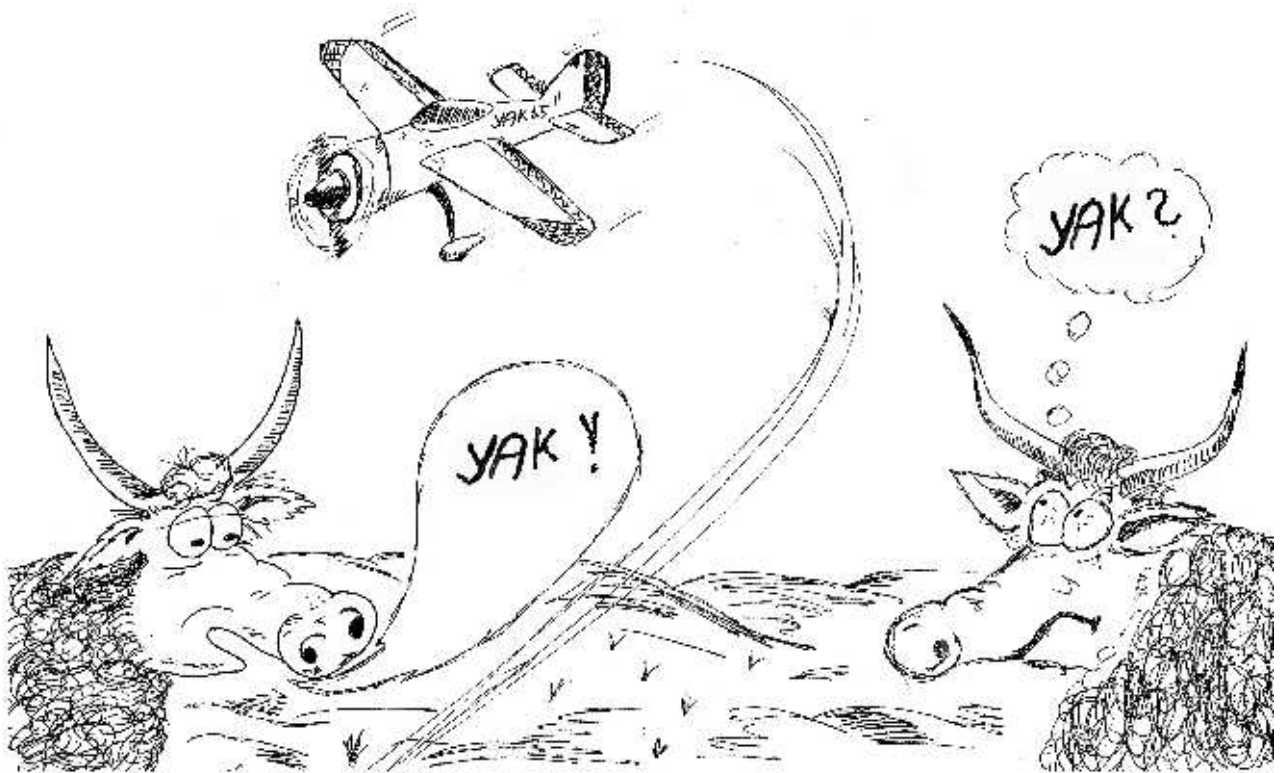




# YAK-55M 1.8

**Assembly instructions**



*Forget the rest - a YAK ist the best!*

*Gernot*

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Thank you for your purchase of the GB-Models YAK 55m 1.8. 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 15-20 hours, but take a few minutes to read the instructions before beginning assembly.

### **1. Specifications (metric units)**

Wingspan: 180 cm  
 Length: 174 cm (w/o spinner)  
 Weight: ~3600g  
 (RTF, less motor battery)

### **2. Recommended Setups**

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

#### **6S ~4000 mAh:**

Motor AXI 5320/18  
 ESC: Jeti Spin 99 Opto  
 Airscrew: 20x8“

#### **6S LiPo ~4500 mAh:**

Motor AXI 5325/16  
 ESC: Jeti Spin 99 Opto  
 Airscrew: 22x10“

#### **8S LiPo ~4000 mAh:**

Motor AXI 5325/20  
 ESC: Jeti Spin 99 Opto  
 Airscrew: 20x10“

#### **10S LiPo ~3200 mAh:**

Motor AXI 5320/28  
 ESC: Jeti Spin 77 Opto  
 Airscrew: 20x8“

### **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
- CA
- blue Loctite ®

#### **4. Warning**

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

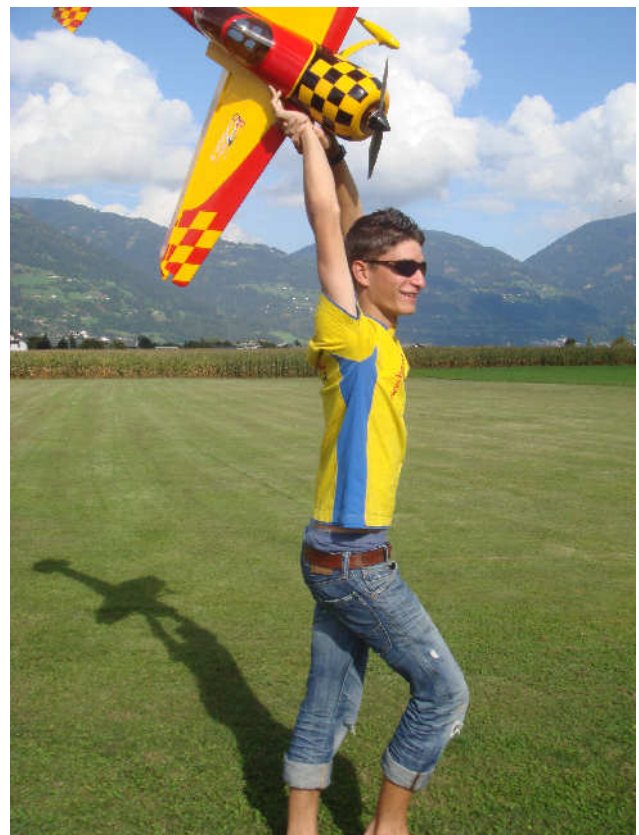
As we have no control over the final assembly or material used for the final assembly, no liability shall be assumed or accepted for any damage of the final user-assembled product. By the act of using the product, the user accepts all resultiong liability.

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.



Happy Landings !

**1. Ailerons, servos and linkage**

Locate following items:

- 5x hinge
- 2x aileron control horn
- 2x aall link M3
- 2x allen screw M3x20
- 2x stop nut M3
- 3x washer M3
- 1x linkage M3 x 55mm



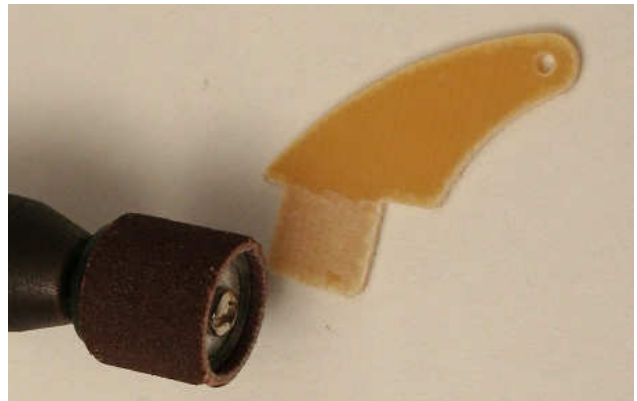
*Picture 1: Aileron / Linkage*

Use a hobby blade to remove the covering over the mounting hole for the aileron control horns if necessary.



*Picture 2: Aileron / Mounting holes*

Grind the part of the control horns that will glue into the aileron slot and glue the control horns in place with epoxy.



*Picture 3: Icon image*

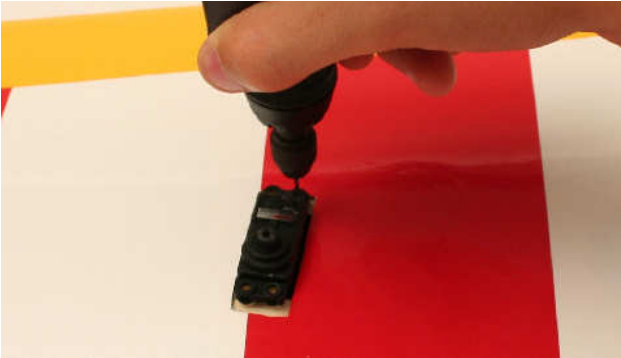
Prepare the hinges for the application. Apply one drop of synthetic oil in their center of movement.

Use 5 minutes epoxy to glue the hinges. Glue them in the aileron before and check the correct sense of work for every hinge.

Check alignment/movement and glue the hinges into the wing panel. Mask the zone of the hinges, if necessary clean the zone with paper towels and rubbing alcohol.

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

If necessary attach servo extension leads and servo lever extensions.



Picture 4: Servo mount



Picture 5: Aileron servo lever extension / example

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

Install and adjust the linkage so the aileron is centered .



Picture 6: Aileron control horn / Detail



Picture 7: Aileron linking

## 2. Rudder and rear landing gear installation

Locate all necessary items.

### **Rudder:**

- 3x hinge
- 4x rudder control horn

### **Rear landing gear :**

- Tailwheel 30 mm
- tail wheel bracket
- fixing plate
- 2x collar M2
- 2x self-tapping screw M3 x 13mm

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!





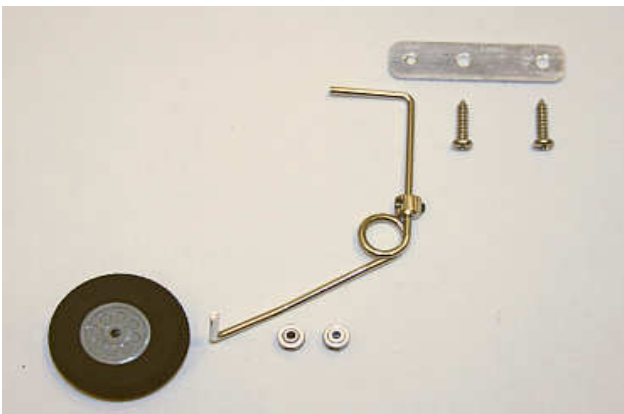
*Picture 8: Distance 20mm*

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.

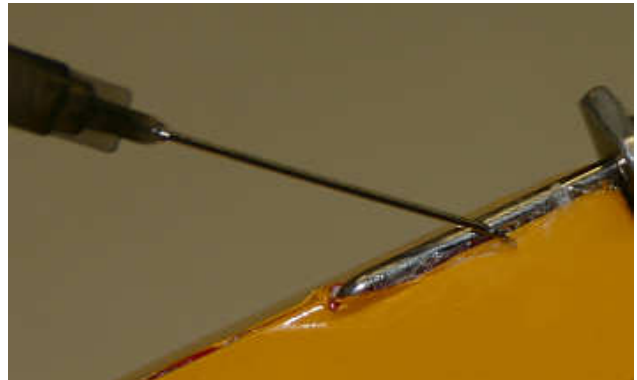
Check alignment of the tail wheel bracket.



*Picture 9: Tail wheel bracket / groove*



*Picture 10: Rear landing gear*



*Picture 11: Tail wheel bracket*

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

As described in the aileron section, 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.

Glue the hinges into the vertical stabilizer – work the rudder left and right and check for proper movement.

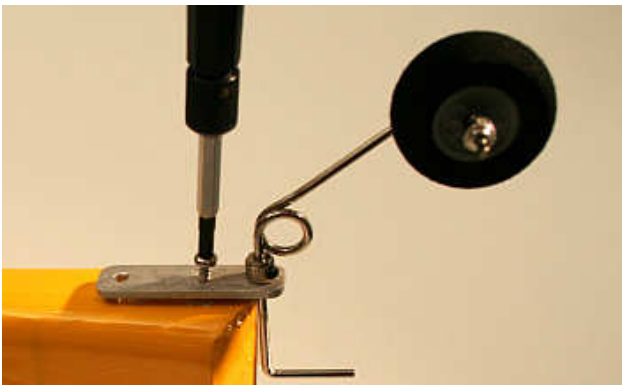
Avoid adhesives on the covering.



*Picture 12: Rudder / Hinge*

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

Position the tailwheel assembly, locate and mark the drill holes. Using a 1.5mm drill, carefully 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.



*Picture 13: Rear landing gear*

### 3. Rudder linkage installation

Locate following items:

- 2-4x rudder control horn (optional)
- 4x ball head M3
- 4x eye screw M3
- 4x washer M3
- 2x wire
- 4x clamping sleeve
- 4x allen screw M3 x 20mm



*Picture 14: Rudder linkage*

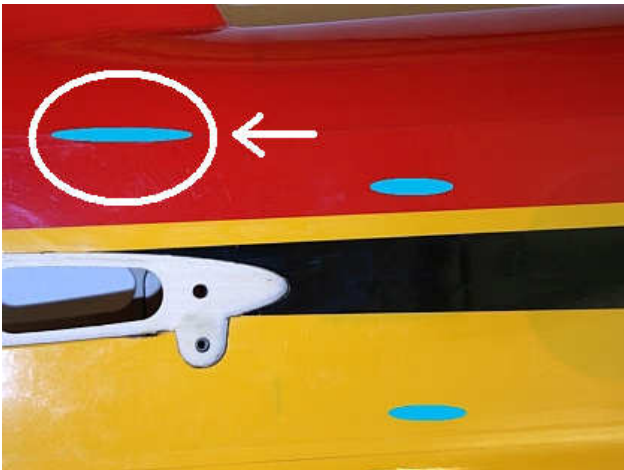
Electronically center your servo, install the rudder servo using the manufacturer supplied mounting screws, gommets and eyelets and route the servo lead.

If necessary, attach a servo extension lead and a servo lever extension.



*Picture 15: Rudder servo*

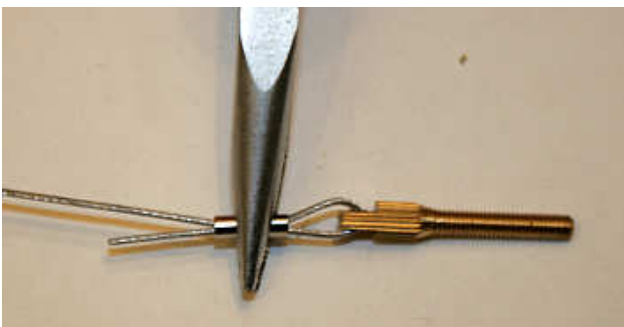
Locate/open the (marked) holes in the fuselage.



Picture 16: Wire Linkage / Detail

Prepare the wire linkage.

Install the rudder wires, attach the ballheads to the eyescrews and connect them to the rudder and servoarm.



Picture 17: Clamping sleeve

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 you can fix the wires/loops directly to the rudder control horns like shown:



#### 4. Elevator – Option1: Wire linkage

*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 >800 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.

- 6x hinge
- 4x elevator control horn GFK
- 4x ball head M3
- 4x eye screw M3
- 4x washer M3
- 4x wire
- 6-8x clamping sleeve (optional)
- 4x allen screw M3 x 20mm





*Picture 18: Elevator / Wire*

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 19: Elevator / Icon image*

As described in the aileron section, glue the hinges into the horizontal stabilizer – work the elevator up and down and check for proper movement.

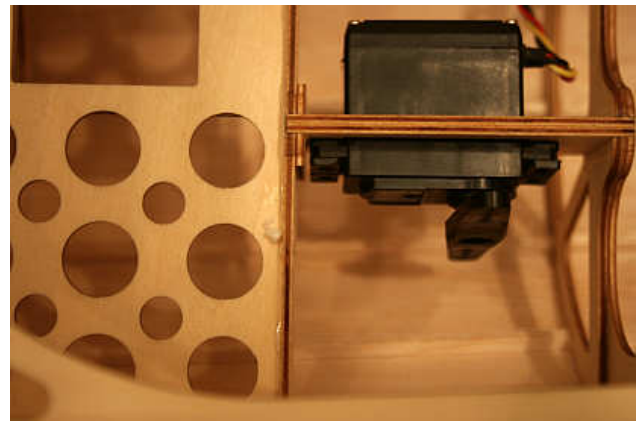
Avoid adhesives on the covering.

Electronically center your servo, install the elevator servo using the manufacturer supplied mounting screws, gommets and eyelets and route the servo lead – mind orientation.

If necessary attach a servo extension lead and servo lever extensions.



*Picture 20: Elevator servo mount*



*Picture 21: Elevator servo*

←← **Direction of flight** ←←

Mount elevators to the fuselage mount and locate / open the holes:

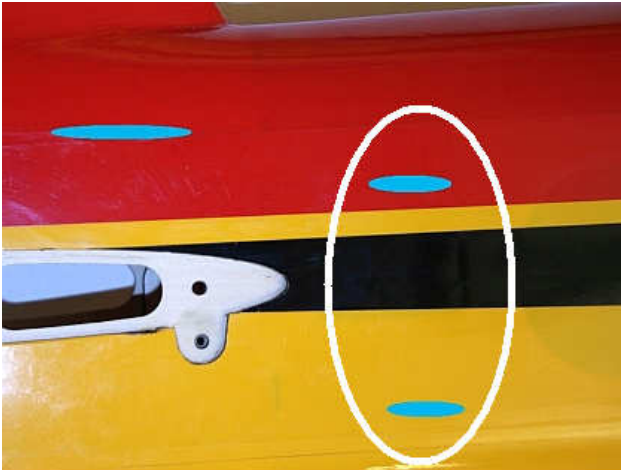


Abbildung 22: Elevator linkage / holes

As described in the „rudder“-chapter prepare the four wires.

It is important to note that both upper and lower cables are led on the same mounting points on the servo arm - otherwise the linkage blocks completely!

We recommend not to use eye bolts at the servo arm – fix the loops directly!

Only very precise work and multiple function testing leads to the desired success!



Picture 23: Elevator linkage / Servo arm



Picture 24: Elevator linkage / Icon Image

### 5. Elevator – Option 2: Pushrod

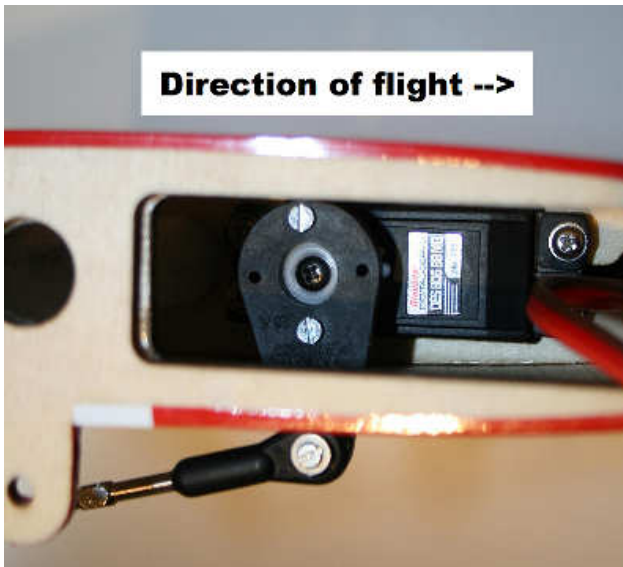
*Find your decision to install either two standard servos to the fuselage side wall or two midi-servos in horizontal stabs – mind CG!*

Locate the necessary parts and items.

- 6x hinge
- 2x pushrod 135mm
- 2x elevator control horn
- 4x ball head M3
- 6x washer M3
- 4x allen screw M3 x 20mm



Picture 25: Elevator / Pushrod



Picture 26: Elevator Servo / Icon image

Locate the position of the control horn and open the covering on the bottom.

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.

Mount the hinges as described in the chapters before.

Use a hobby blade to remove the covering over the servo frame.

Electronically center your servos, install the elevator servos using the manufacturer supplied mounting screws, gommets and eyelets and route the servo leads – mind orientation.

If necessary (e.g. midi-size) use servo frame adaptors as shown.



Picture 27: Elevator servo



Picture 28: Servo frame / Adaptor



Picture 29: Icon image

**6. Main landing gear installation**

Locate all the necessary items:

- 1x landing gear
- 2x wheel
- 1x cover
- 2x wheel pant
- 2x axle
- 6x stop nut M4
- 6x washer M4
- 4x collar M4
- 4x allen screw M4
- 2x self-tapping screw M2,5x 10mm



*Picture 30: Main landing gear / parts*

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

Fix the gear to the fuselage using screws and washers.

Adjust the wheel pants on a flat surface.



*Picture 31: Wheel pant*

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



*Picture 32: Wheel pant / Detail 1*



*Picture 33: Wheel pant / Detail 2*



**7. Electric motor installation / example**

To get the best flight characteristics, we recommend the use of an AXI 5320 / 5325 motor and a Jeti Spin 99/77 Opto ESC.

All mounting points are already prepared for these drives and no additional adaptors are required.

Strictly follow the manufacturer's rules when mounting your drive and ESC and note the necessary airflow for cooling!



*Picture 35: AXI 5320/18*



*Picture 36: Firewall / Detail 1*



*Picture 37: Firewall / Detail 2*



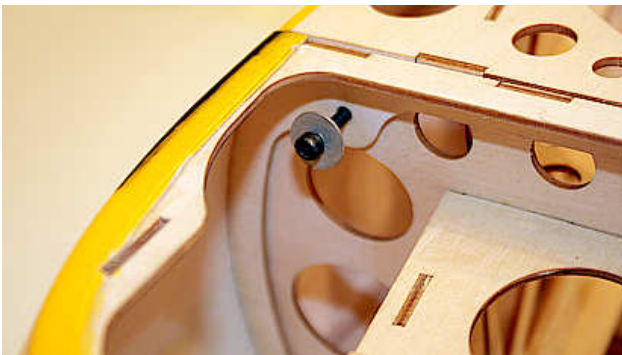
*Picture 38: Motormount*



**8. Cowling, Spinner**

Locate following items:

- 2x allen screw M3 x 20
- 2x washer M3
- engine cover (optional)



*Picture 39: Cowling*

When needed adjust spinner to the motor shaft and airscrew.



**9. Control throws and CG**

- Aileron 55mm, 45% Expo
- Elevator 35mm, 40% Expo
- Rudder 55mm, 50% Expo
- MIX Rudder left/right → Elev 7% UP
- Recommended CG: 155mm (~6") behind the leading edge of the wing against the fuselage

**10. Preflight**

Before the flight, 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!***