Revo Build Instructions.

Please read completely before starting your build.

This document covers the Revo 4, Revo 5 and Revo 6. Please check you have the following in your kit:

Revo Parts List

1 x 3mm carbon upper arm
1 x 3mm carbon lower arm
1 x 2mm carbon top plate
1 x 2mm carbon bottom plate
1 x 1mm carbon FC cover

1 x aluminium tensioning post
9 x stainless steel M2 plain washers
8 x black fibre washers
5 x stainless steel M2 x 8mm cap head screws
5 x stainless steel M2 plain nuts
2 x dyneema rigging line

4 x aluminium motor mounts
8 x stainless steel M3 x 10mm button head screws
8 x stainless steel M3 plain nuts

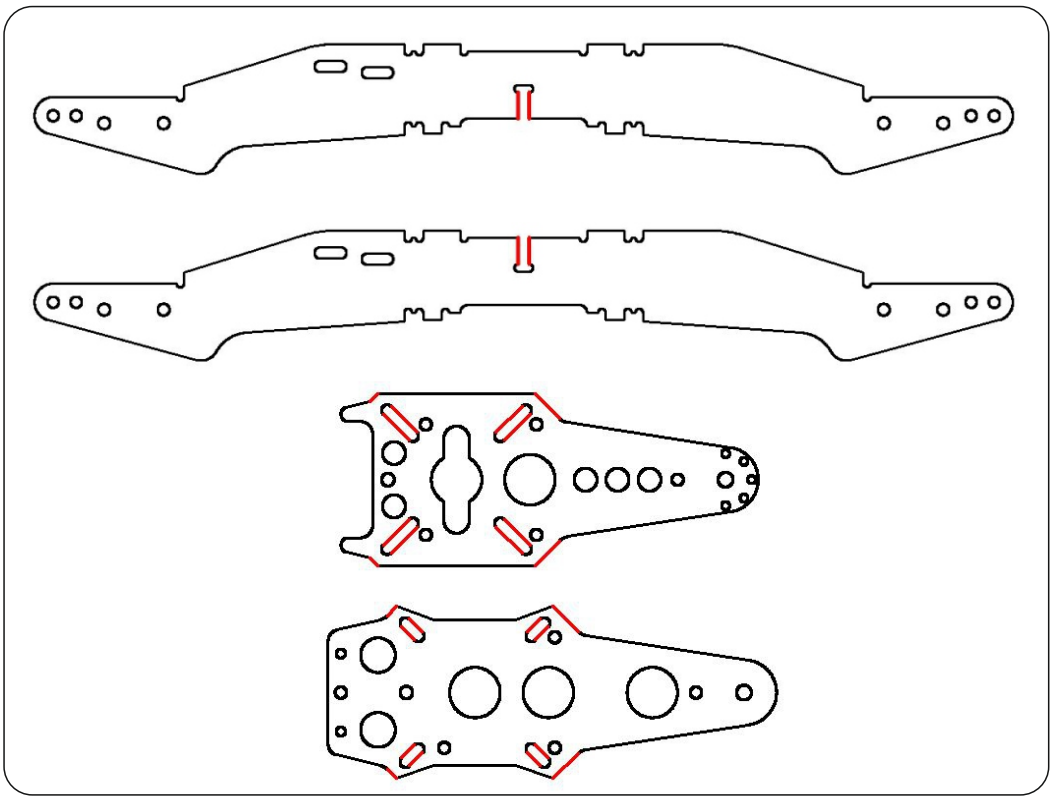
3 x aluminium tapered pillars
1 x aluminium rear pillar
4 x brass standoffs
2 x stainless steel M3 nyloc nuts
2 x stainless steel M3 x 10mm countersunk screws
4 x stainless steel M3 x 12mm countersunk screws
4 x stainless steel M3 x 5mm button head screws

1 x sticker
1 x battery pad (not shown)
1 x battery strap (not shown)

Sections highlighted in blue are certain procedures that require some type of threadlock adhesive. Although not essential it is strongly advised.
Threadlock is available from the Fossils Stuff shop in the accessories section.

The Revo is a thoroughbred racing frame with every part requiring a perfect fit with each other to achieve the optimum performance from the frame.

A few frames will not need any attention at all, others will need a small amount of filing to bring each part into tolerance for a perfect fit. The lines shown in red are where filing may be required.

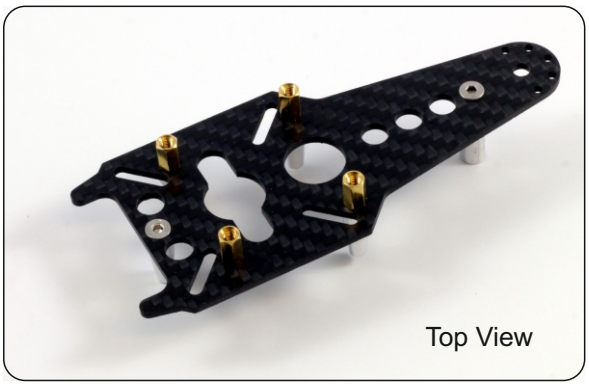


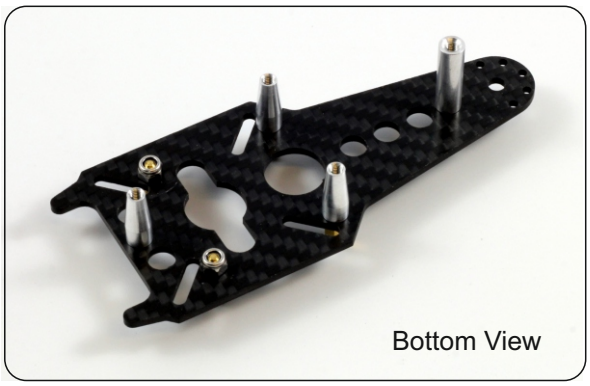
Unfortunately, carbon sheet cannot be manufactured to the tolerances required to allow a perfect fit with all the components on every frame.

Once all the components all fit together tightly without any hardware, take apart ready for the next stage.

Top plate.

Fit front standoffs with M3 nyloc nuts. Fit rear standoffs with two of the tapered pillars. Fit front tapered pillar and rear standard pillar with M3 x 10 countersunk screws.


Top View


Bottom View

Now is a good time to bolt your camera mounting bracket to the bottom plate.

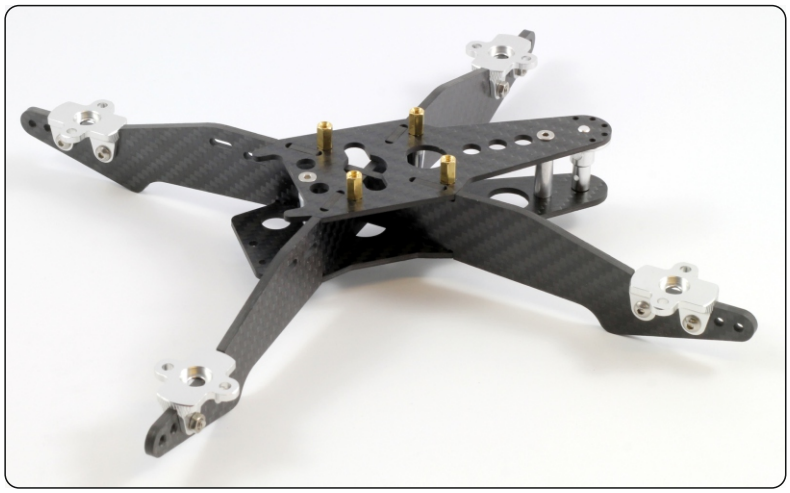
Frame Assembly

Slot both arms together. Push top plate onto arms. Push bottom plate onto arms. Use 3 M3 x 12mm countersunk screws to draw the top and bottom plates together by screwing into the tapered pillars.

Prise the rear of the frame apart to insert the tensioning post into the rear most 4mm diameter holes. Finish by using the remaining M3 x 12mm countersunk screw to bolt up the bottom of the standard pillar and lock in the tensioning post.

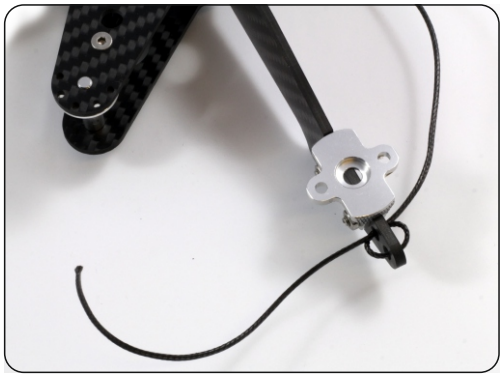
Motor Mounts

Check the fit of the mounts on the carbon arms. Should any of them be too tight to just slip into position, then prise the mounting lugs open slightly with a large flat screwdriver. Attach each motor mount with the M3 x 10 screws and nuts.



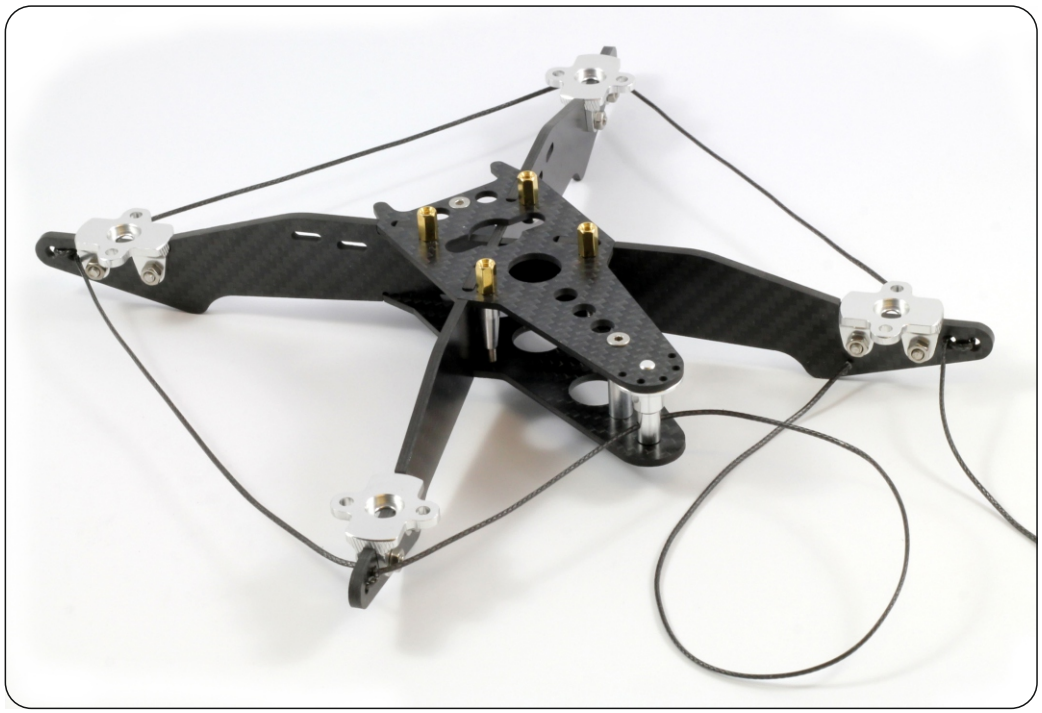
Rigging

Thread the 1.00mm diameter rigging line through the rear right hand arm rigging holes (motor 1) as shown in photo below.

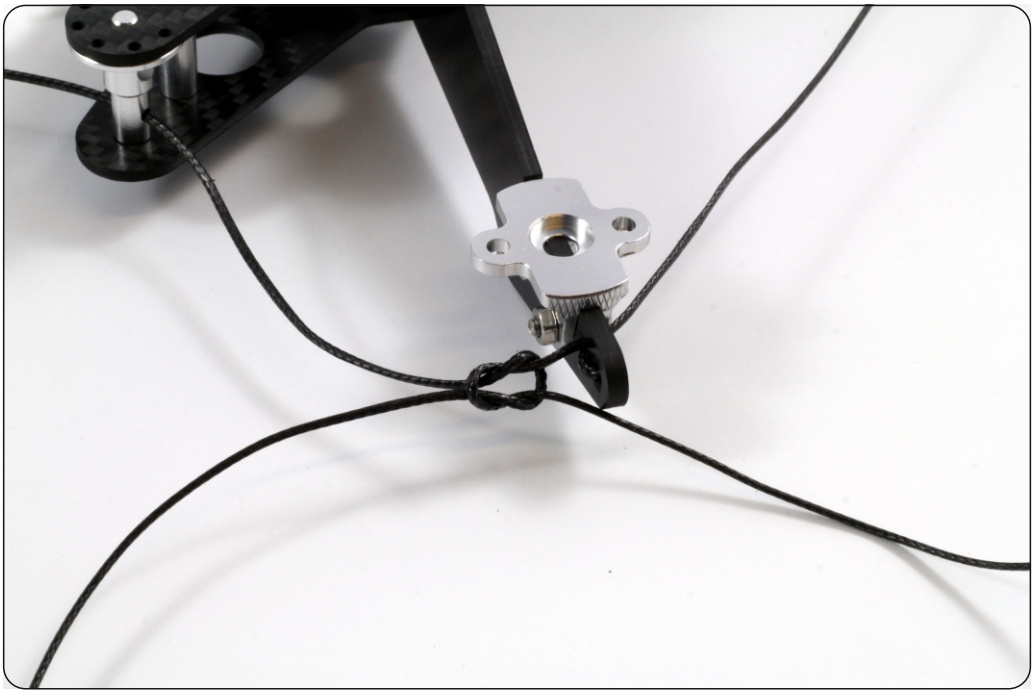


Rigging (Continued)

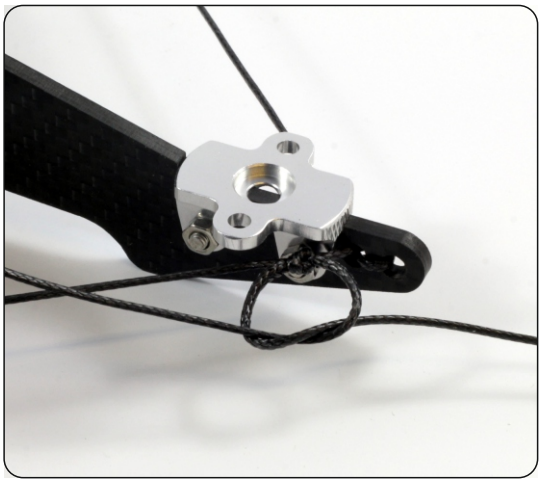
Continue around the frame in an anticlockwise direction passing the rigging line through each arm and finishing by passing the line through the lower hole in the tensioning post.



Next stage is to tie the line. These knots are important and must be done very tightly as the dyneema line is quite waxy. Start with a reef knot as close to the motor mount as possible. This will help reduce drag if the knot is kept under the mount.



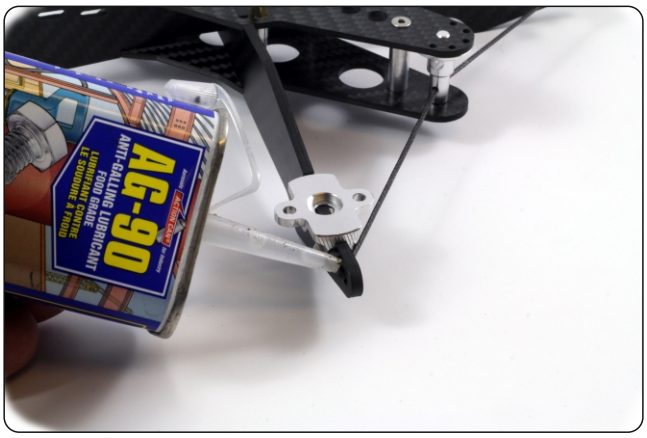
Tighten the reef knot with two pairs of pliers or better still grip one end in a bench vice and use a pair of pliers on the other end with the line wrapped around the pliers. Tighten the reef knot as tight as possible. Now tie a granny knot and tighten again. Finally repeat with another granny knot.

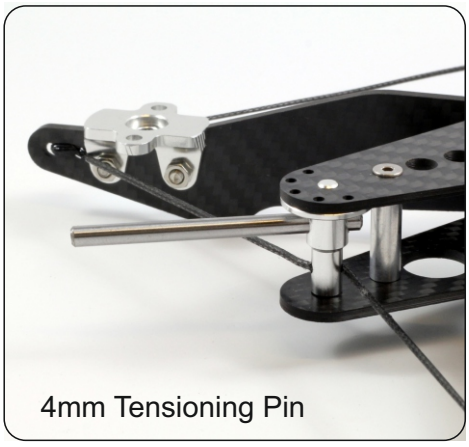


Now cut the ends of the line to within about 2mm of the knot and with a cigarette lighter or match, heat the frayed ends until they melt back to the knot.

Once the knots have been tied and tightened, the next stage is to tension the line. Apply a few drops of oil (3 in 1 or similar) to the line and the holes in the carbon arms. This will allow the line to slide through the holes whilst under tension and when aligning the arms. Remove any excess with a rag or tissue.

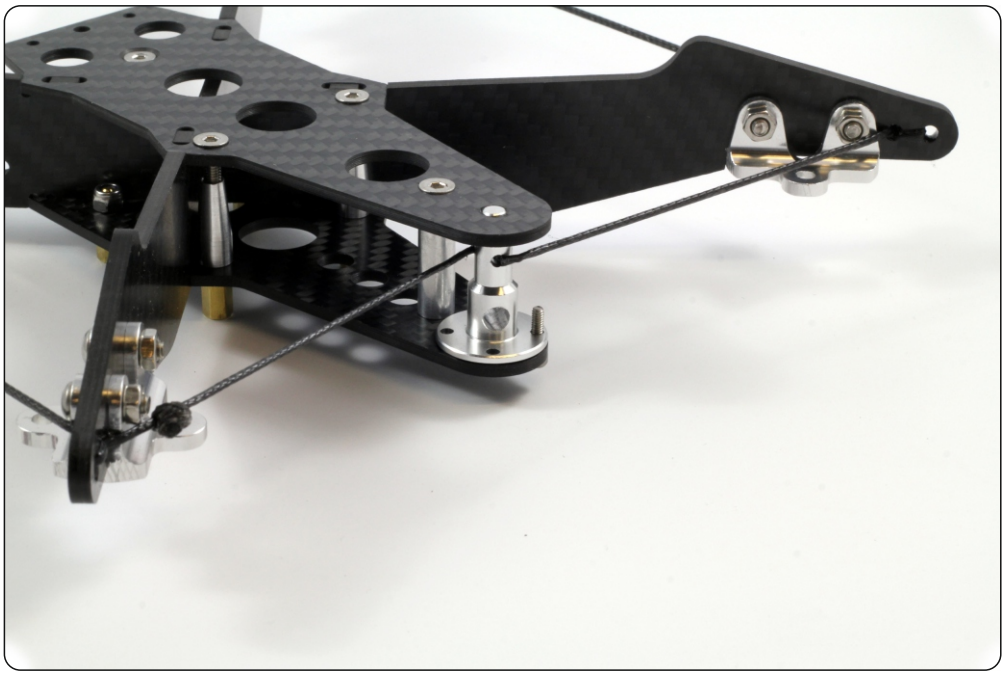
If the tightening is done without oil, the dyneema line will be subject to abrasion by the carbon and will cause the line to fray and greatly weaken it.



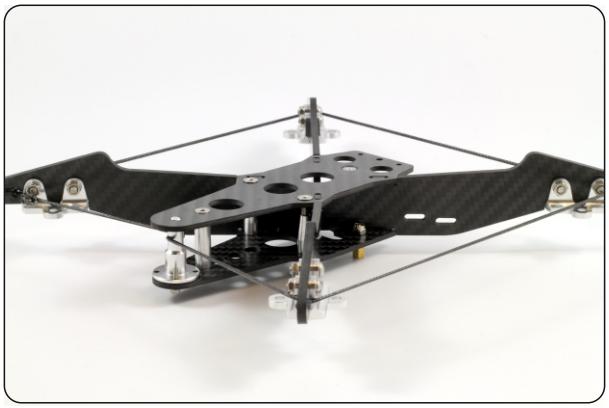

4mm Tensioning Pin

Insert the Fossils Stuff 4mm tensioning pin or similar (a 4mm drill will do the job) through the top hole of the tensioning post.

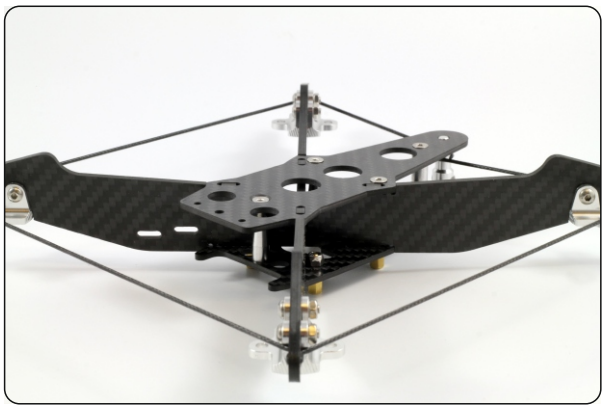
Next stage is to tighten the line by rotating the tensioning post with the pin. Do not attempt to tighten fully in one go but rather in stages. At each stage the tensioning post can be held in position by using an M2 x 8mm bolt through the carbon top plate and then picking up one of the four 2mm holes in the tensioning post.



As the line is tensioned the arms will bend out of line. Straighten the arms by bending back straight. It is at this point the oil applied earlier will do it's job, allowing the line to slip freely through the holes in the carbon.



Arm bent after tightening line



Arm straightened

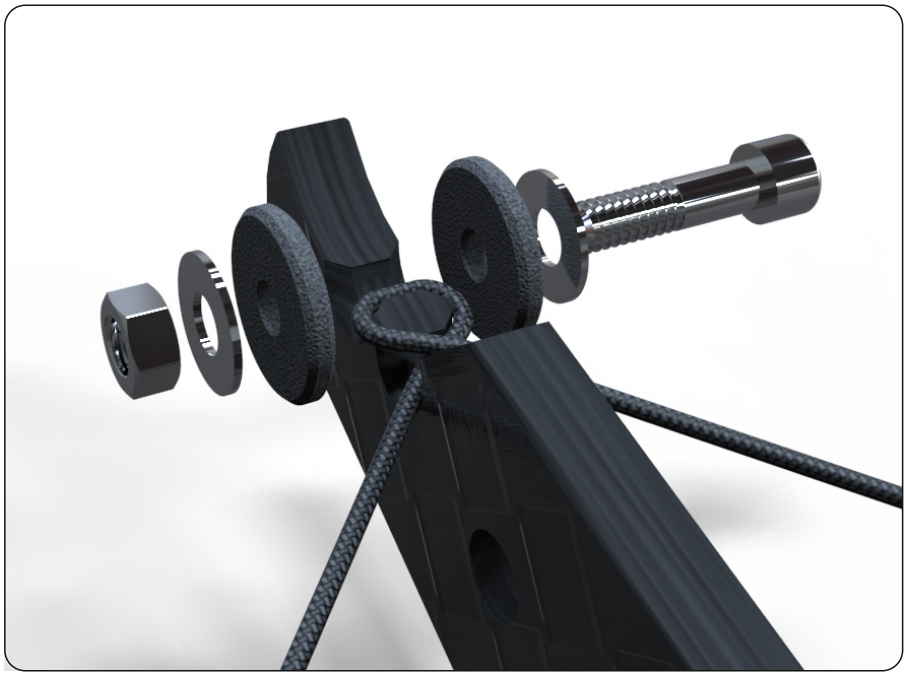
Repeat this process two or three times until the line is very tight. You should be able to pluck it like a guitar string. You will find the line stretches slightly over time. We have found it best to leave 24 hours and re-tighten before locking it up completely but this is not essential, especially if you are at a race meeting with a broken line and want to fly in the next heat!

The distance between the outermost parts of the arms should be identical on all four corners. You can measure with a ruler or make up a gauge to the correct length.

Dimensions required for each frame can be found in the table below.

Revo 4 163mm
Revo 5 184mm
Revo 6 205mm

The final stage is to lock up the line at the ends of the arms with the M2 bolts, plain washers, fibre washers and nuts. Assemble as per the rendering below. The arm has been cut away for clarity. The bolt passes through the outermost hole of the arm.



The whole rigging sequence can be left until your Revo is complete. You may find it easier to fit ESC's, FC, PDB etc without the rigging line in situ.

To complete the Revo it is really a standard build from here. ESC's if used can be taped to the arms as per a standard carbon frame. The rear compartment between the top and bottom plate provides ample room for a receiver and a VTX.

Most builds have had the antenna going straight out the back attached directly to the VTX and then cable tied to the Tensioning Post. The three holes at the rear of the top plate are designed to accommodate a VTX antenna pigtail extension allowing for a top mounted antenna.

There are no holes in the arms other than those in the front part of the frame. These are designed to allow adjustment of the camera angle. Both the RunCam double screw adjustment can be done and also the standard HS1177 bracket can be adjusted through these holes.

In the unlikely event of an arm breaking, it is a relatively simple job to change an arm. De-rig the line, remove the motor mounts and ESC's on the broken arm. Remove the 4 M3 x 12 countersunk screws from the bottom plate allowing the arms to be removed and replaced.

The battery strap passes through the slot between the lower plate and the arms.

The supplied battery pad is self adhesive and is stuck on the underside of the lower plate. Align the screw cutouts in the pad with the two rear tapered pillar M3 countersunk screw heads.

Remember, the arms are all interchangeable on the main chassis so why not try an alternative version at some time.

Optional extras will become available in the very near future such as FC stack covers of different heights, anodised aluminium components in a range of colours and an LED strip mounting system.

Any feed back would be welcome either good or bad.

Enjoy your Revo whichever one you chose and good luck if entering any of the race events this year.

Cheers,

Fossil.