

VULCAN UAV



Vulcan MultiFrame

Mantis

Z Arm Assembly Guide



www.VulcanUAV.com

Thank you for purchasing the Vulcan Multiframe Mantis

The MultiFrame is a very strong, light, durable airframe, and is very straightforward to assemble.

Please follow these build instructions carefully, and we wish you many hours of safe and enjoyable flying!

SAFETY NOTICE

Multicopters can be dangerous and pose a significant risk of injury and damage to property. Always take all necessary safety precautions to avoid damage or injury to yourself and those around you!

Never fly near or over buildings, roads or people.

Always ensure you have plenty of space to fly with an uninterrupted view of your machine at all times.

Always stay well clear of moving propellers.

Before flying, always check your machine carefully.

Ensure all nuts, bolts and linkages are tight and cannot come undone.

Check your propellers are securely tightened, have no chips, cracks or dents and if they do, replace them as necessary.

Ensure all electrical connections are secure with good contacts, well insulated and cannot come apart.

Make sure all onboard equipment such as batteries, cameras or any other payload is properly and securely attached and cannot come loose, shake, vibrate or move around during flight.

Vulcan Mantis Z Arm Assembly Guide

The Mantis airframe is assembled exactly the same as a standard frame, the only difference between a standard frame and the Mantis, is the use of the Z arm.

This type of arm raises the motor and gives an uninterrupted clear forward view for the camera without props appearing in the shot, even during fast forward flight. It also is a great pilot aid, helping with machine orientation in the air, a notoriously difficult issue for multirotors.

No special flight controller setup is required when using Z arms, and they are a 'straight swap' upgrade for existing Multiframes.



Arms are available in black or red anodized finish, and come in 350mm or 440mm lengths. The 350mm Z arm is identical in length to the standard arm in a 900mm frame. A standard 1200mm frame uses 500mm arms, but the 440mm Z arm can be fitted to a 1200mm frame without detriment to flight characteristics, there is no need to change your existing 500mm arms. 440mm standard arms are also available giving a frame diameter of 1080mm and perfect symmetry of the frame.

Parts

Included with the arm itself are four brace plates, one for each side of the welded joints, and eight 25mm bolts with Nylock nuts and washers to secure them.

IMPORTANT!

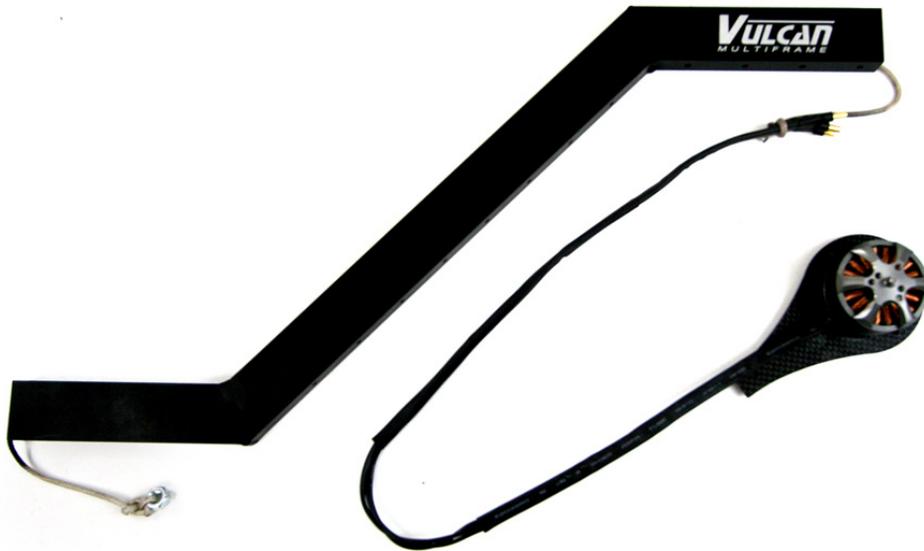
Never use the Z arm without the brace plates properly fitted. They not only provide extra strength and security for the welds, but also add additional stiffness to the arm and help minimise vibration and sideways flex.

Always protect your motor wires at the points where they go over the bends in the arm. We also recommend protecting wires where they pass any bolts and enter or exit the arm itself. This is very important, as if the wires move around (which they can), it is possible that over time the soft silicone covering on your motor wires could wear through and cause a short with potentially catastrophic results! Safety first always!

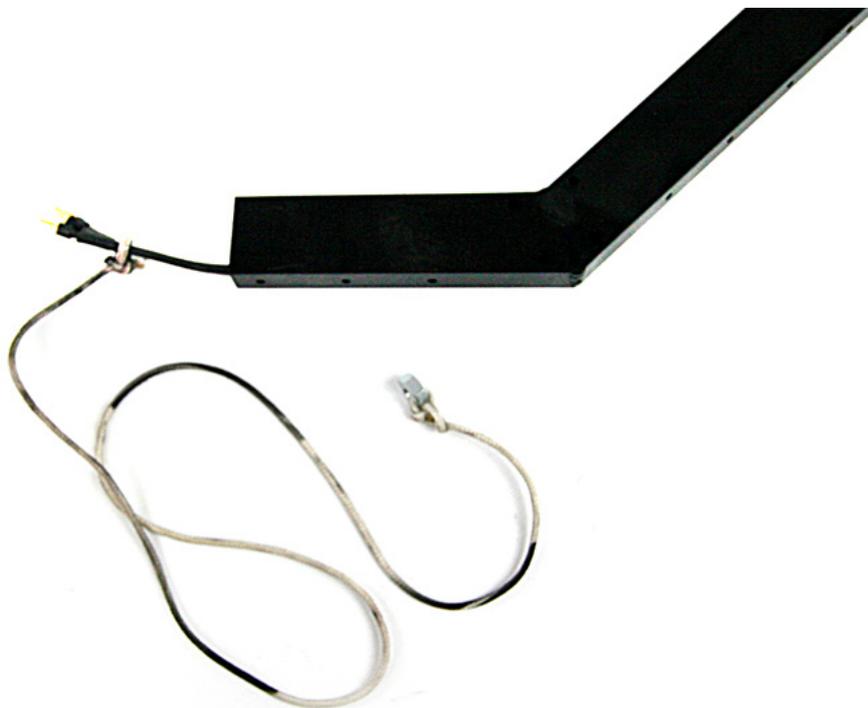


Once your motor wires are properly protected, fit the motor to the motor mount. Do not use motor mounting bolts longer than 8mm and use a washer.

Next you need to thread the motor wires through the arm itself. This is not easy with the bends in the arm, so we recommend using something flexible like string with a small weight on one end, and the other end tied to the end on the motor wires. See below.



Drop the weighted end of the string through the arm and tie the other end to your motor wires. Carefully help the motor wires through the arm by pulling on the string and moving the wires themselves at the top of the arm. DO NOT pull hard on the string! You may damage the connectors on your motor wires.

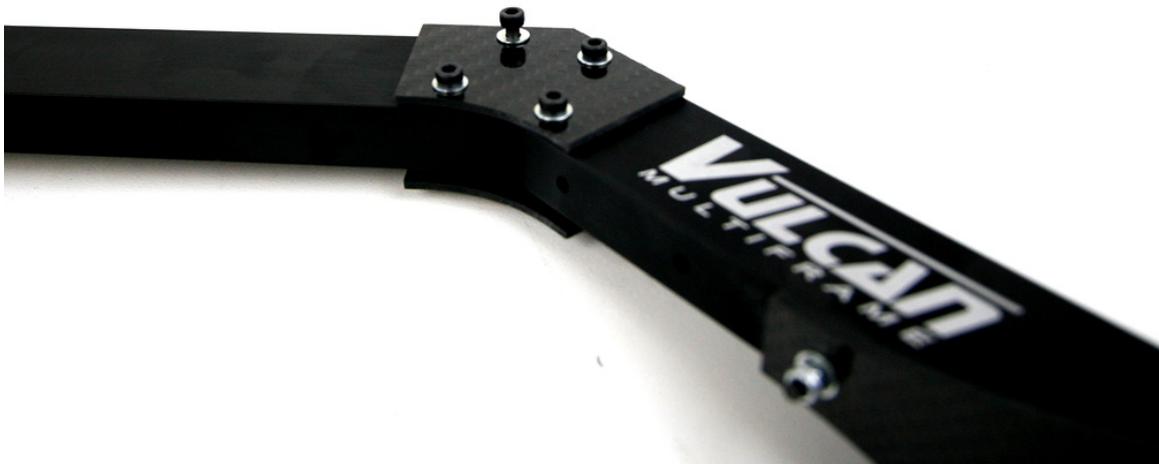


Once the wires are through the arm, remove the string and attach the motor mount and motor to the arm. DO NOT overtighten motor mount bolts!

Next you must fit the brace plates over the welds, one either side. These holes can be tight and bolts hard to align, but by turning the bolt you can use it to cut a tight fit in the carbon of the plate and aluminium of the arm.

IMPORTANT!

Ensure the two bolts on the inside of the bend in the arm go under the motor wires. By doing so you will help protect the wires from rubbing on the sharp edge of the inside of the bend, as they will rest on the bolts themselves.



Once all four bolts are in place, fit washers and nylock nuts to the other end and tighten. DO NOT overtighten or you risk damaging the arm!

Repeat the process for both bends in the Z arm.

That's it, you're done!

You can now fit the arm to your machine, please see frame assembly guide.

