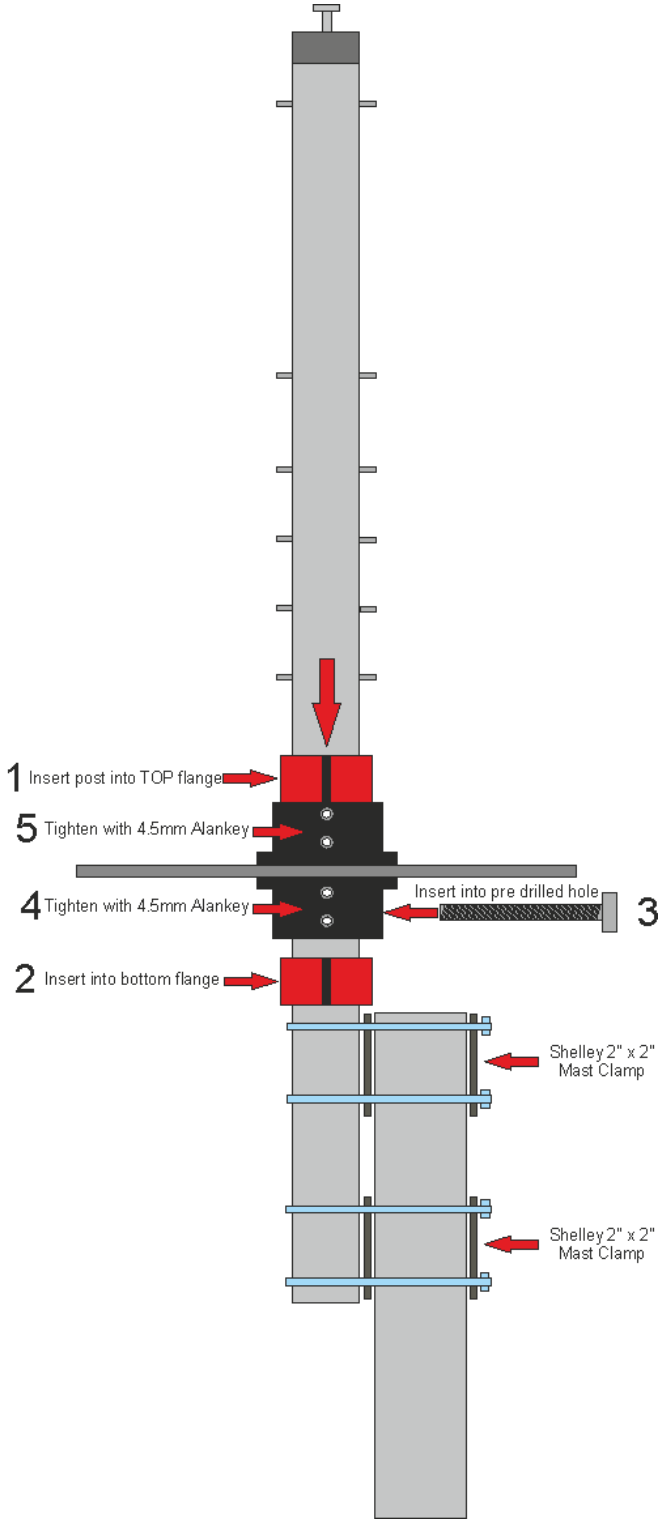
****4.5mm GRUBSCREWS have now been replaced with a 8mm GRUBSCREW****

If you are planning to mount the MW0JZE - G3TXQ Hexbeam above a rotator cage please follow the info on this page.

The Stubmast coming out of the cage needs to be a maximum of 48.3mm OD, any bigger and it will not fit into the bottom flange of the base plate. Insert the stub-mast into the bottom flange tighten the 2 grub screws with an alan key. Drill through the pre-drilled holes on the bottom flange with a 8mm drill bit. Insert the centre-post into the top flange with the black line on the fibre collar in line with the 2 grub screws. Line the holes up on the bottom flange and insert the M8 machine screw through the holes and tighten the nut. Make sure the top grub screws are tight. Measure 15cm below the bottom flange and drill an 8 or 10mm hole and insert bolt. I do not supply this bolt.

IMPORTANT, GRUB-SCREWS MUST BE AS TIGHT AS POSSIBLE!!!

1.C. Mounting the MW0JZE - G3TXQ Hexbeam to A Vertical Pole



****4.5mm GRUBSCREWS have now been replaced with a 8mm GRUBSCREW****

This is an ideal quick way to mount the MW0JZE G3TXQ Hexbeam while out portable. Fix the clamps to the Hexbeam first and then to the pole/mast. The stubmast is very strong, do not be afraid to tighten the clamps. The clamps are available in the UK from this site www.dastechnology.co.uk

The MW0JZE - G3TXQ Hexbeam stubmast is 35mm OD, I would recommend that the the mast pole is approx 50mm, this will stop the Hexbeam tilting over on the mast.

IMPORTANT, GRUB-SCREWS MUST BE AS TIGHT AS POSSIBLE!!!

2 Fitting the spreaders

1. By now you would have noticed that the hub and spreaders are numbered, this makes the assembly very fast and easy for you.
2. Arrange a temporary support upon which to stand the antenna during construction. A patio umbrella stand or maybe the hole in a picnic table would be suitable.
3. Site the support such that you will have a clear working area about 25 feet in diameter in which to assemble the antenna without obstruction.
4. Assemble each of the six spreaders by inserting the numbered sections into each other, make sure all the plastic cleats with D-loops are in-line and face up. Take particular care to insure the blue line remains outside as shown in fig 1 and tighten the tube clamp with a screw driver or 7mm spanner
5. Check the position of the cleats for each band according to the table below: measure from the hub end of the spreader to the nearest face of each cleat in turn. The wire elements will rest in the D-loop affixed to each cleat. Ensure that all cleats along the spreader face the same way up and are in-line with each other, and that each D-loop is slid along towards the centre hub ready to take the wire elements. **These are pre-set but in-case of movement during transit please see the table below.** Insert the spreaders into the hub following the numbers mark on them and ensure that all the cleats are facing upwards. ,
6. **THERE IS A TENSION CORD FITTED BETWEEN SPREADER 1 & 6, NO NOT REMOVE!!!**

Measurements in CM from spreader end to cleat

6M	10M	12M	15M	17M	20M
81.5	151.5	172.5	208	249.5	336

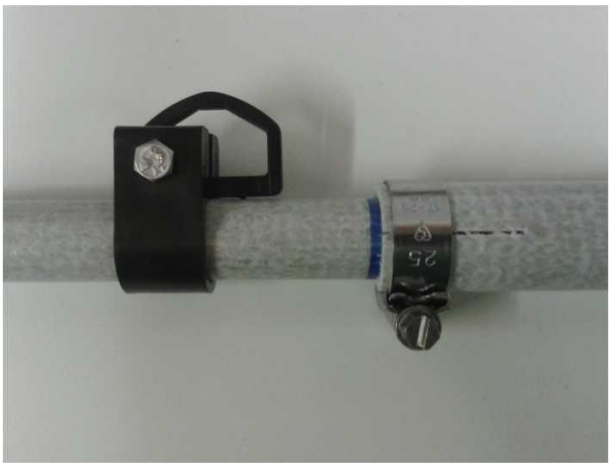


Figure 1

3 Fitting the support cords

- Unravel the support cords attached to the end of each spreader, there are two per spreader: radius and circumference.
- Radius is marked yellow and circumference is marked red.
- Take one yellow cord, pull it towards the centre-post and loop it over the fixing screw on top as in figure 2. Fit spreaders in this order. 1, 4, 2, 5, 3 and 6 fixing the opposite spreader each time avoids undue strain on the centre post. Repeat for the other spreader pairs.
- Take the red circumference cord and attach it to the tip of the adjacent spreader as in figure 3. This can be done in number order, 1, 2, 3, 4, 5 and 6.
- ***This completes assembly of the Hexbeam frame.***

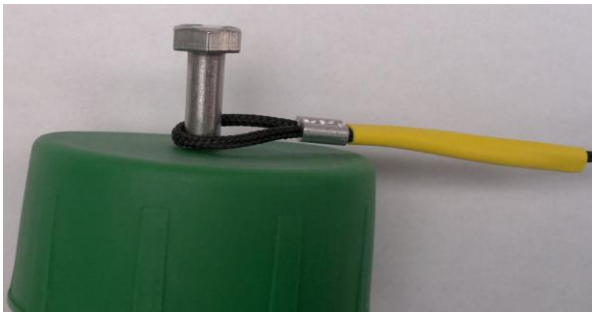


Figure 2

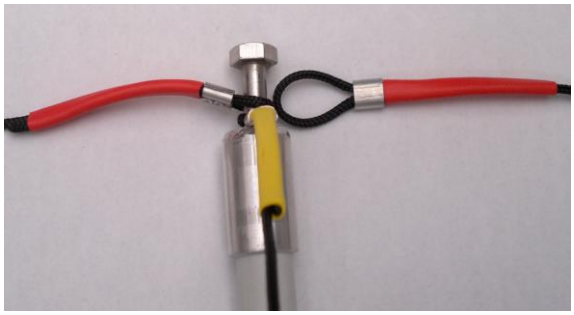


Figure 3

4 *Installing the wire elements*

CAUTION: when tightening the nuts on the feed screws on the centre-post it is very important that the screw itself does not turn. Always hold the nut nearest the post firmly with a 7mm spanner or snipe-nosed pliers whilst tightening the outer nut onto the wire element connector tag.

1. All the elements are pre-cut and come with the separation cords fitted. NO adjustment is needed
2. **IMPORTANT! 20M Wire Element.** Since 11/9/2014 I have upgraded the wire/cord insulators and I am unable to find suitable D-loops for the insulator's to pass through on the 20m band. Please see fig 6, 7, 8 & 9 for instructions for fitting the 20m band wire elements.
3. Start with 6M (or the highest band of your hexbeam if omitting any bands) and unravel its wire element.
4. MAKE SURE THERE IS NO TWISTING OF THE ELEMENTS OR SEPERATION CORDS.
5. Stand facing the feed screws on the centre post. Feed one end of the wire element towards you through the D-loop on spreader number 1 on your left and connect it to the left-hand feed screw on the centerpost **Remember not to let the feed screw turn.**
6. Take the other end of the wire element and feed it through D-loops 1, 2, 3, 4, 5 and 6 until you arrive back at the centre post, connect this end to the right-hand feed screw in the same manner as before.
7. Repeat for each of the other elements. If you find that the elements are too short or too long with too much slack in them then slightly adjust the position of the cleats. Move all six cleats for the band in question a *little* – do not simply move one or two otherwise symmetry will be lost.
8. **IF POSSIBLE LEAVE THE HEX ASSEMBLED FOR 24 HOURS BEFORE ADJUSTING ANY CLEATS**
9. The front of the Hexbeam is between number 1 and 6 as marked with the YELLOW arrow in figure 4 below.

Note that each wire should have a little slack – ie not pulled taught. Ensure however that they are not so slack that the ends joining to the feed screws are sagging!

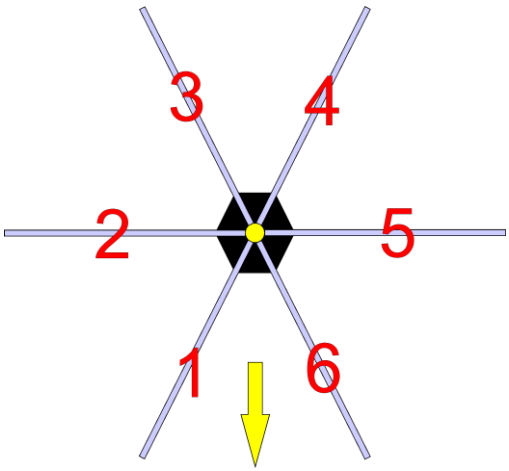


Figure 4

Figure 5

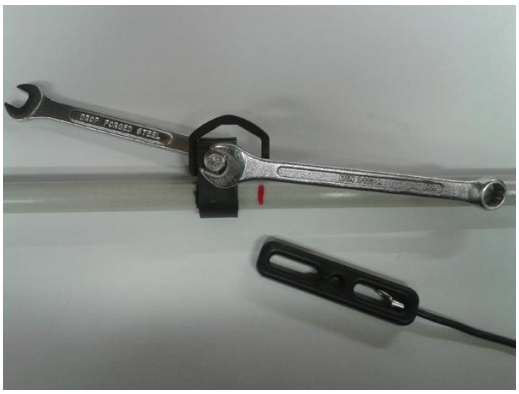


Figure 6

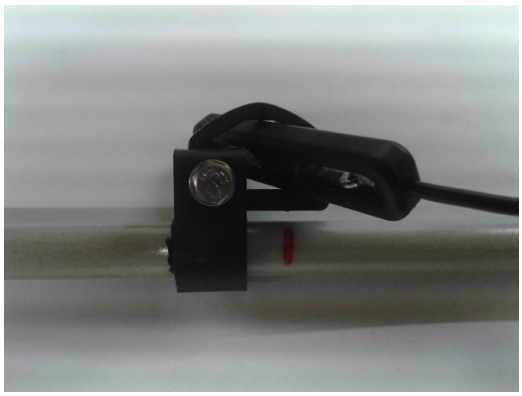


Figure 7

Figure 8

Figure 9

Figure 6

The 20m Cleats are located at the very end of the spreaders. Use 2 x 8mm spanners to undo the nut and bolt

Figure 7

Slide D-Loop forward and pass the wire element and insulator through the loop

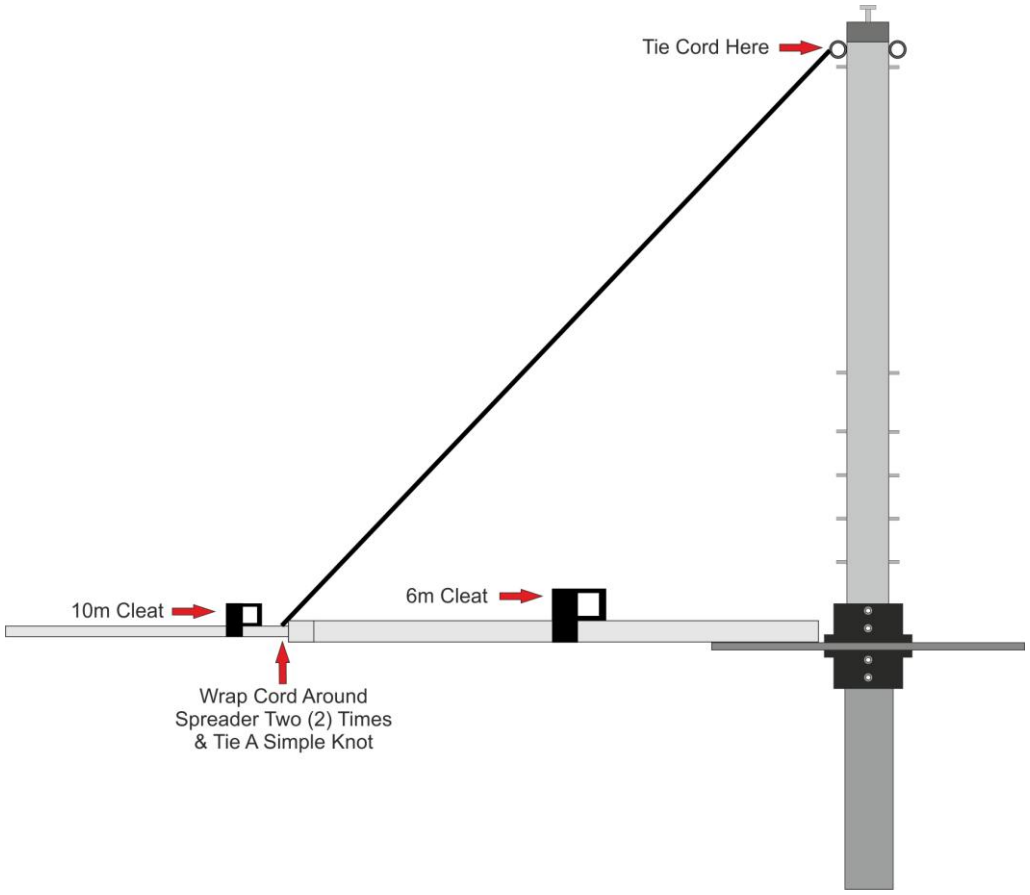
Figure 8

Place the D loop back in its original position shown with the red mark in the picture

Figure 9

Tighten the nut and bolt with 2 x 8mm spanners

5 Fitting the optional ice-Cords



If you have the purchased the optional Ice-Cords then fit them as per illustration above.
This is the last job to complete before erecting the Hexbeam in its final location. I do not recommend fitting the cords for portable events as once the cords are tied on then the only way to remove them is to cut them off. The cords should not be too tight as they are there to give extra support for ice build-up or any extra weight that is put on the Hexbeam at any time. Tie 3 of the supplied cords to one of the stainless steel eyes on the top of the centre post and the remaining 3 to the other stainless steel eye.

6 Connecting the feed-line to the centre-post

A SO-239 or N-Type socket has been fitted to the rear of the centre post for convenient connection of any 50 Ohm type coaxial plug.

7 Testing

1. Check the SWR with an antenna analyser, if you don't have one then use your transmitter and an SWR meter.
2. Point the beam towards where there are fewest obstructions. The SWR will probably be quite high while close to the ground but you will get an indication of each band's centre frequency and confirmation that each band is resonant.

Thank you for purchasing the G3TXQ Broadband Hexagonal Beam. I hope this assembly manual was clear, precise and helpful. If you have any questions please address them direct to me by e-mail at:

mw0jze@g3txq-hexbeam.com

I would especially like to thank G3TXQ for his painstakingly detailed work involved in designing this beam, and I acknowledge with gratitude his considerable contribution to the world of amateur radio.

Good DX de Ant MWØJZE

mw0jze@g3txq-hexbeam.com

Notes

Many thanks for choosing the G3TXQ Hexbeam from MW0JZE.

I hope that this manual was helpful and that you are happy with your purchase. If you have any problems now or in the future please be sure to contact me ASAP.

Would you be able to spare me five minutes of your time? Eham is a fantastic website where amateur radio operators can leave real reviews and opinions. Simply go to my website www.g3txq-hexbeam.com and click on the eHam logo as highlighted with the red arrow.

Real reviews and opinion's are important to other amateur radio operators when choosing a new antenna, radio and other equipment. Many thanks for your time. 73's Ant MW0JZE