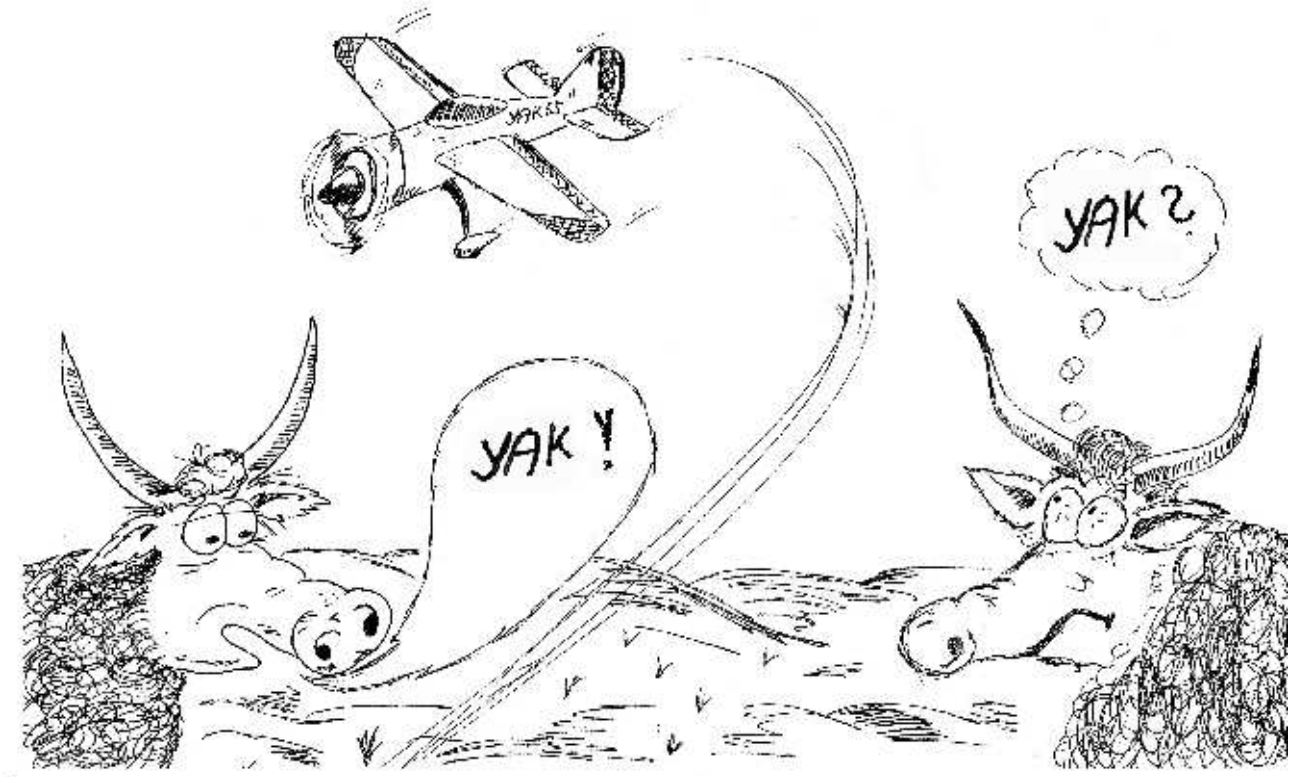
designed by Gernot Bruckmann

G-MODELS

YAK-55M 1.4

Assembly instructions



Forget the rest - a YAK ist the best!

Gernot

Table of contents

Thank you for your purchase of the GB-Models YAK 55M. It was designed by Gernot Bruckmann and delivers maximum 3D performance. With reduced rates the YAK performs precision aerobatics remarkably well and allow you to improve your flying skills.

As any high performance aircraft. Care must be taken to avoid excess speed. Never attempt to make full throttle dives!

This professional ARF kit can truly be assembled in about 12-15 hours, but take a few minutes to read the instructions before beginning assembly.

1. Specifications (metric units)

Wingspan: 140 cm

Length: 133 cm

Wing Area: 36 dm^2

Weight: 1900-2000g

(RTF, less motor battery)

2. Recommended Setup

Radio: 5-6 channel with 4 digital, metal gear Servos

(e.g. GRAUPNER DES 678 BB MG)

3S ~3200mAh:

Motor: AXI 4120/12

Controller: Jeti Spin 55/66 BEC

Prop: 15x8

4S ~2800mAh:

Motor: AXI 4120/14

Controller: Jeti Spin 55/66 BEC

Prop: 15x8

5S ~2400mAh:

Option1:

Motor: AXI 4120/18

Controller: Jeti Spin 55/66 BEC

Prop: 15x8

Option2:

Motor: AXI 4120/20

Controller: Jeti Spin 55/66 BEC

Prop: 17x8

6-S~2400 mAh:

Motor: AXI 4120/20

Controller: Jeti Spin 55/66 BEC

Prop: 15x8

3. Required tools and adhesives

Tools

- Hobby knife
- Drill
- Drill bits: 1,5mm and 2mm
- Phillips screwdriver
- Sand paper
- Masking tape
- Soldering iron

Adhesives:

- 5-minute epoxy
- thin CA
- medium CA
- blue Loctite ®

4. Warning

This aircraft is not a toy! If misused, it can cause serious injuries and demage to property.

Fly only in official flying sites and follow all instructions included with your equipment.

5. Using the manual

This manual is divided into sections to help make assembly easier to understand and to provide breaks between each major section.

6. Warranty Information

We guarantee this kit to be free from defects in both material and workmanship at the day of purchase.

This warranty does not cover any parts damage by use or modification, and in no case shall our liability exceeds the original cost of the purchased kit.

Further, we reserve the right of change or modify this warranty without notice.

As we have no control over the final assembly or material used for the final assembly, no liability shall be assumed or accepteted for any demage of the final user-assembled product. By the act of using the product, the user accepts all resultiong liability.

If the buyer is not prepared to accept the liability associated with the use of this product, the buyer is advised to return this kit immediately in new and unused condition to the place of purchase.

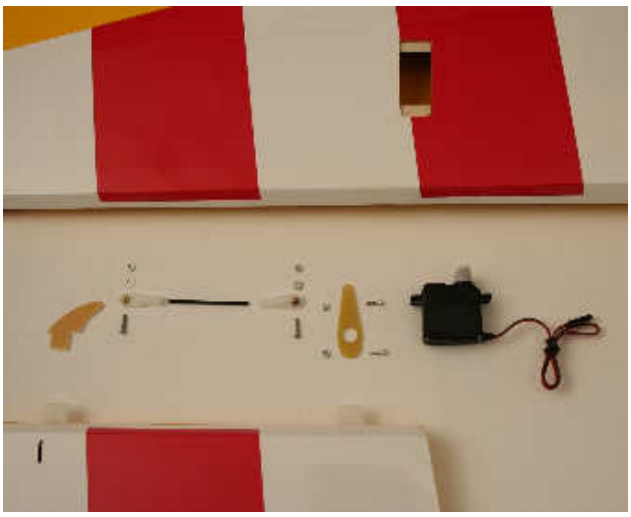
7. Before starting assembly

Before starting assembly of your YAK, closely inspect the parts for damage. If you can find any damage please contact the place of purchase.

Wrinkles in the covering can be easily removed, use a covering iron or a heat gun to remove them.

1. Installing the Ailerons, Servos and Linking

Locate items as shown:

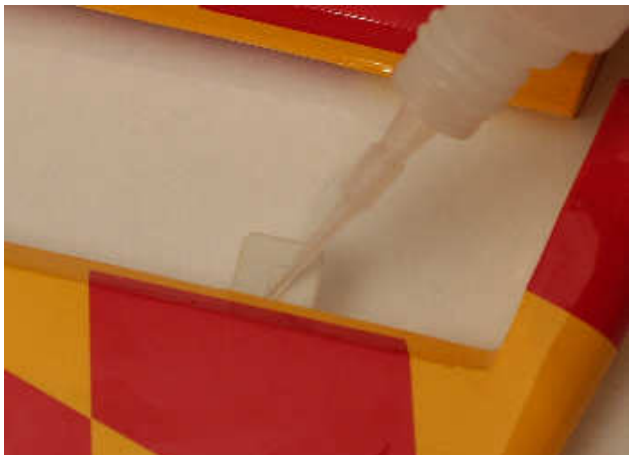


Picture 1: Aileron / Parts

Locate a wing panel and insert hinges.

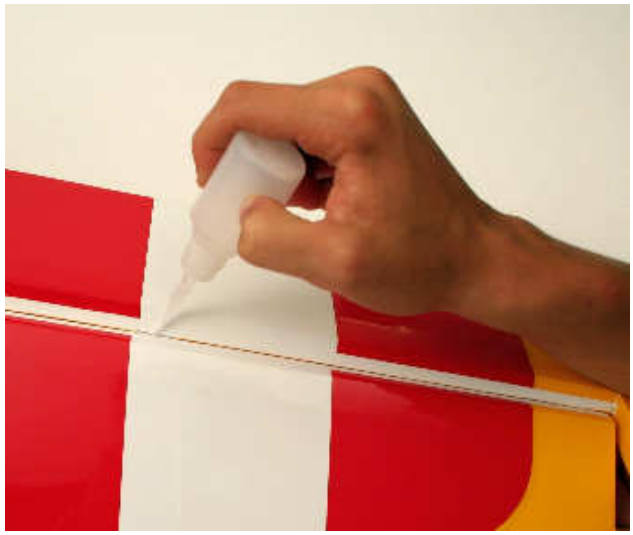
Picture 2: Wing panel

Check to see that all hinges are centered between the wing and aileron.



Picture 3: Hinges

Apply a drop of thin CA to each hinge – don´t use CA-activator!

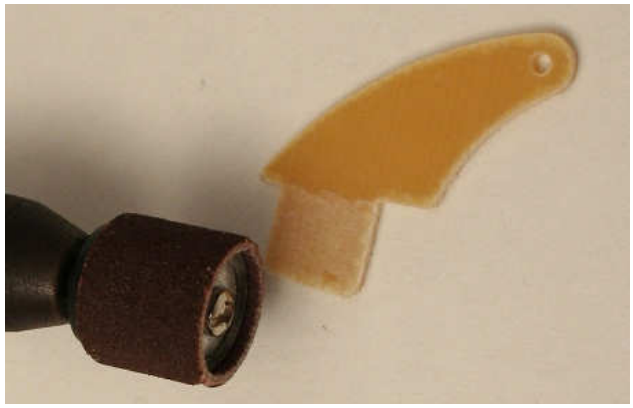


Picture 4: Aileron / Bottom

Check movement and distance (approx. 0.8mm), apply a drop of thin CA - avoid adhesive on the covering!

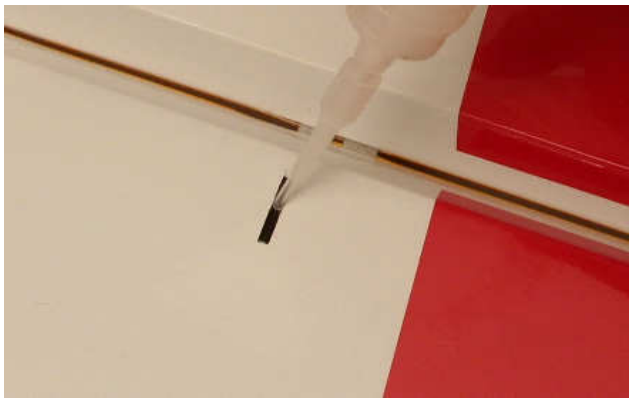
Flip the wing over and repeat.

Use a hobby blade to remove the covering over the mounting hole for the aileron control horn. Grind the part of the control horn that will glue into the aileron slot.



Picture 5: Aileron control horn / Detail 1

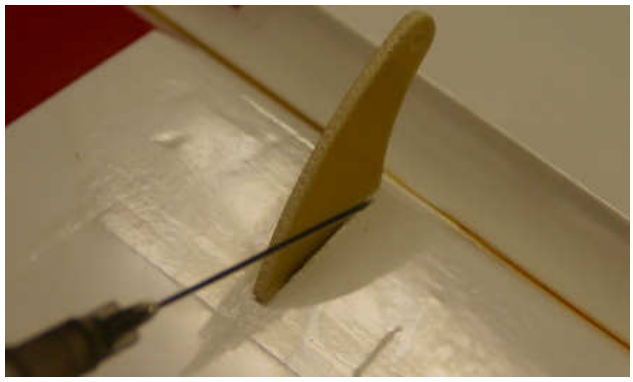
Glue the control horn in place with medium CA or epoxy.



Picture 6: Aileron control horn / Detail 2

Picture 7: Aileron control horn / Detail 3

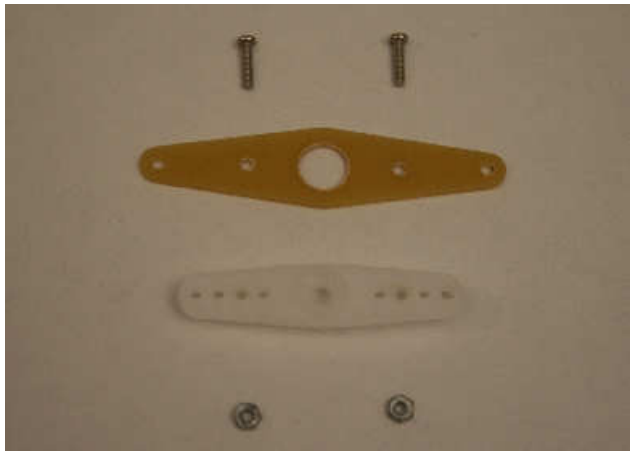
If necessary add some drops of thin CA into the slot – avoid CA on the covering.



Picture 8: Aileron control horn / Detail 4

Locate the composite (one sided) servo lever extensions and the 2mm screws/nuts.

Drill the servo horn as shown and secure the extension with the 2mm screw/nuts.

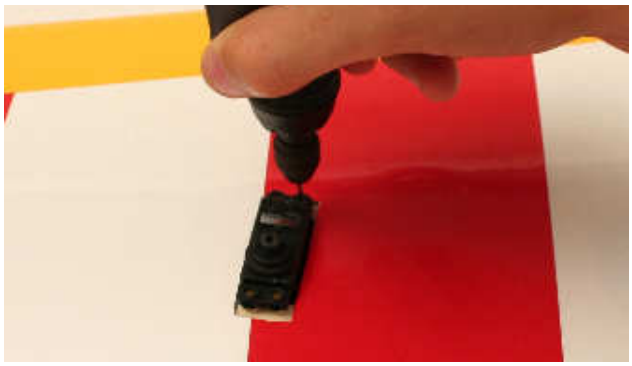


Picture 9: Servo lever extensions / Example

Picture 10: Aileron servo lever extension

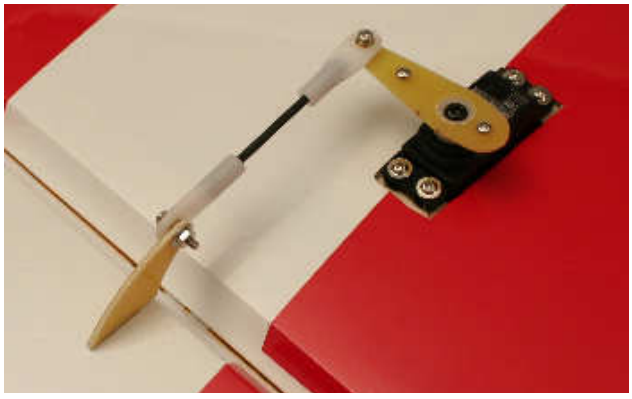
Electronically center your servo, install the aileron servo using the manufacturer supplied mounting screws – route the servo lead out of the wing.

If necessary attach a servo extension lead.



Picture 11: Servo mount

Thread the ball links onto the pushrod and secure it to the composite levers with 2mm screws/nuts/washers.

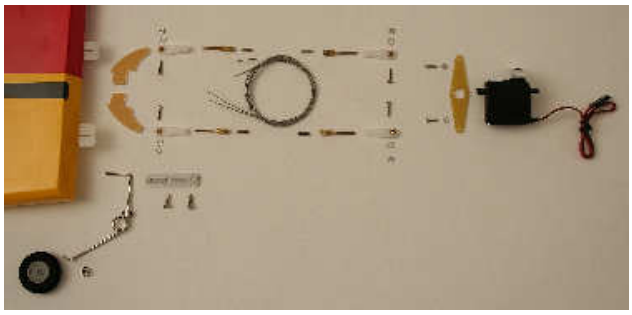


Picture 12: Aileron / Linking

Repeat the procedure for the other wing.

2. Rudder and rear landing gear installation

Locate all necessary items.



Picture 13: Rudder / Linking / Rear landing gear

Insert hinges and check to see that all hinges are centered between the rudder and vertical stabilizer.

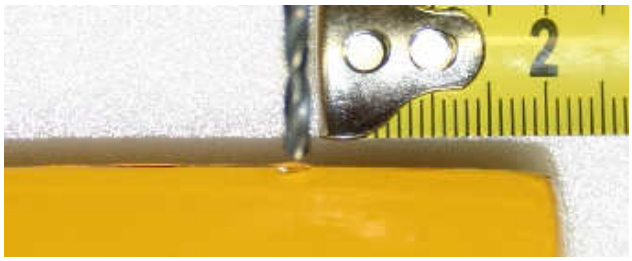
Picture 14: Rudder / Hinges

Apply a drop of thin CA to each hinge – don´t use CA-activator!

Picture 15: Rudder / Drilling

Using a 2mm drill-bit, in a distance of 20mm from the bottom carefully drill a hole for the tail wheel bracket.

Make sure the drill is perpendicular to the hinge line of the rudder!



Picture 16: Distance 20mm

With the hobby knife cut a groove of 18mm length into the rudder, from the bottom to the position of the tail wheel bracket. Apply some drops of thin CA in the groove to protect the balsa.

Check alignment of the tail wheel bracket.

Picture 17: tail wheel bracket / groove

Grind the part of the control horns that will glue into the rudder slot. Glue the control horns in place with medium CA or Epoxy – observe symmetry and turning point.

Picture 18: Rudder control horn

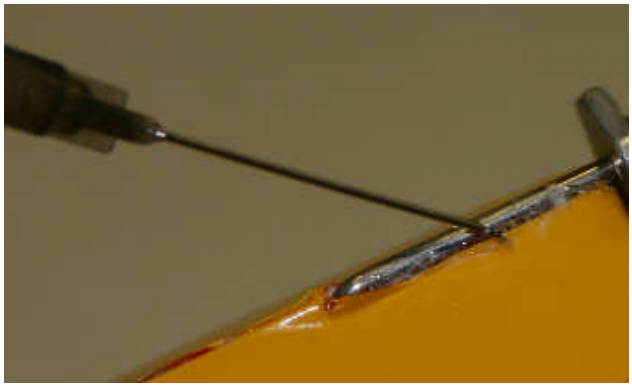
Locate all necessary items

Picture 19: Tail landing gear

Attach the tail wheel using the included wheel collar.

Picture 20: Tail wheel

Glue the tail wheel bracket in place with medium CA or Epoxy.



Picture 21: Tail wheel bracket

Verify the correct position and alignment of the rudder with the vertical stabilizer.

As described in the aileron section, glue the hinges into the vertical stabilizer – work the rudder left and right and check for proper movement.

Avoid adhesives on the covering.

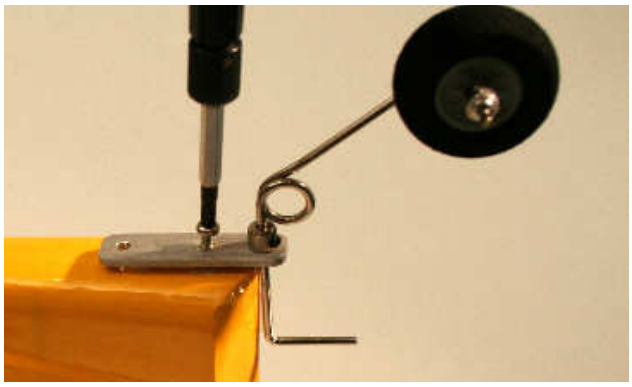
Picture 22: Rudder / Hinges

For better clarity, the rudder is not shown on the following pictures.

Picture 23: Tailwheel assembly 1

Position the tailwheel assembly, locate and mark the two drill holes. Using a 1.5mm drill, carefulle drill the holes for mounting the tail wheel. Apply one drop of thin CA to harden the wood and prevent the screws from pulling out.

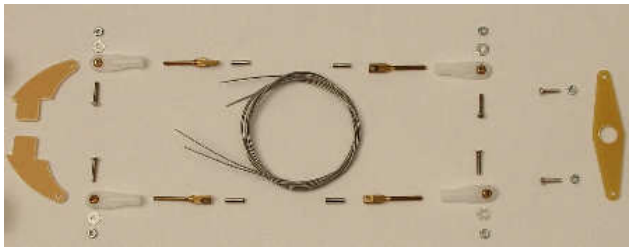
Attach the tailwheel assembly using self-tapping screws.



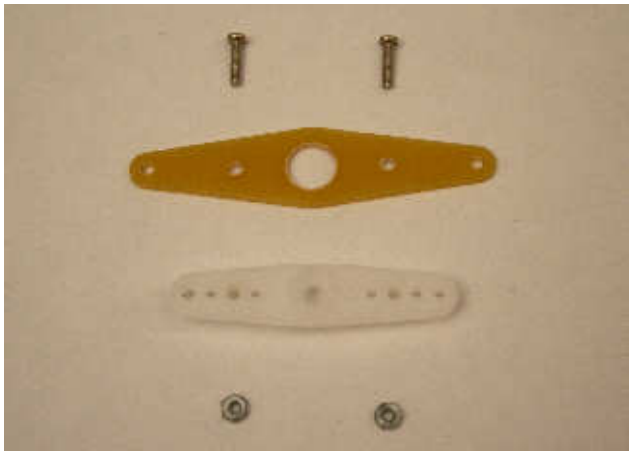
Picture 24: Tailwheel assembly 2

3. Rudder linking installation

Locate all necessary items.



Picture 25: Rudder linking items



Picture 26: Servo extension lever

Install the servo hardware included with the servo (gommets and eyelets) and attach the nylon servo arm / composit servo extension lever to the servo – pay attention to middle position!

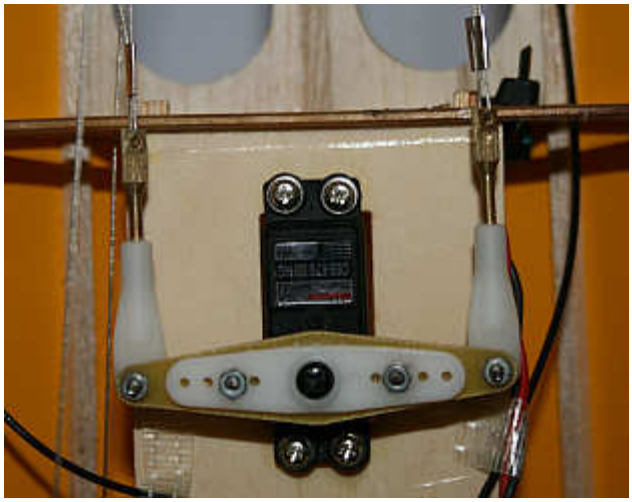
Picture 27: Rudder servo

Fasten the servo in his place, drill holes if necessary – check orientation like shown on picture 27.

Prepare the wire-linking.

Attach the ballheads to the eyescrews (4 pieces) and locate/open the holes in the fuselage:

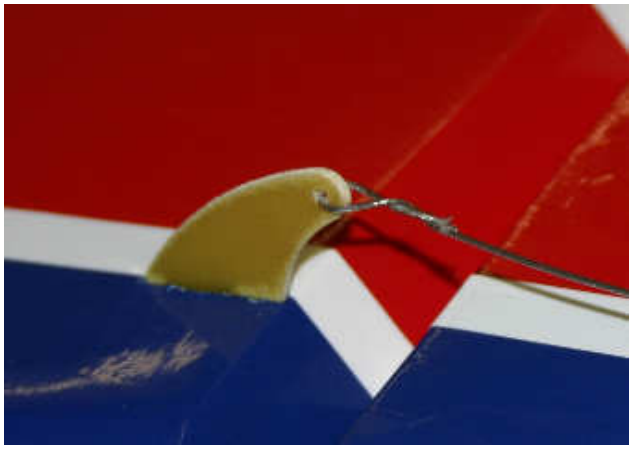
Abbildung 28: Rudder linking / Detail



Picture 29: Rudder servo

Install the rudder wires and connect them to the rudder servo. Adjust the linkages so the rudder is centered and stay in a central position. Check alignment in knife-edge position and don´t put too much strain on the wires / servo gear.

To save some weight it is also possible to fix the wires/loops directly to the rudder control horns like shown:



Picture 30: Rudder / Wire / secured loop

Picture 31: Rudder linking

We do not recommend to attach the linking without ballheads on both ends – after the first flights the linking should be re-tensioned.

4. Elevator – Option1: Wire linking

Decide where you want to install the elevator servo – either in the middle or rear of the fuselage.

For classic aerobatics and/or a motor battery >400 grams we recommend to fasten the servo in the rear – in this case please continue on the next chapter.

For "Showflight" and 3D-Setups with required larger elevator deflection / faster response it should be fastened in the center.

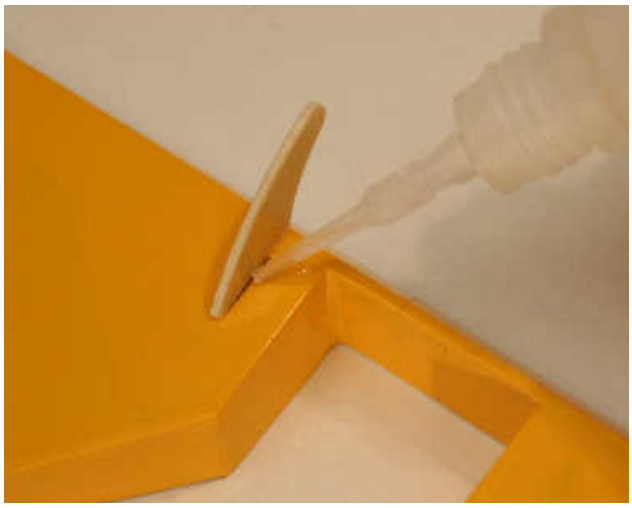
Locate the necessary parts and items.

Picture 32: horiz. stabilizer / Elevator

Glue the hinges - horizontal stabilizer only!

Picture 33: Hinges / Elevator

Locate the position of the control horn and open the covering on top and bottom (LEFT side only – according to the prepared holes in the fuselage and relative to the direction of flight).



Picture 34: Elevator / Control horns 1

Grind the part of the control horns that will glue into the elevator slot. Glue the control horns in place with medium CA or Epoxy – observe symmetry and turning point.

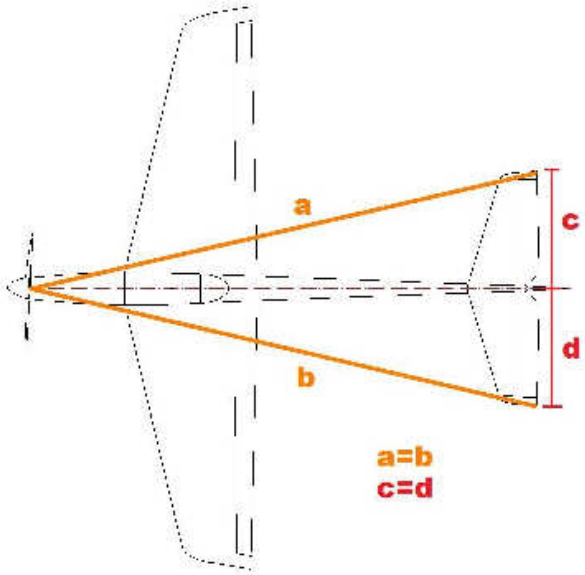
Picture 35: Elevator / Control horns 2

Slide in elevator inverted and turn it into normal position.

Picture 36: Elevator

Picture 37: Horizontal stab. / Elevator

Compare the horizontal stab to the wing and ensure that they are parallel. Trim or shim the slot to insure proper alignment.



Picture 38: Elevator / glue

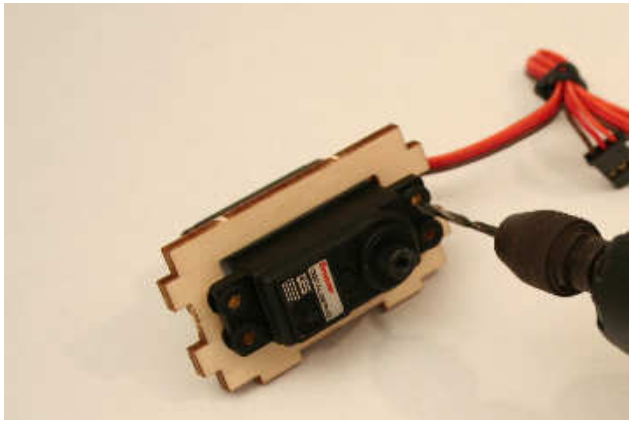
Check to see that all hinges are centered, apply a drop of thin CA to each hinge – don´t use CA-activator - Flip the fuselage over and repeat.

Picture 39: horiz. Stabilizer / hinges

Locate the plywood parts and sand the edges.

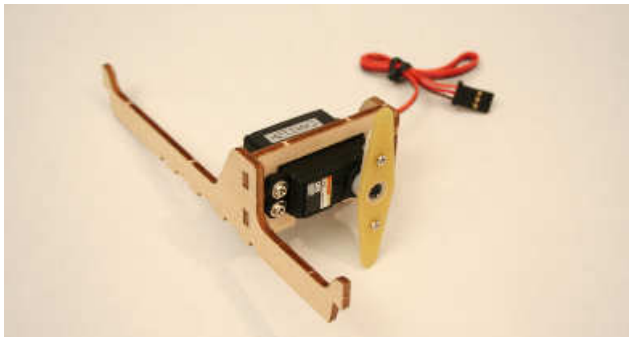
Picture 40: Elevator servoframe

Drill holes and fasten the elevator servo – mind direction.



Picture 41: Elevator Servo

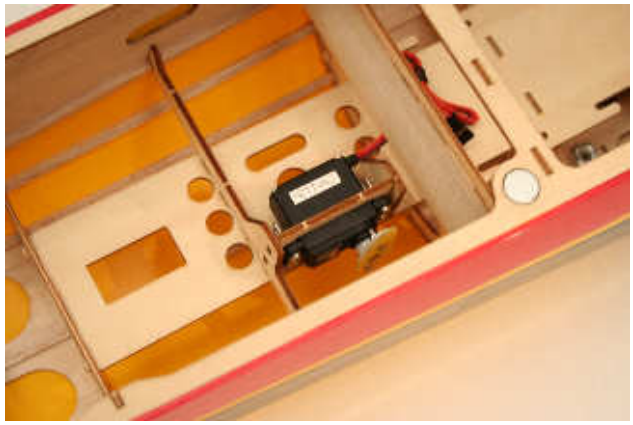
Glue servo frame using medium CA.



Picture 42: Servoframe

Attach the wire linking as described in the rudder-section.

Picture 43: Elevator servo / Wire linking



Picture 44: Elevator servo / overview

Picture 45: Elevator linking / Detail 1

Picture 47: Elevator linking / Detail 2

5. Elevator – Option 2: Pushrod

Glue the hinges / horizontal stabilizer only!

Picture 48: Hinges / Elevator

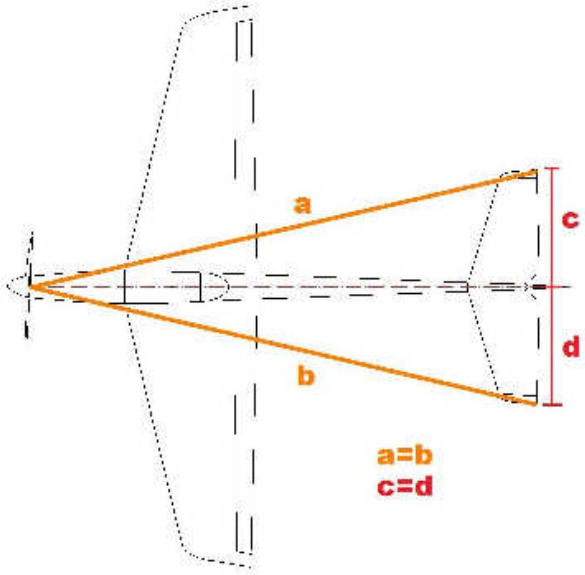
Locate the position of the control horn and open the covering on the bottom (only on the LEFT side – relative to the direction of flight).

Slide in elevator inverted and turn it into normal position.

Picture 49: Elevator

Picture 50: Horizontal stab. / Elevator

Compare the horizontal stab to the wing and ensure that they are parallel. Trim or shim the slot to insure proper alignment.



Check to see that all hinges are centered, apply a drop of thin CA to each hinge – don´t use CA-activator - Flip the fuselage over and repeat.

Picture 51: Elevator / glue

With a hobby knife open the place for the elevator servo in the covering.

Drill holes and fasten the Servo – check direction!

Install the aileron servo using the manufacturer supplied mounting screws.

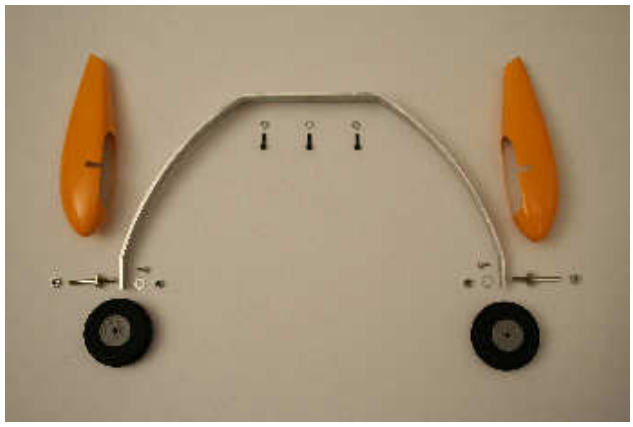
Attach and route a servo extension lead.

Picture 52: Elevator / Pushrod

Electronically center your servo, install and adjust the linking.

6. Main landing gear installation

Locate all the necessary items:



Picture 53: Main landing gear

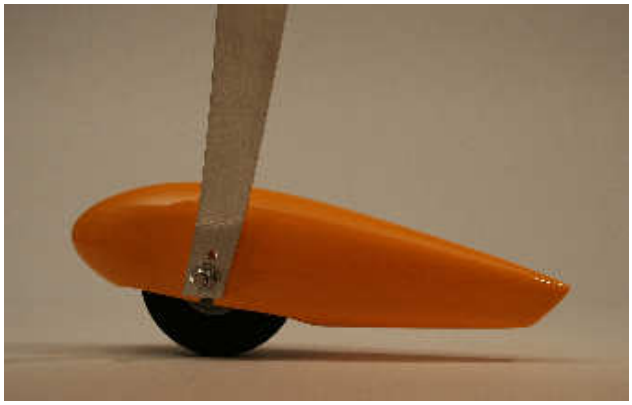
Install the axle. Place the wheel on the axle followed by the wheel collar. Slide the wheel pant over the axle with the retention ring inside

the wheel pant – check direction (Pic 54)

Fix the gear to the fuselage using screws and washers.

Picture 54: Fahrwerksbefestigung / Rumpf

Adjust the wheel pants on a flat surface.



Picture 55: Wheel pant

Using a ~1.5mm drill bit carefully drill a hole and insert a self tapping screw as shown.

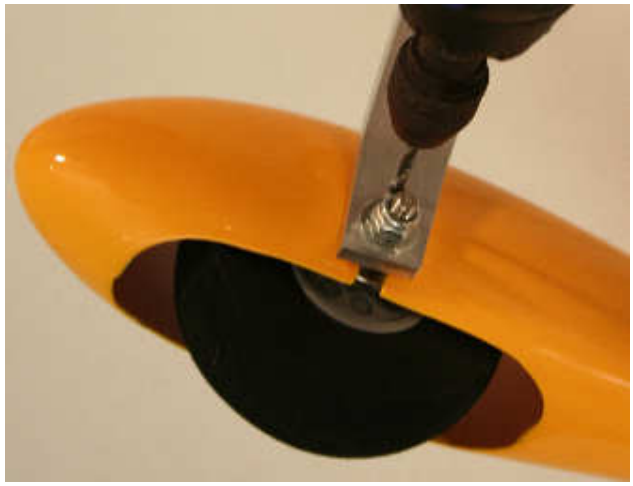
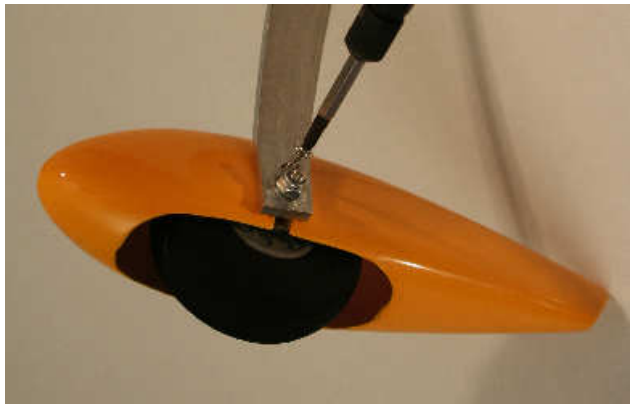


Abbildung 56: Wheel pant / Detail 1



Picture 57: Wheel pant / Detail 2

Picture 58: Wheel pant / Detail 3

7. Motor installation

Picture 59: AXI 4120, Jeti Spin 66 ESC

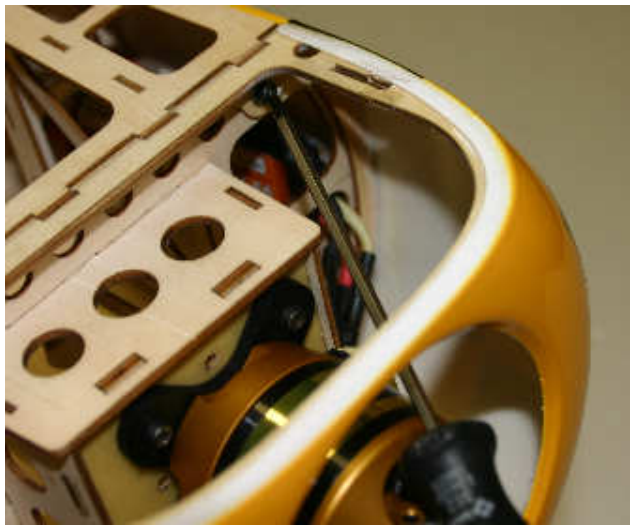
Attach the radial mount to the motor and install the prop adapter – use the pre-drilled holes to fasten the motor.

Picture 60: Motor / Detail

Secure the screws / nuts with a drop of blue Loctite ®

8. Cowling, Spinner

Picture 61: Cowling



Picture 62: Cowling / Screw

Picture 63: Spinner

9. Control throws and CG

- Aileron 45 mm, 45% Expo
- Elevator 30 mm, 40% Expo
- Rudder 55mm, 50% Expo
- MIX Rudder left/right → Elev 10% UP
- Recommended CG: 125mm (~5”) behind the leading edge of the wing against the fuselage

10. Preflight

Before fly, be sure to RANGE CHECK THE RADIO following the manufacturer instructions, doublecheck all controls, motor and prop, charge your battery and .

...HAVE A NICE FLIGHT!