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SuperVertical SV5/SV6 80-60-40-20-15-10- 5KW



Assembly instructions

Chapter first editing

1) In photo n ° 1 we can see the RF box and its housing. Mount the 50cm pipe through the insulator to the 100cm pipe, Insert the 6x60 bolts in the two most distant holes. Then insert the RF box into the two closest holes. It is recommended to use two 10 mm wrenches, with one, hold the nut behind the box and with the second tighten the nut to the aluminum barrel.

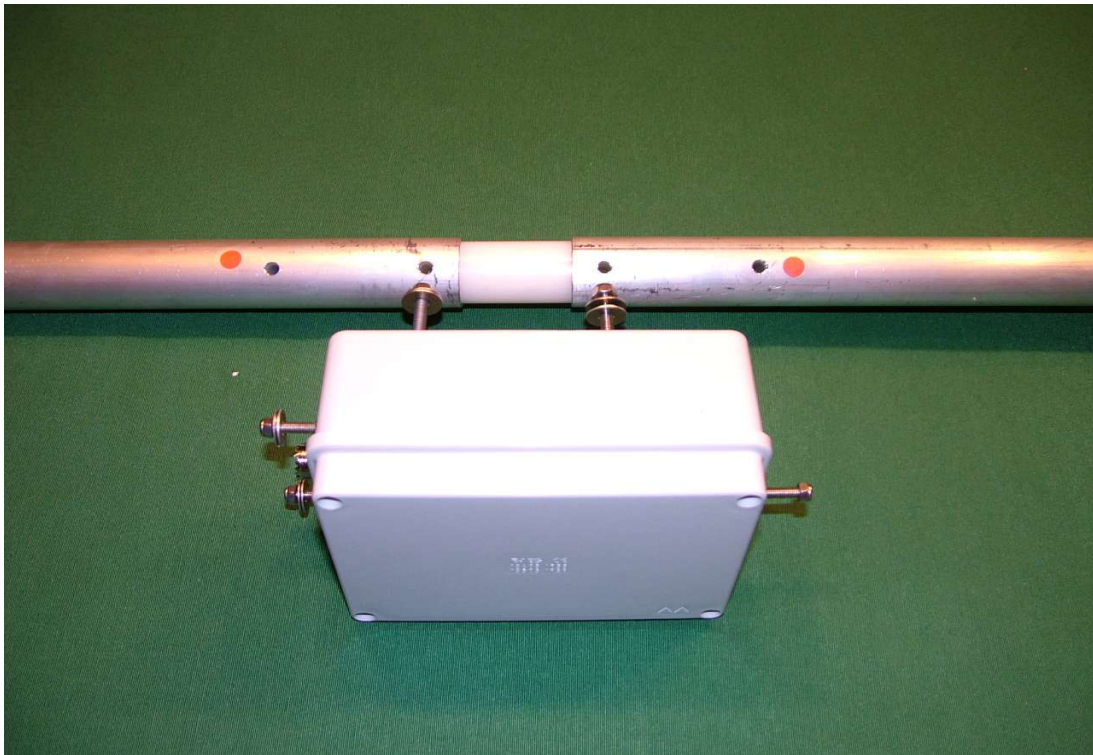


Foto 1

- 1) 1) The second stage of assembly is to connect the 50mm x 100cm pipe via the insulator to the 50mm x 150cm pipe. To do this, just match the holes in the insulator with the holes in the aluminum barrel.
- 2) 2) Attention on the insulator there is a groove to let the water flow, it must be mounted in the upper part of the pipe towards the 50mm x 150 cm.

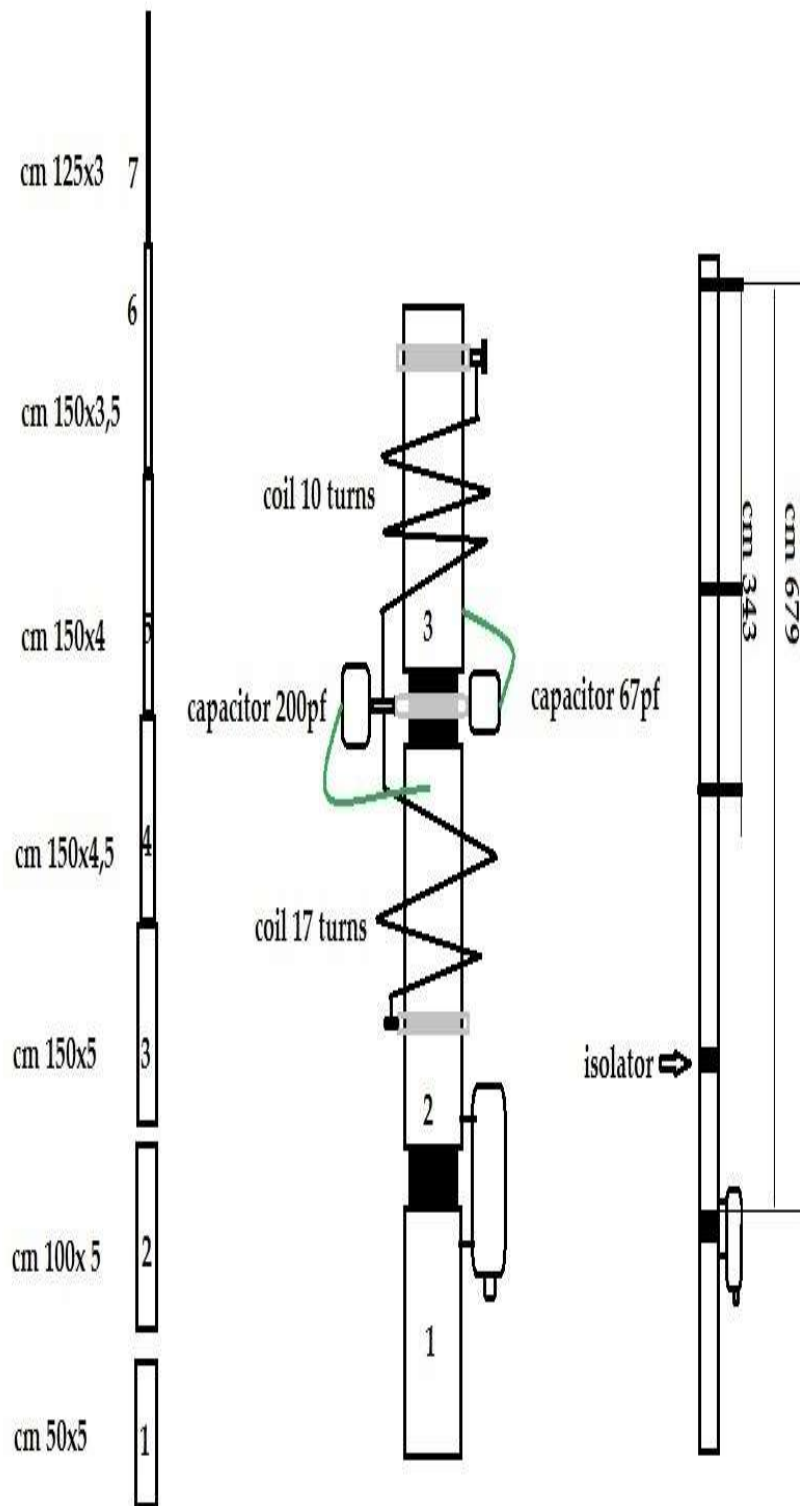


Foto 2

- 3) 3) Now take the 80m and 40m coil and insert them into the tube as in the photo, then take the clamp with the condenser and fix it to the center of the insulator and fix the coils, all as shown in the photo. The 17 turns coil is mounted on the 50mm x 100cm tube, the 10 turns coil on the 50mm x 150cm tube. photo N ° 3 and diagram



FOTO N°3



SCHEMA N° 1

- 4) 4) At this point we can mount the telescopic part of the antenna, respecting the drilling to size of the antenna as photo PHOTO 4/5/6



FOTO 4



FOTO 5



FOTO 6

Third step for assembling the resonant element 15m

5) 5) Mount the 35mm diameter aluminum collar with the aluminum spacer and the steel wire in the upper part of the 35mm x 150 pipe immediately above the clamping bolt of the 35mm pipe with the 30mm one, check the diagrams N ° 1. The measurement of 679 cm from the second uppermost insulator is only indicative and may vary by a few cm without compromising operation.

6) 6) Assemble the steel wire using the insulated spacers as in diagram n ° 1. The size of the wire determines the resonance of the 15m band. The measure in the diagram is indicative because it varies according to the ground floor. The wire is longer so you can adjust the resonance point to your liking. In the following photos the way of assembly





Fourth phase assembly of the last element 30mm x 120

The final element has 3 holes to adjust the resonance of the antenna in 20 and 10 m. The central hole is the one that is the best in most cases.

Final phase elevation and calibration

Now we can raise the antenna by remembering to put at least 3 tie rods about the middle of the antenna. The simplest way to install the antenna in the garden is to drive a stake into the ground. Two people are enough to lift it, not so much for its weight which is only 10KG, but for its possible oscillations.

In both ground and roof installations, remember that the antenna must be blocked under the RF box in the first 50cm of the pipe. In ground installations, the antenna must remain close to the ground see Photo



Construction of the ground floor. On this topic we can find a lot of useful information on many amateur radio texts. A good ground plane will allow our antenna to have an excellent performance. For ground installations it is recommended to have as many radials as possible around the antenna feed point. These do not necessarily have to be a $\frac{1}{4}$ wave, then we can add other $\frac{1}{4}$ wave radials according to our possibilities. For roof installations the radials must be resonated. The radials must be connected to the 50cm tube at the base of the antenna.

Fifth phase of antenna calibration

- 1) 1) Start moving the lowest coil, that of 80 meters, up or down along the tube until it reaches the desired frequency
- 2) Example: if the antenna resonates at 3700 and you want to go up to 3750, the coil must be moved downwards; vice versa, if the antenna is to be resonated at 3650, the coil must rise upwards. (NOTE: remember that to make the coils move you must loosen both bolts that are on the steel U bolt by raising or lowering but trying to always place the coil equidistant from the central tube. Once the desired resonance frequency has been reached, tighten the bolts permanently. The reel displacement should be a few millimeters at a time.)
- 3) Now we can move on to the 40m spool; To do this, move up or down by loosening the screws on the U-bolt. If it is moved downwards, the antenna decreases in frequency, if it rises, vice versa it increases in frequency
- 4) The 20m resonates according to the total length of the antenna, following the assembly instructions the 20m are in band

Attention use 75 ohms cable supplied for 20m connected to the RF box

The 15m following the assembly instructions listed above can be adjusted in frequency by changing the length of the steel wire

Following the assembly instructions listed above, the 10m can be adjusted in frequency by changing the length of the antenna, extending or shortening the total length using the 3 points on the aluminum tube 30mm x 120 cm

5)

The last calibration to be performed must be done using a coil to be fixed to the two bolts next to the antenna connector on the RF box. Wrap 8 to 16 coils of 1.5mm electric cable tightly and tightly together on a plastic support with a diameter of 40mm. The number of turns is determined by the ground floor and therefore varies according to the situation. Found the correct number of turns, lock the coil to the RF box. The insertion of this coil could shift the resonance, so it may be necessary to fine-tune the antenna as described above. The insertion of this coil is very important, because it best adapts the impedance of the antenna and the short circuit. So even if the SWR of the antenna is already low it would be better to insert it.



6) Switch cw /rtty/ssb



The last calibration to be performed must be done using a coil to be fixed to the two bolts next to the antenna connector on the RF box. Wrap 8 to 16 coils of 1.5mm electric cable tightly and together on a plastic support with a diameter of 40mm. The number of turns is determined by the ground floor and therefore varies according to the situation. Found the correct number of turns, lock the coil to the RF box. The insertion of this coil could shift the resonance, so it may be necessary to fine-tune the antenna as described above. The insertion of this coil is very important, because it best adapts the impedance of the antenna and the short circuit. So even if the SWR of the antenna is already low it would be better to insert it.

Antennas with the 60m band

The 60m band is obtained with the third position on the powered switch. Connect the third wire above the resonance point of the ssb part, move the clamp upwards until you find the resonance point at 5357.

summarizing

- 1) switch not powered antenna in the cw part**
- 2) switch to the first antenna position in digital**
- 3) switch in second position antenna in ssb**
- 4) switch in third position antenna in 60m**
- 5) in 40m only the first position could be enough to cover the whole band**

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