

# Crack Pitts

## Building Instructions

- For ailerons, use 8 to 11g type servo, for the tailfeathers use 6 to 7g servos. The quality of servos will greatly influence your flying experience. Set all servos to their neutrals.
- To achieve free and light movement of all surfaces, deflect them to the maximum (180°) and weigh them down in this position for min. 3 hours or better overnight. This way the hinge material will stretch and relax for easier deflections later
- Consider your flying skills – if you require maximum throws, use the extension servo horns for elevator and rudder servos and use the outer holes in the aileron servo horn. Longer lever on the horns means that you should use servos with high available torque.
- The whole model, unless otherwise stated, can be glued with cyanoacrylate (CA) or contact (Welders, UHU-Por) glue. Neither has to be styro safe.

The point numbers below respond to the particular Diagrams:

1. Attach (which means “glue together using CA or contact glue”) the horizontal stabilizer to the backbone. Install the elevator servo and fix it in place (you may use hot glue or tiny drops of medium thick CA or your favorite method – never use thin CA as it may seep into the servo and ruin the mechanical parts inside).
2. Cut the fuselage into 2 parts (Diag. 2). Attach the lower part of the fuselage to the backbone (make sure the backbone is upside down – elevator hinge V-cut facing up). Glue the 45° torsion strips in place.
3. Install the rudder servo and fix it in place. Attach the upper fuselage part (still without the canopy). Using sharp knife, cut through the vertical slit and install the spruce vertical reinforcement spar (2 x 9 x 150 mm). Install also the front wooden reinforcement (2x9x90).
4. Install the wooden spars into the wings. Install the wooden reinforcements (1.5 x 5 x 150) into the wing struts.
5. For the aileron pushrods use carbon rods 1.5 x 110mm. Attach the Z bends to the rods using the included shrink tubing (5 a,b,c) and drop of thin CA. Attach the extension horn to your aileron servo horn. You may drill 1 mm holes through both original and extension horns and insert small pieces of 1 mm rods (cut from the tailfeather pushrods). CA glue the small pieces in place, cut them down to the necessary size.
6. Install the aileron servo into the wing, respecting the cut-out shape in the fuselage. Re-drill the aileron horns to 0.8 mm diameter and install the adjustable links (secure with the included quick-lock washers). Cut the aileron locations all the way through the ailerons (the cuts are partially done in the right length – all you have to do is cut them all the way through the foam). Install the horns into the ailerons (using CA). Insert the aileron pushrod z-bends into the extended servo horn and on the other side into the adjustable links on the aileron horns. Insert the aileron servo horn on the servo and secure with a screw. Tighten the adjustable links in the correct (neutral ailerons) position. Now you may try your aileron function.
7. Lay the lower wing on your workbench, leading edge on the edge of the bench. Carefully slide the fuselage onto the wing, the servo must fit in the respective cut-out. Attach the wing to the fuselage (this time we suggest CA). Cut through the wing along the fuselage, next to the spar, to make a slot for the plywood reinforcement tab. Install the tabs, make sure that your fuselage is square to the wing and glue the tab in using thin CA. Glue the struts into the wing (they are symmetrical, only make sure that they are in the position skewed to the front of the model – as per Diag. 7).
8. Lay the upper wing, upside down, on your workbench. Insert the rest of the model, inverted, into the correct slots. The model is now resting on the workbench via the stub of the vertical stabilizer. Insert the upper plywood reinforcement tabs and glue them in, and everything together, using CA (first make sure that everything is square and true). Prepare your interaileron pushrods (carbon 1.5 x 165 with z-bends on each end, just like you did in step 5). The inter-axial distance of the opposing z-bends is 162 mm. Insert the z-bends into the particular plywood horns. After making sure that all ailerons are in neutral position, glue the horns into the ailerons (using CA).
9. Attach the canopy and the rudder part to the fuselage. Locate the elevator and rudder pushrods (diam 1 mm x 500mm). Attach the z-bends like you did in the aileron case (shrink tubing and all). 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 located approx 5 mm from the fuselage.

10. Cut through the prepared slots for rudder and elevator horns (marked as No.2). Drive the z-bend through the elevator horn, drive the pushrod through the respective guides and glue the elevator horn to the elevator. Repeat the same for the rudder pushrod. Important: the elevator z-bend is inserted to the horn from the outside, the rudder z-bend from the bottom.
11. servo arm extension – for extreme control throws, you may need (depending on your specific servo type) to use one. Slide the extension arm on your servo arm, fasten with kevlar line and CA. On the servo side, the pushrods are attached by the adjustable pushrod links – just like on the aileron servo. Glue the motor mount to the fuselage front, install the motor.
12. Install your RC equipment, receiver, ESC and all. You may cut a tight-fitting slot for your receiver or use your favorite method. After deciding on the best location for the battery pack (to achieve your desired CG – you may use the location on the Diagram as a good starting position), you may cut a tight fitting slot for them too. Alternatively use an adhesive velcro tape. Last, install the SFGs (the tabs on the tips of the wings).

RC equipment:

2x servo 6g (rudder, elevator)

1x servo 9 - 10g (ailerons)

motor cca 60+ W, 20 - 30g (typically 2204 to 2206 type motor)

brushless ESC 10-12A

battery 2S 450 mAh

We wish you many happy flying hours with the Crack Pitts.

Your RC Factory team.

