



MONO6 6
Monoband Yagi Antenna
50MHz



ASSEMBLY MANUAL

Momobeam

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Please, carefully read this assembly manual before starting to assemble the antenna.

Thank you for purchasing a Momobeam antenna! This manual will guide you to the correct assembly and mounting of your new antenna. Momobeam designs are based on the latest versions of computerized simulations and confirmed by field tests. Momobeam antennas are very easy to assemble thanks to the grouping and labeling of components. Please be considerate your environment by disposing of all waste in proper, climate safe locations, if you can, recycle the packaging.

Momobeam Limited Warranty and Liability

Momobeam warrants to the original purchaser that this product will be free from defects in material and workmanship for a period of two (2) years from the date of purchase. Momobeam will solely determine whether a part will be covered by this limited warranty and whether a part will be repaired or replaced. Such determination will be made following the evaluation of alleged defect. Momobeam will evaluate if misuse, abuse, unauthorized modifications, extreme weather conditions or improper installation occurred. This warranty does not cover delivery, transportation, installation or any other cost that may be incurred from any defect. Shipping costs for any repairs, replacements or returns will be paid by the buyer and must be prepaid. Before proceeding with the evaluation, Momobeam will have to receive appropriate documentation that helps identify any defect. The purchaser, final customer, installer and user of Momobeam products acknowledge that these products can cause injury or death and accept full responsibility and liability for any and all damage to persons and to property (direct, indirect and punitive) caused during installation and subsequent use.

Warning

Do not install this antenna where there is any possibility that the antenna or any part of the supporting structure could come in contact with power lines or any electric circuit. If the antenna comes in contact with electric circuits, this could result in electric shock or loss of life. Also ensure that no people or pets can come in any contact with the antenna after it is installed. Dangerous voltages can exist on the antenna when it is in operation and no part of the system is insulated to prevent electric shock. Momobeam antennas are not designed to be used as support structures. Persons or objects should never be supported by or suspended from the antenna structure. It must be taken into account that falling parts may cause a hazard to people, animals and property on the ground below.

Disputes For any dispute, only the Marsala - Italy headquarters is your point of contact and has the final authority.

Momobeam antennas are designed and manufactured in Italy

Contact If you have any questions regarding the assembly or operation of this antenna, please contact Momobeam:

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Assembly suggestions and materials

Momobeam antennas is made of aluminum tubes, aluminum straps for phasing lines, stainless steel hardware (bolts, nuts, washers, U-bolts, saddle clamps), POM-C UV-Resistant driver element insulators and polypropylene clamps. Stainless steel is very sturdy, but sometimes you might experience hardware seizure when you tighten or loosen some stainless steel parts. The seizure is mainly due to the chemical nature of the material that undergoes a sudden heating of surfaces due to friction during assembly. If this happens, a nut can become seized and it becomes necessary to force the tightening until the bolt breaks and then proceed with its replacement.

Spare parts (selected items) are included in case of loss or damage that might occur during assembly or installation.

It is strongly recommended that you lubricate stainless steel hardware before tightening it to prevent seizure. Penatrox (or similar) is the recommended lubricant.

Prior to assembly of any stainless steel hardware (screws) the threads should have a lubricant applied. If you are removing a stainless steel nut that has been installed, it can help to apply a lubricant before removing it to prevent seizure. If during the removal or tightening of a nut you feel a lot of resistance, stop immediately and apply a lubricant. After that, work the nut in the opposite direction to allow the lubricant to work.

Do not over-tighten. Extreme force is not required in the assembly of this antenna! Once hardware begins to seat firmly, it only takes a few more turns to properly secure parts. The self-locking nuts provided will prevent hardware loosening.

When securing clamps and U-Bolts, apply even torque between the bolts.

To make the antenna assembly operations easier, equip yourself with two saw horses or large flat surface. The shipping container makes a useful flat surface that can be placed between the saw horses for the assembly process.

The boom is marked for simple assembly and marked for element placement/alignment (A, B, C, etc. notations) and the center of the boom is labelled for quick positioning of the boom-to-mast mounting plates.

Each element is labelled and its parts are bundled together and/or telescoped.

Hardware is packaged in labelled bags.

Some parts (like driver element center sections) come pre-assembled.

This makes the assembly of Momobeam antennas very easy and intuitive.

The Momobeam RF choke (supplied) is placed between the coaxial feed line and the feedpoint. Any high quality choke used should not have lead lengths longer than 2 inches.

NOTE: Reference to Standard American English (SAE) or Imperial units are approximate where noted.

Assembly advice

Momobeam Yagi antenna **MONO6 6** is made of aluminum tubes, stainless steel hardware (bolts, nuts, washers), galvanized steel hardware (Ubolts and clamps, nuts, washers) POM-C UV-Resistant driver insulators and polypropylene clamps.

Stainless steel is very sturdy, but sometimes you might experience seizure when you tighten or loose some stainless steel parts. The seizure is mainly due to the chemical nature of the material that undergoes a sudden heating of surfaces due to friction during assembly. If this happens, a nut can become seized and it becomes necessary to force the tightening until the bolt breaks and then proceed with its replacement.

It is strongly recommended that you lubricate stainless steel bolts before tightening it to prevent seizure.

If you are removing a stainless steel nut that has been installed, it can help to apply a lubricant before removing it to prevent seizure.

If during the removal or tightening of a nut you feel a lot of resistance, stop immediately and apply a lubricant. After that, work the nut in the opposite direction to allow the lubricant to work.

We recommend tightening the hardware by hand.

Please, do not over-tight. Extreme force is not required! Once hardware begins to seat firmly, you only need a few more turns to properly secure parts.

Self-locking nuts provided will prevent unscrew due to the vibrations.

Pay attention when securing clamps and U-Bolts. Make sure you apply even torque between the bolts.

To prevent losing parts after accidentally dropping them, we recommend to assembly Momobeam antennas on a large flat area.

When you are working on the top of a pole or tower, please be careful and use appropriate harness. It is recommended that this operation is done by a professional installer.

To make the antenna assembly operations easier, it is advisable to equip yourself with two saw horses.

Each element is labelled and its parts are bundled together and/or telescoped. Hardware is packed in labelled bag.

Some parts comes subassembled.

This makes the assemble of Momobeam antennas very easy and intuitive.

The antenna is a direct 50 ohm feed through a single coaxial cable connected to an RF Choke (included).

Tools Supplied by Momobeam

Allen/hexagonal tools are used for the bolt heads. Nylock nuts use sockets.

Suggested additional materials: Protective gloves; anti-seize compound (Penatrox).

NOTE: There will be additional hardware items remaining after final assembly (Spare parts).
Also included is spare element tubing.

SPECIFICATIONS

BAND	6 meters (50 MHz)				
Gain (dBi)*	17,3				
Gain free space (dBd)	9,55				
Front/back ratio (dB)	25				
Elements	6				
SWR <1.5:1	500 KHz				

Longest element: 301cm / 9.87 ft.

Boom length: 645cm / 20.21 ft

Closest element to mounting point: 60cm /23 inches

Turning radius: 400cm / 13 ft

Feed: 50 Ohm balanced – single coaxial cable

Mast diameter: 50mm / 2 inches (larger on request)

Wind area: 0,35 m²/3.76 sq ft

Wind survival:** 100 Km/h – 60 MPH

RF Choke: 2 KW rated included

Weight (excluding packaging): 9kg / 20 lbs.

* gain at 20m height on real ground

** maximum wind speed at which there is no permanent deformation of the antenna

STEP1 - BOOM ASSEMBLY

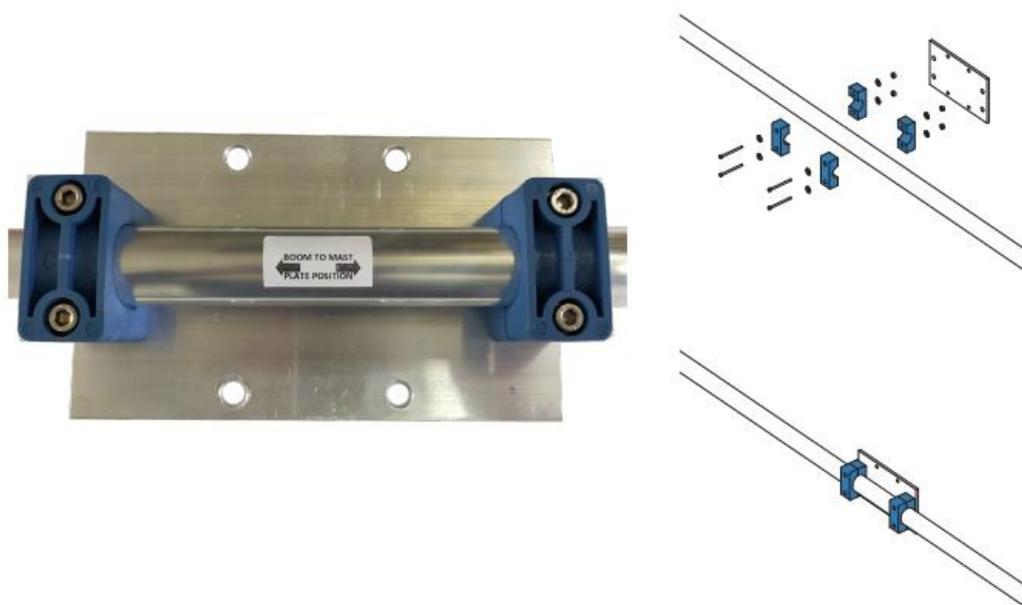
MONO6 6 boom is made of 5 telescopic aluminium tubes. The central part is $\varnothing 35$ round tube; the intermediate part are round tube $\varnothing 30$; the terminal parts are round tubes $\varnothing 25$ mm. The boom is telescopic so the terminal parts fit in the central part. The central part has 2 holes, one on each side. The terminal parts have one hole on one side. Boom parts are joined together with two bolts, two nuts and two washers in total. You can find hardware in the "boom hardware bag". Please note the labels.



STEP2 - BOOM TO MAST PLATE ASSEMBLY

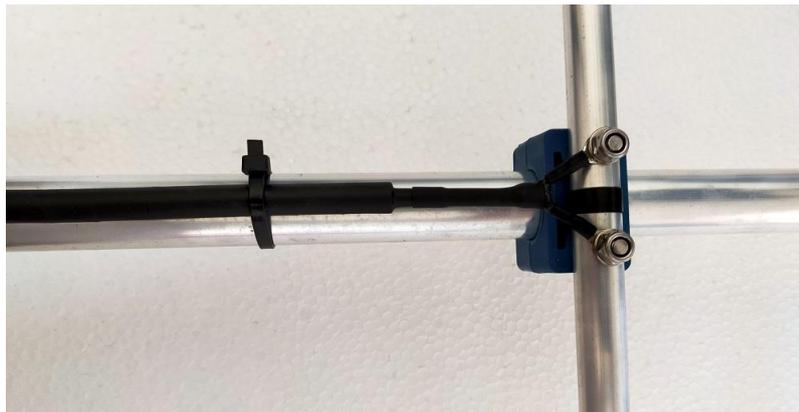
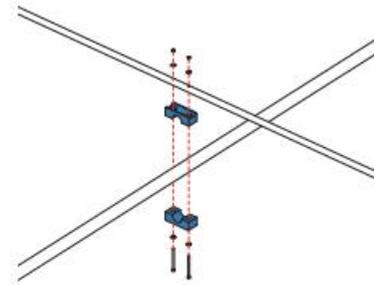
MONO6 6 boom to mast plate is made of one aluminum plate with 8 holes. External holes (on shorter sides) are for polypropylene clamps. Assembly clamps so that they "hug" the boom. Position the plate like shown in the picture below (250cm from boom start). The center of the plate must correspond to the center of the label on the boom central part. Firmly tighten bolts. Boom to mast plate must be mounted perpendicular to the ground.

Please note: A verification of the positioning of the elements on the boom must however be carried out by means of a measurement.



STEP3 - ELEMENTS ASSEMBLY

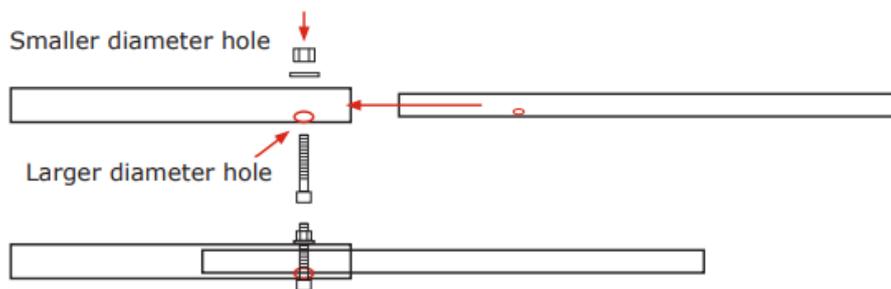
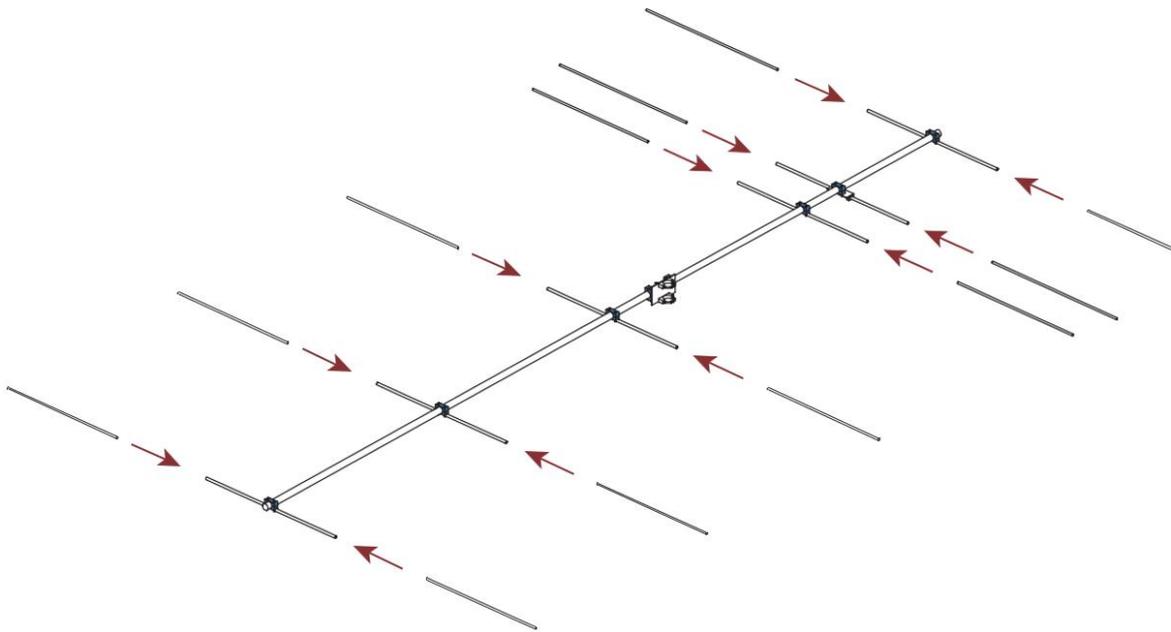
MONO6 6 is a six elements antenna. Each element is identified with a letter, from A to F. Each element is made of three sections that comes telescoped inside a larger one. The elements are made of two sizes of aluminum tubes, larger for the central section and smaller for the terminal parts, ranging from 12mm to 16mm diameter. Each of the 6 elements is labelled. Elements central sections comes preassembled with the boom to element plate or clamp.



Driver element "B" with Momobeam 2Kw RF Choke (included)

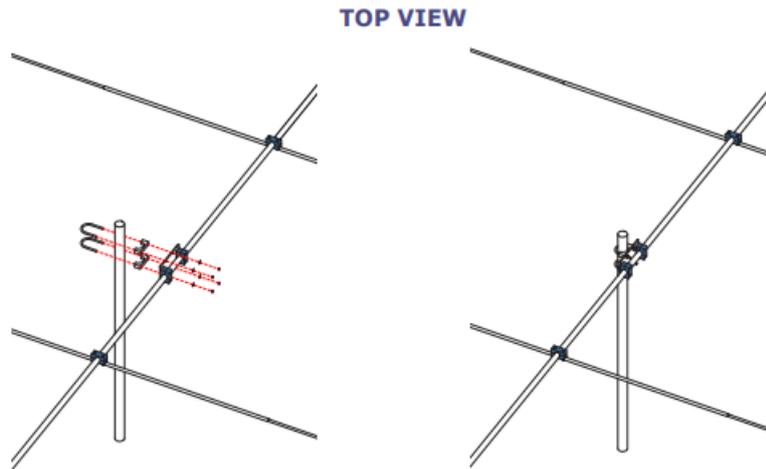
STEP 4 - ELEMENTS TERMINAL PARTS ASSEMBLY

You need to locate the terminal parts for each element by checking the labels. Slide the element terminal part into the correspondent central part until holes align. Please note that the central element part has two size holes. Secure the elements sections with one bolt, one washer and one self locking nut. **The head of the bolt must be inserted into the larger diameter hole**, thru the smaller diameter tube and it must exit thru the small hole in the bigger diameter tube on the opposite side. This creates a mechanical and electrical strong joint



STEP 5 - ANTENNA ASSEMBLY ON THE MAST

Now simply mount the antenna on the mast thru the two Ubolts provided. Ubolts and clamps must hug the mast and must be fixed to the boom to mast plate thru four washers and nuts. After you secure the antenna to the mast it might be necessary to align the elements so that they are perfectly aligned to the ground. Now it is time to firmly tighten elements bolts to the boom.



Now you must connect the coax cable to the element B thru a 1:1 RF Choke (included).
Your MONO6 6 is now fully assembled!

PROBLEMS AND SOLUTIONS

SWR significantly higher than indicated among "specifics"?

- Check the connections of the coaxial cable (connectors welding and cable continuity);
- Check the operation of the RF Choke. Also its wires should not be longer than 5 cm.
- Check all measurements and spacing.

If no errors are found in the measurements, it is likely that your new Momobeam antenna has been mounted at an insufficient height; or it is possible that there is an interaction with other antennas or metallic objects (if they are less than 3 meters away).

If it is not possible to increase the distance between the antennas, try to rotate the interfering antenna 90°.

You might experience seizure when you tighten or loose some stainless steel parts.

The seizure is mainly due to the chemical nature of the material that undergoes a sudden heating of surfaces due to friction during assembly. If this happens, a nut can become seized.

If this happens, it is necessary to force the tightening until the bolt breaks and then proceed with its replacement. It is strongly recommended that you lubricate stainless steel bolts before tightening it to prevent seizure.

In case of strong winds, please place the antenna so that the boom faces the wind.

This way you will avoid excessive stress on the antenna elements.