

Dual Beam Pro Rotatable Multi-Band HF Antenna



Assembly Instructions

Pro Antennas © 2018

Dual Beam Pro Assembly Instructions

Thank you for purchasing this unique antenna product. We hope that it will provide you with many hours of operation and pleasure for years to come.

Please take a little time to carefully follow the instructions and study the pictures to help understand the correct positioning and alignment of various components.

Contents

The packing tube should contain:

- 2 x 1 inch diameter alloy 2.5m main element sections complete with end caps and capacity hat securing bolts
- 2 x 3/8 inch diameter alloy 2.5m capacity hat elements
- 1 x GRP rod centre support insulator

The small box should contain:

- 1 x matching transformer complete with mounting jubilee clip
- 2 x matching transformer connection strips
- 1 x galvanised mast head support clamp
- 4 x 35mm M6 bolts with serrated nuts
- 4 x capacity hat element end caps
- 1 x self amalgamating tape for sealing the cable connector

Tools required

A flat head screwdriver, 10mm and 13mm spanners

Safety

The GRP rod can cause skin irritation and protective gloves are recommended

Ensure you have a safe working area of at least 5m x 3m
Abide by the Work at Height Regulations for installation

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Specification

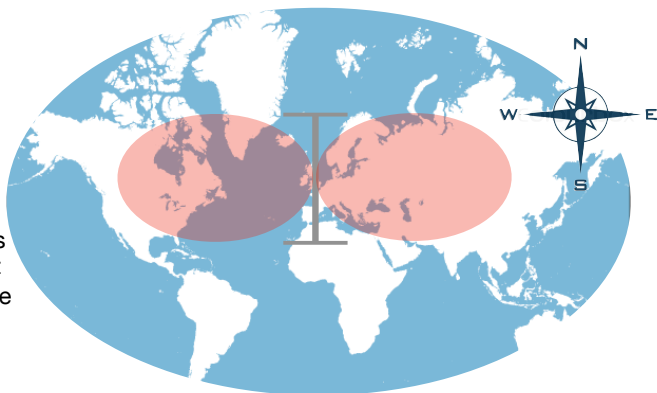
The Dual Beam Pro is a non-resonant dipole with capacity loading end elements. Aerospace alloy is used for the elements and the fasteners and clamps are galvanised for excellent corrosion resistance.

Overall span of main rotatable element	5.0m
Overall span of end elements	2.5m
Turning radius required	2.6m
Total weight including clamp and transformer	4.0kg
Support mast diameter range	32 - 50mm
Maximum peak envelope power 20m - 6m	1000W
Maximum peak envelope power 40m & 30m	600W

This antenna requires an ATU to minimise the reflected power. For 40m and 30m operation, the ATU built into most modern HF transceivers is unlikely to have a sufficient matching range and an external ATU will be required.

Alignment

The Dual Beam Pro may be mounted on a mast rotator or pre-aligned in the preferred directions of coverage. The diagram below shows the antenna aligned to beam maximum energy East and West.



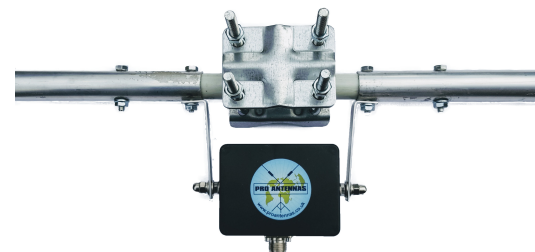
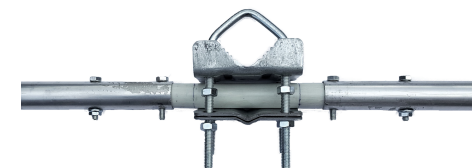
Note: this diagram is indicative and is not an azimuth plot of the Dual Beam Pro's radiation pattern

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Assembly

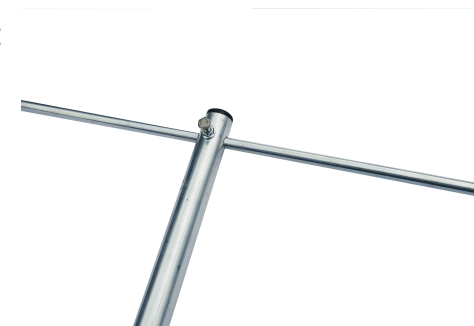
1. Insert the GRP rod through the section of the mast head support clamp but do not tighten the clamp at this point.

2. Fit the main elements onto the ends of the GRP rod and align the bolt holes. Ensure that the capacity hat securing bolts are facing upwards before inserting the 4 x 35mm bolts and fitting the serrated nuts to the 2 outermost bolts.



3. Fit the 2 connection strips to the matching transformer and offer up the assembly to the 2 innermost bolts. Fit the serrated nuts finger tight.

4. Slide a capacity hat element through the hole in the outer end of a main element section. Centralise the capacity hat element using the scored alignment marks and tighten the securing bolt by no more than 1/2 turn.



Fit the plastic end caps and repeat step 4 for the other capacity hat element.

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Connection



Your co-axial cable can now be fitted to the matching transformer with a PL259 connector. Seal the connector against moisture using the self amalgamating tape. Wrap the tape tightly from the socket to the plug.

Installation

Lift the antenna onto the support mast, passing it through the matching transformer jubilee clip and the mast head clamp. Ensure that the mast head clamp is still central on the GRP rod and that the capacity hat elements are horizontally aligned before finger tightening the mast head clamp bolts.

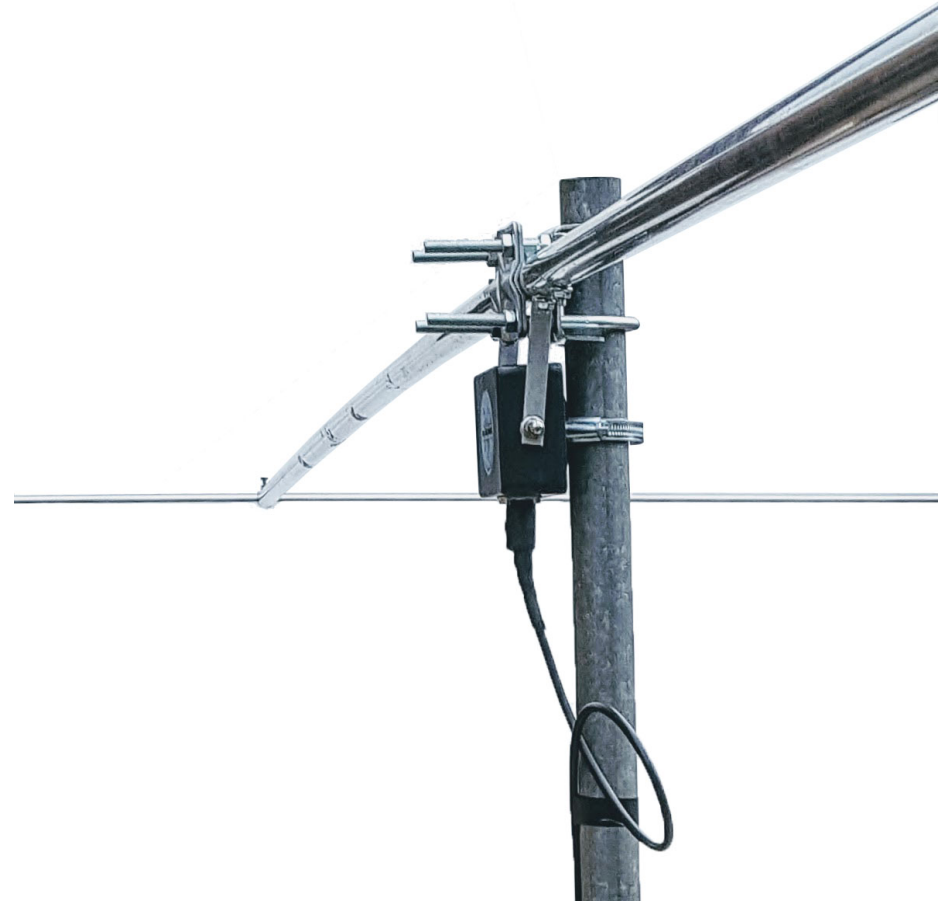


Form a small loop prior to taping the coax cable to the support mast using PVC insulating tape. If you are using a rotator, ensure there is enough slack in the cable to allow the mast to rotate without restriction.

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Alignment

The antenna should now be aligned to give maximum coverage in the desired directions before fully tightening the mast head clamp bolts.



Finally, check that all the main element bolts, matching transformer connection strip nuts and the jubilee clip are tight.