

Daidalos assembly instructions

Common instructions:

The core of the wing is made up of extruded polystyrene, which is coated in fiberglass with carbon reinforcements. The wing has to be handled with care, because due to the low weight is susceptible to damage, especially for pitting.

ATTENTION! Use only adhesives designed for polystyrene, epoxy resin or polyurethane-based adhesives. Do not use polyester resins, substances based on organic solvents and most CAs. The coating is microporous so staining may also cause damage to the core.

Wing Assembly:

Before you join the wing halves, create gaps for the servos under the square carbon frames. Draw the outlines of the servos on the cover, cut the coating and dig the core mass out. There are two servo cables already prepared in the wing. The cable closer to the TE is designed to control the flaps, second cable leads to the aileron servo.

One piece wing variant:

On the base rib, you'll find vertical mark. Under this mark there is the girder – both halves of the wing have to be joined here using the joint from the kit. Use sharp knife to cut the hole for the joint next to rib mark. Glue both halves of the wing together with 15mm dihedral on each side measured at the point of first crank (not at the end of the wing). Then drill the 10mm holes for screws, one 30mm from LE, second 30mm from TE. Fill the holes with dense epoxy. Roughen the wing join and cover with carbon fiber. Cover with cellophane and press using some soft material. Join has to be nice and smooth. Then drill 2 holes for M3 screws.

Two pieces wing variant:

Drill two holes for front screws (30mm from LE) and two holes for rear screws (130mm from LE).

Tail surfaces:

Fit the carbon tube on the fuselage and for wingspan 2,0-2,3m adjust it's length so that the overall length is 115 cm. For wingspan 2,5m stay original size. Rudder has to be put before the elevator. The elevator should be glued on small balsa block at the end of the carbon tube. Make sure the elevator axis and tube axis match. The moving part of the elevator should go beyond the end of the tube.

Sand the moving part of the rudder so that it can be placed over the fixed part of the elevator. When adjusted like that, glue it on the carbon tube. All glued joints should be covered using fiberglass. For the installation V tail is angle dihedral 110 degrees.

Fuselage:

Place the wing on the pod, mark the holes and fabricate an oval hole for future access to the servos. Prepare aluminum plates or pieces of plywood with nuts and glue them inside the fuselage in the points where the wing will be attached to the fuselage by screws.

One piece wing variant:

Drill hole for M3 screw for front screw, fabricate M3 thread and screw on the wing. Make sure an angle between the wing and the tail is 90 degrees, drill the hole for rear screw and fabricate M3 thread again.

Two pieces wing variant:

Mark one of two front holes, drill the hole and fabricate M3 thread. Screw on the wing, make sure an angle between the wing and the tail is 90 degrees, fabricate thread for second front screw. Then create rear screws holes similarly.

Roughen the end part of the pod, screw the wing and glue the tail tube to the pod. Make sure that elevator plane matches the wing plane when looking directly from the front or tail. Glue steel or carbon string on the bottom part of the canopy so that the string goes over it's edges slightly. Then it should fit on the pod nicely and be fixed properly.

Fitting the gear:

Connect and glue the servos in the wing so that it can be removed easily (without wing damage) in case of failure. Cover servos with adhesive tape. Fix aileron levers in ailerons so that the lever joins both parts of the fiberglass cover.

Rudder and elevator servos should be placed under the wing. Use push rods or threads to control rudder and elevator. In case of using push rods they should be placed inside the tail tube. Regarding rudder push rod – it is good to go out from the tube in place where fixed part of the rudder is glued on the tube so that the tube is weakened as little as possible. Elevator push rod goes out of the tube simply at its end.

Second possibility is using kevlar thread and torsion spring. This system is widely used on DLG ships and is very reliable. Main advantage is saving of weight. Beside this only small holes have to be drilled in the tail tube which keeps tube robustness and one side pull systems also keeps clearances at their minimum.

Setting up:

Recommended point of CG for maiden flight is for wingspan 2,0m 50-55mm, wingspan 2,3m 55 – 60mm from LE. Every pilot has its own preferences and CG position should be adjusted to pilots needs during first flights.

We recommend to set following flight phases:

Speed: ailerons +2 mm

Thermal: ailerons -3 or -4 mm

Normal: ailerons +0 mm

For slowing down we recommend using butterfly mix.

In case you have any questions regarding the instructions or the plane itself, please do not hesitate to contact us at info@ypsi.cz.