

Crack Yak Mini

Building Instructions

- Select suitable servos and center them using your RC system. For ailerons, we recommend 4,4g servo capable of min. .5 kg/cm torque. For tail surfaces, 3.7 to 4 g servos with 0.4 kg/cm are sufficient.
 - Fully deflect all movable parts to the maximum (180°) and leave weighed down in that position for min. 3 hours. This will soften the live (EPP) hinges and allow for better servo performance later.
 - Use thin or medium CA glue.
1. CA glue the elevator/stabilizer and the wings to the horizontal fuselage part (“the Backbone“).
 2. Locate two carbon strips 3x0.5x500 mm and (using only few drops of) CA glue them together (to get a 6x0.5x500 spar). Using sharp precision knife, cut the spar slit in the wings/backbone. To position the slit easily, we have made two small holes through the wing. So simply cut the wing through hole-to-hole.
 3. In „upside down position“, install the elevator servo (secure with a drop of medium – not thin! – CA or hot glue or use your favorite method).
 4. Attach the lower fuselage part (Diag. 4b).
 5. Glue the Z-bends to the aileron pushrods (carbon 1x100 mm). Cover with a piece of heatshrink tubing and apply heat (use heat gun or – carefully – a cigarette lighter). Diag 5a-5c. Attach the extension horn to the aileron servo. Use a piece of sewing thread and when satisfied, fixate with CA.
 6. The aileron horn location is marked with a shallow cut. Cut all the way through using sharp hobby knife. Install aileron servo with the extension horn. Dry insert the aileron horns and insert aileron pushrods into the servo horn. Attach the remaining Z-bends by only heating the heatshrink tube and dry assemble the pushrods with the aileron horns. When satisfied with the alignment of everything, CA glue the Z-bends and the aileron horns.
 7. Time for the landing gear (LG). Use two carbon strips 2x0.5x150 mm. Use little drops of CA to install the supporting plywood rectangle into the lower fuselage. Insert the legs so that one goes behind and one in front of the plywood part. Insert the legs ends into the pre-cut slots in the backbone. The crossing of the legs and the plywood part should be secured by a piece of sewing thread. When you are happy with the geometry of the LG, fixate everything in place using some more CA. Glue the plywood reinforcement (little circle with a slot) to the EPP wheel pants (make sure to have both left and right!). There is a pre-cut slit in the wheel pant. Glue the wheel pants to the LG legs (please refer to the Diagram). You can (marker) paint the „half-wheel“ black for better looks.
 8. Attach the canopy to the upper fuselage part. The canopy is 2 mm thinner, so you might want to use something of 1 mm thickness to support the canopy before gluing it to the fuselage (when both lay flat on the workbench of course). Install the rudder servo, attach the upper fuselage and attach the rudder to the fuselage.
 9. Glue all the pushrod guides/supports into the fuselage. The elevator guides are glued either into the backbone (elevator) or to the upper fuselage (rudder). There are small slots pre-cut for the guides. The pushrods should be spaced approx 5 mm from the fuselage. Glue the motor mount to the fuselage.

10. Locate the elevator and rudder pushrods (0.8 mm carbon). The control horn locations are partially cut into the rudder and elevator – use your hobby knife to cut them all the way through. Like in the case of ailerons, use heat tubing to install the z-bends. On the servo side, put the z-bends through the servo horn and push the servo horn on the servo axle. On the tail side, dry assemble the Z-bends and the control horns. When satisfied with the alignment, use CA to fixate the horns in place and to glue the Z-bends to the pushrods.
11. Cut the SFGs as per the Diagram, install them onto the wing. Attach the tailskid to the fuselage. You may cut suitable slot for your receiver or to attach it with double sided adhesive tape. After some flight testing and establishing your preferred C of G, you may want to cut battery pack slots into the fuselage. In such case, make the hole ca 1 mm smaller for good friction to hold the pack in place. You can also attach the battery pack using double sided adhesive velcro tape.

For the building, you may also need:

- workbench
- sheet of polyethylene (to prevent gluing your model parts to the workbench)
- CA glue (thin or medium or rather both), CA kicker
- sharp hobby knife
- heat gun or cigarette lighter
- small hobby saw or pincers
- small phillips screwdriver
- fine sand paper
- ca 500 mm of sewing thread

Recommended RC equipment:

- 2x 2 to 3.7 g servo (tail controls), 4 to 4,7g servo (ailerons)
- 20 to 40 W motor (11 to 15 g)
- Brushless 5 to 7 A ESC
- 2s 180 to 240 battery pack

We wish you many happy flights with your new Crack Yak Mini.

The RC Factory team.