

Acro Pro

This construction manual shall be used as a guide for the assembling of the Acro Pro. In addition to the wings, the fuselage and the T-tail you need the following things:

- control horns(1mm thick plastic or CFRP plate)
- 0.8mm bowden cable
- 3M 90 spray adhesive
- 3M 50mm strapping tape
- 5min Epoxy or hot glue
- coloured Monta tape
- 4/6mm CFRP Pipe (Length 1.5m)
- 2mm wire for the landing gear

The spray adhesive and the strapping tape are both available on our website (www.epp-modelle.de) if go to accessories.

Main wing:

Remove the foam cores from their beds. Use the sandpaper or a scrap piece of foam to clean off any melted foam debris.

Now apply epoxy or hot glue to bond the foam cores together. Use the bottom foam beds to align the cores.

It is not mandatory to install a spar in the wing, but dependent on the aircraft speed and take-off weight are CFRP spars between 4 and 6mm recommended. To install the spar make an appropriate cut-out in the core and use glue to bond the spar to the epp core.

Whether you decide to install or not to install the spar you have to use strapping tape to reinforce the wing. Before you tape the wing you have to spray a light cote off spray adhesive on the wing. Otherwise the tape won't stick on the epp.

Now you can shift the wing into the appropriate slot in the fuselage. Before you start doing the cut-outs for the RC components it is recommended that you tentatively put all components in place to find out the right position for the centre of gravity (70mm +/-5mm from the wing leading edge backwards; You can use needles to fix the components). Once you found the right positions trace all components on the wing and fuselage using a pen or marker. Use a sharp knife to do the cut-outs (The cut outs should be a bit smaller then the RC components as they wont be glued but pinched into the core). We recommend to make the battery cut-out a bit bigger then necessary, in order shift it back or forward at the end off the assembling. Like this you obtain the right CG without using plumb.

Use silicon or a small piece of plywood to install the engine in the designated cut-out. The motor should have a downthrust of 4-6° and 2° lateral thrust to the right, which has to be adjusted according to the power used engine.

Bevel a 45° chamfer at the hinge edge of the ailerons and attach them to the wing using strapping tape.

Use a sharp knife to detach the rudder from the vertical tail. Proceed in the same way with the elevator (The section point is marked with a little notch). Now bevel a 45 degree chamfer at elevator hinge. For the rudder you need to bevel from both sides evenly to obtain an angle of 90° at the hinge edge. The two elevator half's are

connected with a small piece of plywood. Tentatively assemble the horizontal and vertical tail and cut some material from the vertical tail, so that the elevator is able to move at least 60° up- and downwards. Now round-off all edges on the T-tail and connect the elevator and ruder to the tail (Use the strapping tape as hinge). Now use toothpicks and hot glue to attach the vertical tail perpendicular on the horizontal tail. Push the toothpicks through the horizontal tail and approximately 30mm into the vertical tail. Cut the remaining toothpick off. Now bond the T-tail, aligned to the fuselage and at designated step, on the fuselage. Manufacture control horns from a small piece of plywood or plastic and attach them to the ailerons, rudder and elevator. Put all RC Components in place and tape the bowden cables to the fuselage and connect the radio gears with the control horns (Instead of the Bowden cables you can also use a 2mm CFRP rod).

Make cuts about 6mm deep into the epp to run the cables of the RC components. Now bond the wing to the fuselage using 5min epoxy or hot glue, but pay attention that it is parallel to the horizontal tail.

In order to reinforce the fuselage use a 4mm CFRP spar or strapping tape as shown in the drawing.

Now spray a light cote of spray adhesive on the model and cover it with Monta tape.

For the first flight the CG should be shifted a bit to the nose and the rudder movements should be limited to 30° . After a few flights and adjustments of the controls you can push the CG more backwards and limit the rudder deflections to 60° .

ACRO - PRO EPP

