DMV-II
80m
V Antenna

Assembly Instructions

DMV-II
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.

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

Components

Support assembly
1 x Glass reinforced plastic (GRP) rod (330mm)
2 x Aluminium tubes (300mm) with end plugs
1 x Large 8 nut clamp
1 x Mast-boom clamp assembly

Antenna elements
1 x Coax connection box & attached primary element wires
2 x Telescopic poles
2 x Black 80m Loading coils
2 x Short bungee cords with ball toggles
2 x Large twist cable clips
2 x Medium twist cable clips
2 x Secondary element wires
8 x Secondary element wire extensions

Options (if purchased)
2 x Blue 60m / Yellow 40m Loading coils

Tools required
10mm and 13mm spanners

Colour coding

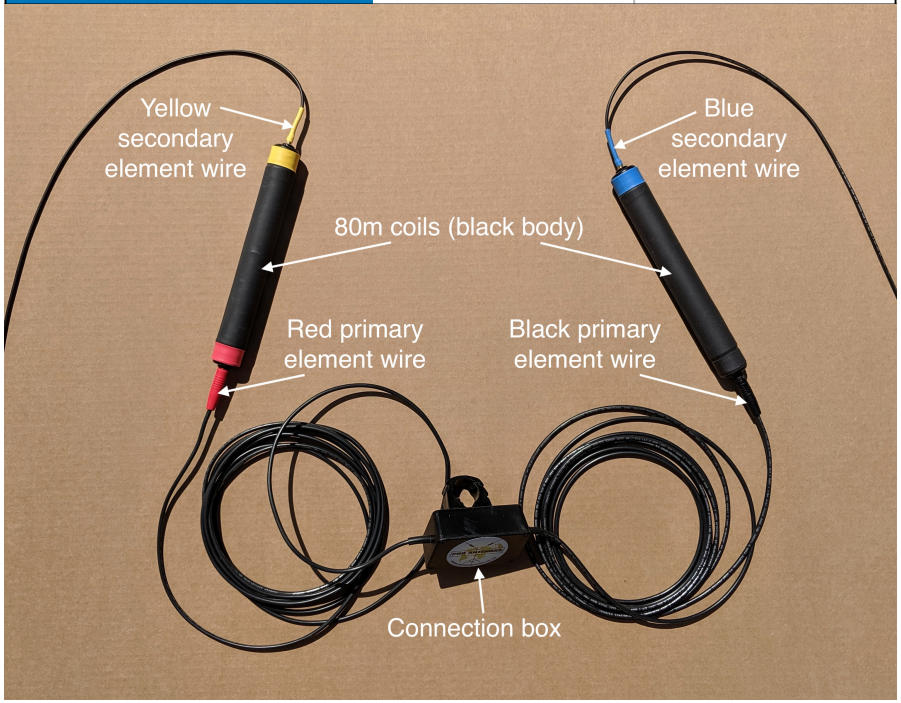
Please note the secondary elements are asymmetric and colour coding is used to ensure the correct connection of all the elements.

Loading coils

Band	80m	60m	40m
Body Colour	Black	Blue	Yellow

Connections

	Element A	Element B
Primary wire	Red	Black
Secondary wire	Yellow	Blue
Extensions	White	White



Initial Assembly

Caution: Always wear protective gloves when handling the GRP rod to prevent skin irritation.

i. Attach the mast-boom clamp assembly to the GRP rod by passing the studs through the holes, placing the aluminium strip over the studs and securing with the M6 nuts.

ii. Position the 2 aluminium tubes in the mast to boom clamp and secure by tightening the wing nuts so that the aluminium tubes form a V with the clamped ends at the bottom.

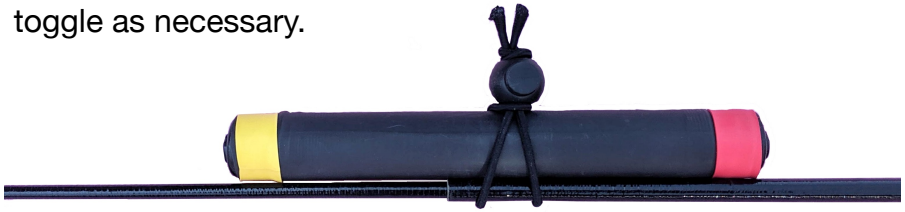
iii. Remove the protective cover from the top of the GRP rod and slide the coax connection box clip onto the tube. Ensure the Pro Antennas label is the right way up and that the box is on the opposite side of the GRP rod to the mast-boom clamp assembly. Replace the protective cover on the top of the GRP rod.

Note: The support assembly from steps i - iii does not need to be taken apart to use the antenna in another location. It can be transported as a complete unit.

Assembly

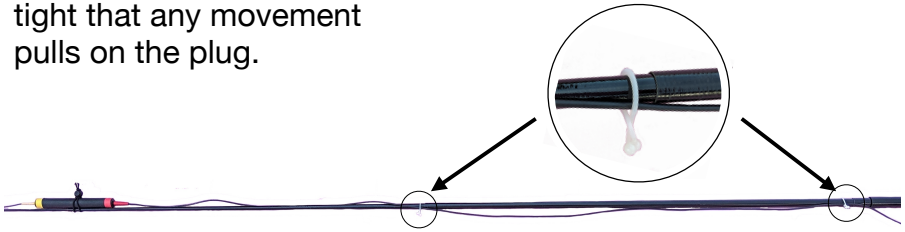
If your mast can be lowered to allow work at ground level, the support assembly can now be attached to the mast by clamping the large 8 nut clamp to the mast and tightening the back plates to hold the bottom of the GRP rod. Otherwise, the antenna elements will need to be set up first and the complete installation clamped to the mast in situ.

1. Remove the top bung of the first telescopic pole and fully extend the smallest section. Lock it in position with the second section using a gentle pull and twist
Caution: The smaller sections of the telescopic poles are fragile and may break if bent too far.
Slide out the second telescopic pole section and attach a loading coil by wrapping a short bungee cord around the centre of the coil and the smaller end of the second section before looping the end of the cord around the ball toggle. Tighten with the ball toggle as necessary.



2. Attach the correctly colour coded (yellow pictured or blue for the other side) secondary element wire to the smallest telescopic pole section by sliding the grommet to the midpoint of the smallest section and sliding the small tube over the end of the section. The remaining secondary element wire will hang from the end of the pole. The secondary element wire can now be plugged into the matching coloured end of the loading coil. Ensure that the wire is not so tight that any movement pulls on the plug.

3. Plug the main element wire (from the connection box) into the matching coloured (red or black) end of the loading coil and extend the third and fourth telescopic pole sections using the supplied clips to hold the primary element wire against the pole. The clips should be located at the larger ends of sections 2 & 3 respectively, and the ends twisted together to lock. Note: The plugs will pull out under tension to avoid damage. The primary element wire should not be so tight that any movement pulls on the plug.



4. Repeat steps 1 - 3 for the second telescopic pole.

5. Unscrew the telescopic pole end caps and remove the polystyrene bead. Take care to ensure the smaller poles do not slide out. Wrap a few turns of the primary element wire around the pole and then slide the telescopic poles fully over the aluminium poles of the support assembly. Fully extend and lock the remaining sections.
For a permanent installation, tape can be used to keep the wire close to the poles. For temporary installations, this is not necessary and some looseness of the wires will not affect performance.

6. The feeder coax can now be attached to the connection box and, if not already done, the antenna assembly may be clamped to the mast.

The DMV-II is a lightweight antenna with little wind loading but normal precautions should be taken to secure the mast to prevent it blowing over. The radiation pattern is generally omni-directional and a rotator is not required.

The antenna is designed to be resonant on the required frequency and fine tuning of the centre frequency is achieved by adding the secondary element wire extensions. The setup is described in the next section.

Set up

With no secondary element wire extensions attached, the DMV-II is designed to be resonant at the top of the 80m band (or 60m band with the option coils). This frequency is dependent on the terrain and the height above ground. The extension wires will move the resonance down into the required part of the band.

The secondary element wire extensions are provided in 2 each of 5, 10, 20 & 40cm lengths and may be cascaded to give any length up to 75cm in 5cm increments. As a rule of thumb, at 80m, adding 5cm to each side will decrease the resonant frequency by around 20kHz. The sides can be unbalanced by 5cm to give more resolution if necessary.

Before first use, start with the 10cm extension wires and find the resonant frequency using an antenna analyser or an SWR meter and low power from your transmitter. Adjust the lengths of the secondary wires until you have the best SWR at the required frequency.

Once you have found the appropriate lengths for the frequency you want to use, it is worth noting this as a starting point for subsequent setups.

Note: the set up can be done at a lower height so that the secondary wires can be adjusted from the ground but raising the antenna will shift the resonant frequency up 10-20kHz and this should be allowed for.

Specification

The DMV-II is a resonant V dipole with loading coils and hanging secondary elements with fine tuning extensions.

Overall span of main elements	c 8.0m
Total weight including mast clamp	3kg
Support mast diameter range	32 - 50mm
Maximum peak envelope power	500W

A mast height of 3 to 5m is ideal for DMV-II operation.

Extension length records

Use this table to record the required extension wire lengths for your favourite frequency bands for quicker repeat setup.

QTH	Mhz	Ext A cm	Ext B cm

Configuration schematic

(Not to scale)