



## Building Instructions

Thank you for choosing our product, the Clik Evo. You have just bought a high performance model for indoor type (F3P) aerobatics.

*Please read these Building Instructions carefully. You may prevent undesirable outcomes...*

### *Team RC Factory recommendation:*

You may use several types of glue – a contact glue (UHUPor), foam safe CA (for the rest of this document, when we say CA, we mean foam safe or „styro“ CA), polyurethane glue (Purex), 5 minute Epoxy. We prefer UHUPor type glue for depron parts and CA for smaller parts. For good results and low weight, you may try thinning the contact glue by technical gasoline or by warming up the glue.

Contact glue – how to use: apply a thin layer to both parts and let settle for 3 to 10 minutes (the glue should not be completely dry, only a bit tacky). After that, hold the parts firmly together. Be careful, because they cannot be separated again without a big risk of damaging them.

Use paper towel to remove all excess glue. You will have a lighter and better looking model.

### *You will be asked to „sharpen the end of a carbon stick“. How to do it:*

Use cca 400 grade sand paper and rub the end of the stick against the sandpaper, while turning it slowly in your fingers. The angle of the stick is cca 30° in relation to your workbench.

### *How to split the carbon sticks:*

Use your hobby knife blade to roll the stick on your workbench, pushing down on the blade until the the stick splits.

- Do not forget to vaccum the carbon dust, if you happen to make any. You will do your health a big favour!
- Build your model at standard room temperature (20 – 22°C).
- Ventilate your workshop well, glue fumes are harmful for your health.

Please check the completeness of your kit by comparing it to the attached parts list. In case of questions or complaints, feel free to contact us: [info@rc-factory.cz](mailto:info@rc-factory.cz) .

### *Now you can start building:*

#### **Diagram 1:**

Use sharp knife to cut the bevel to wing and aileron parts where the aileron is hinged. Remember, the hinge is a clear adhesive tape on the top of the wing. Repeat for the elevator and the rudder (on both parts of fuselage, upper and lower). Use clear tape to attach the ailerons to the wings. You may want to first prime the surfaces under the tape with a thin smear of contact glue. Glue the 100mm carbon strip into the elevator (using CA) – on a straight workbench.

#### **Diagram 2:**

On your workbench, join the wings with the longest part of the „backbone” and the horizontal stabilizer („fixed part of the elevator”). All should be „bottom side up”. The shape of each wing root is different, preventing wrong assembly with the backbone. Now you may also glue control horns into the ailerons (CA).

Glue the 3x0.5x660 mm CA strip to the leading edge of the wing, throughout, across the curved front part of the backbone (UHUPor). Do it on a straight workbench, using good amount of glue. Attach (glue) the front part of the backbone (the triangles graphic is supposed to be on the upper side of the part). Glue the lift tabs to the front part of the wing. Attach the EPP parts to the fuselage (CA or UHUPor). The little tab should make sure that you do it in the right way. Check that the thrustline is pointed to the right (left when your assembly is now bottom side up).

#### **Diagram 3:**

Sharpen one end of the 30mm, 1.5mm diameter carbon stick. Pierce it into the fuselage bottom part as per Diagram, leaving cca 2 mm free. CA glue in. Now you can glue the bottom part of the fuselage to the existing assembly.

#### **Diagram 4:**

Glue the „butterfly” (part 4 on the plywood frame) onto the carbon rod on the bottom fuselage. Take 4 carbon sticks 1x250 mm and locate them into the wing and the butterfly. Shorten the sticks as necessary. Now put some weights over the wing and backbone, to secure them flat and straight. Make sure that the fuselage is perfectly square to the wing plane and glue the sticks on one side. Glue sticks on the other side and also install the depron supports. The sticks (spars) should be perfectly straight.

Install the landing gear as per Diagram. The gear legs are made of carbon

1,5x200mm, their location fixed by the slots in the fuselage and the holes near the wing leading edge. The leg-fuselage intersection is reinforced by the parts No. 6 from the plywood frame. The leg-axe joint is part 7 of the plywood frame. Make sure that the geometry of the axes in relation to the airframe is correct.

#### **Diagram 5:**

Now is the time to make the fuselage bracing. Cut your carbon sticks into pieces as per the parts list and sharpen one end of each. The position of the braces is marked by little holes in the fuselage, backbone and horizontal stabilizer. All these carbon braces come in pairs (left – right). Install the braces, begin at the butterfly and proceed to the back of the airframe. Install both parts of a pair at once, always controlling that the fuselage is square to the wing plane.

Always try a dry fit of each brace stick and only glue (little drop of CA) them when satisfied.

Lastly glue the EPP triangular part into the front of the fuselage.

#### **Diagram 6:**

Now take the whole assembly from the workbench, turn it around and stand it on the landing gear. Take the upper fuselage part and dry fit it into the backbone slots. If it fits well, remove it and check, whether the servo locations (marked by dotted lines cut into depron) suit well your servo size and your preferred servo locations. If yes, cut through the dotted line or customize the opening to the size of your servos. Glue the EPP „canopy“ to the fuselage (contact glue or CA). Glue the upper fuselage to the assembly. Install the remaining braces – between the horizontal and vertical stabilizers. Make sure that the upper fuselage is square to the horizontal plane. Install the EPP triangular part to the front of the fuselage.

Glue the control horn (part 3 on the plywood frame) into the rudder. Make sure that the holes in the horn are symmetrically distant from the hinge line!

Use clear adhesive tape to attach the rudder to the vertical stabilizer. Smear little contact glue first, this way the tape will hold very well.

Proceed in the same way with the elevator.

#### **Diagram 7:**

Install the Side Force Generators (SFG's) and the „lift tabs“ as per the Diagram. Install the wheel pants holders (part 8 on the plywood frame) and the wheel pants (make sure that they do not touch ground when the model stands on the wheels). Make sure that you don't glue the wheels to their axes!

Glue the small airbrakes to the elevator.

The main airbrakes: prepare the holding carbon rods (2 pairs of 0.8x100 and 2 pairs of 0.8x140) and sharpen one end of each. Pierce the rods into the SFGs (at the „dotted line“ locations) and CA glue. Make sure that the 100 mm rods are glued into SFGs at the very tip of the wing.

Install the airbrakes at the end of the rods (use CA).

#### Diagram 8:

Install the motor. Use your preferred method, the makers of the motors often include a glassfiber firewall.

We prefer a method where the thrust angle can be adjusted when trimming your airplane.

#### Diagram 9:

Install your servos and linkages (for rudder and elevator we prefer to use the pull – pull strings system, for ailerons the 1 x 160mm control rods). To achieve the correct geometry and be able to change the aileron differential if necessary, we use the aileron extension servo horn (part 5 on the plywood frame).

#### Trimming your Clik Evo

We expect that you know how to connect the receiver to the ESC and to the servos, the ESC to the motor etc. If not, please refer to the respective instructions or better ask some more experienced friend.

For first flights, your C of G should be in the position of the strut anchor. Set 35° deflections

on all controls. Check all systems and go fly. To trim the plane correctly, you have to be

indoors or it has to be absolutely calm outdoors. First, trim all controls coarsely to make the

plane appear to fly straight. You should need about the same amount of elevator for both

inverted and normal flight. If you have enough clearance, you may try vertical dive to trim the

neutral elevator.

Your aileron trim should be the same in normal flight and inverted. If it is not, you may have

a lateral balance issue. Try to move the battery pack sideways (say to the opposite side of the

fuselage), if you can, to fix this problem.

After this, you should play with the thrust line to setup for clean and effortless hover without

any tendency to “pull out” to any side. This may take a while and require quite a few tests.

If your model needs different rudder trim for normal and inverted flight, this may be also a thrust angle issue.

Next thing, the C of G. We prefer the plane to fly almost “hands off”, just the slightest bit of

elevator needed for level flight. Move the C of G vertically (by moving the battery pack) to

get a perfect knife edge without any tendency to roll.  
For clean rolls, without any coupling to yaw (we prefer to test this on 45° upline, like in the climbing parts of the reverse Cuban eight), you may want to play with aileron differential (different up and down deflection of ailerons). Our prototypes needed some differential (more up than down). To change the differential, you can use the included extension servo arm. If your aileron pushrods are on the bottom of the wing, you get more differential when you use holes more to the front of the servo arm.  
For F3P flying, we use about 35° throws on all controls, with 40% of exponential. Before transition from level flight to the torque roll (part of the F3P sequence), we switch to somewhat higher rate on elevator (40 – 45°).  
The rest is up to you, remember that training makes perfect!

Enjoy your new F3P plane!  
Your RC Factory team.

#### Technical specifications:

**wingspan:** 800 mm  
**length:** 930 mm  
**AUW:** 115 – 140 g  
**motor:** 20 - 60W Brushless Motor  
**battery:** 2 - 3S LiPo battery pack 120 - 360mAh  
**ESC:** 4 - 12A Speed Brushless Controller  
**Servos:** 3 - 4 Servos 4.5 - 6g