

**H·KING**

# **WARGO** **YAK-55**

## **INSTRUCTION MANUAL**



**For intermediate and advanced pilots only.**

Specifications are subjected to change without notice  
due to product continuous improvements.



## WARNING:

Read this instruction manual fully so as to become completely familiar with the features of this product before operating. Failure to operate this product correctly could result in damage to the product, personal property and cause serious injury. This is a sophisticated hobby product and is NOT a toy. It must always be operated with caution, common sense and some basic mechanical ability. This manual provides instructions as the the assembly, safe operation and maintainence of this hobby product. It is highly reccommended that you follow and read fully the instructions and warnings stated in this manual including safety, assembly, set-up and flying guidelines in order to operate this product correctly and avoid damage or serious injury.

## SAFETY PRECAUTIONS:

As the user of this product you and you alone are responsible for operating it in a manner that does not endanger yourself and others around you or result in damage to the product or property of others. This product is operated via a radio controlled system that in some cases can be subject to interference from sources outside of your control. Interference may result in a momentary loss of control so it is always recommended that this product be used in a suitably open outdoors space.

- This is a radio controlled flying model and as such must always be flown with caution and care. This is not a toy.
- This model is designed for intermediate to advanced pilots.
- Alway exersie great caution when using the recommended battery to power this product. For full safety notes and operating procedures, please see information provided by your battery supplier.
- Take great care when connecting/disconnecting the battery. See battery supplier for full safty procedures.
- Never power up the model in confined spaces and always keep the props clear of obstructions.
- This product is not a toy. Children must be accompanied by an adult at all times if operating this product.
- Only fly this model in an open area away from crowds, people, buildings, tree's, power lines and obstructions.
- Always put safety first when operating this model and consider the warnings stated above.
- The supplier/manufacturer accepts no responsibility for damage or injury caused through the use of the product. Not suitable for children under the age of 14. THIS IS NOT A TOY.

The Wargo Signature Yak 55 is the realization of my goal to have the perfect 3D and aerobatic training aircraft. I have dedicated a lot of my flying career to teaching 3D aerobatics and helping pilots learn how to become better pilots. I have also dedicated myself to trying to develop the ideal transition and training 3D plane. Finally, we offer you the Wargo Yak 55. It is a perfect combination of value, performance and durability with no compromises in aerobatic precision and the ability to perform every 3D aerobatic maneuver with authority. I wanted an economical and durable practice aircraft that can take a pilot from sport flying to confidently flying 3D aerobatics.

The result is a phenomenal plane that will hover, harrier and tumble incredibly well. Any accomplished 3D pilot will love this plane because it will satisfy the most discriminating pilot. It will perform maneuvers ultra-light foamies cannot because it has enough mass to carry momentum and perform more high-energy and tumbling type of maneuvers.

The Yak 55 is also a perfect next step toward getting confident with larger balsa planes. It is designed to perform like a balsa plane with the durability of a foamy. Best of all, most mishaps can be repaired in seconds with a bit of glue, and you are ready to fly again.

The Wargo Yak 55 a blast to fly, and because it takes the fear of hitting the ground, it lets you try aerobatics you cannot with your high-end balsa models. I hope you enjoy flying your new plane as much as I enjoy it.

Happy Flying

A stylized, handwritten signature in black ink, appearing to read 'Mark Wargo', written over a horizontal line.

For Kit version:

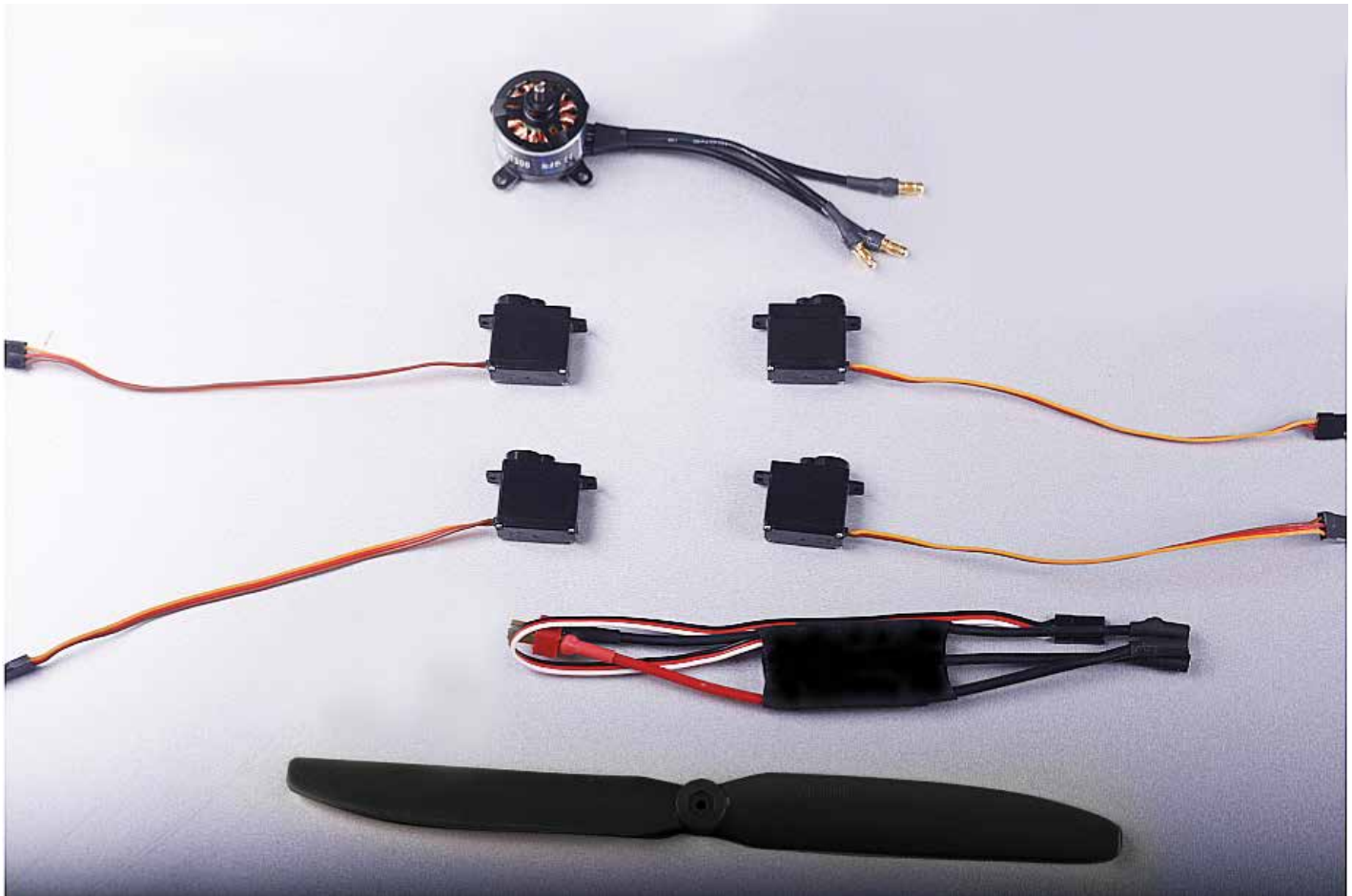


## Parts included in the kit:

1. Fuselage - 1pc
2. Wing with aileron (right and left) - 2 pcs
3. Rudder (vertical tail) - 1pc
4. Elevator (stabilizer) - 1pc
5. Landing gear plus wheels
6. Carbon rod wing spar - 1pc
7. Z-Bend 1.5mm\* 200mm - 4pcs
8. Screw 3\*10 - 4 pcs
9. Screw 2\*3 - 4 pcs
10. Control horn - 4 pcs
11. Extension arm - 4 pcs
12. Pushrod connector - 4 pcs
13. Plywood servo mount - 4 pcs
14. Rubber band - 2 pcs
15. Fiberglass tail skid.



**For PNF Version:**



## **Product Specifications:**

**Fuselage length:** 1080mm (42.15 in.)

**Wingspan:** 1096mm (43.1 in.)

**Flying Weight:** 690 – 760 grams (with battery)

**Motor:** Turnigy Aerodrive SK3 - 3530-1150kv  
Brushless Outrunner Motor or HobbyKing  
Donkey ST3007-1100kv Brushless Motor

**ESC:** Aerostar 30A Electronic Speed Controller  
with 2A BEC (2~4S)

**Propeller:** 10\*4.7 SF or 11\*4.7 SF

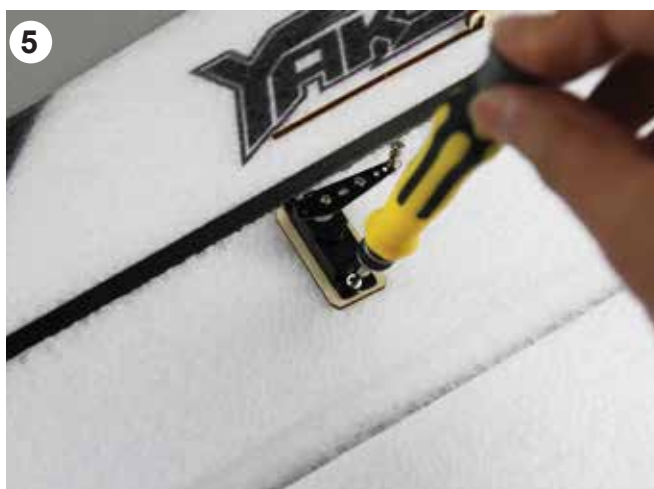
**Servo:** 9-12 grams micro servo - 4 pcs

**Radio:** 4 or more channels

**Battery:** 11.1V 3S 1300 – 1800 mAh  
Li-Po 25C



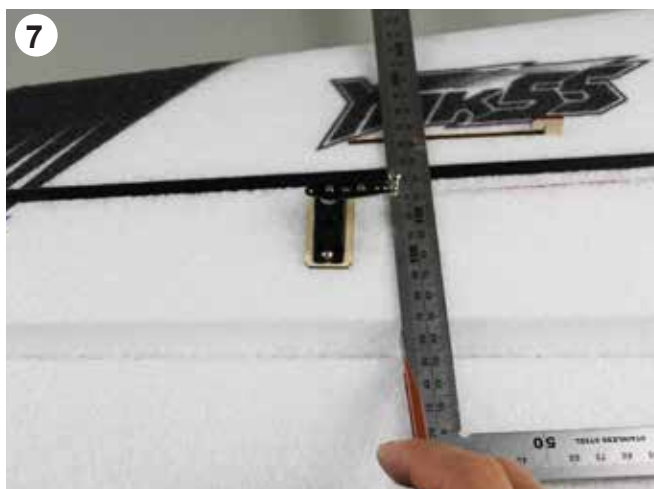
Fit the fiberglass servo extension arm onto the nylon servo arm with screws provided



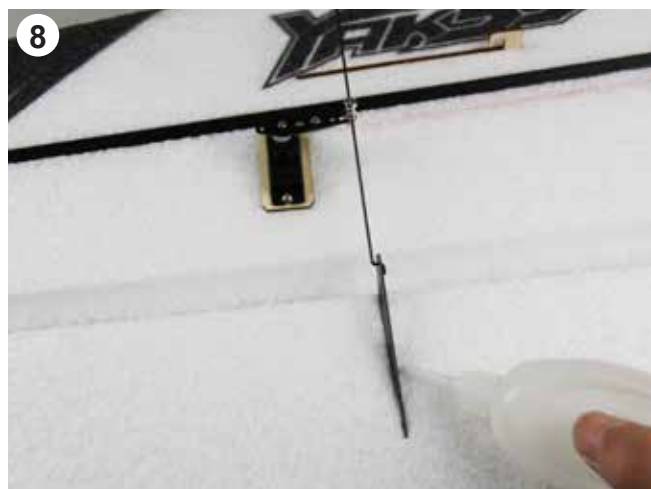
We will make the right wing first. Insert the aileron servo and servo mount to the pre-cut servo slot. Ensure those servo wires are properly organised during the installation.



Apply CA glue to the servo mount.



Cut a slot on the aileron strip which is perpendicular to the servo arm with a hobby knife as picture shown.



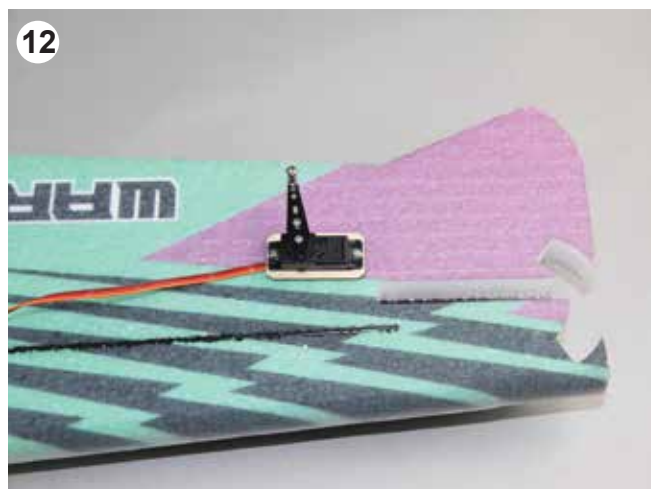
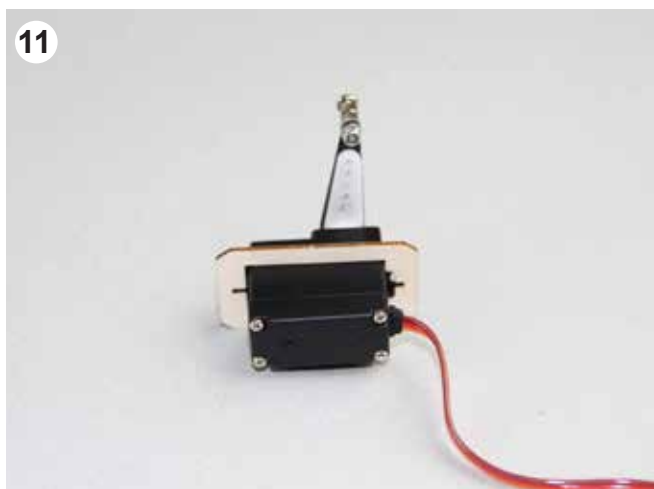
Glue the control horn as shown. Attach the "Z-bend" pushrod to the control horn and lock it with the pushrod connector.



Trim the excess pushrod wire with a wire cutter. Then smooth the cut with a file.



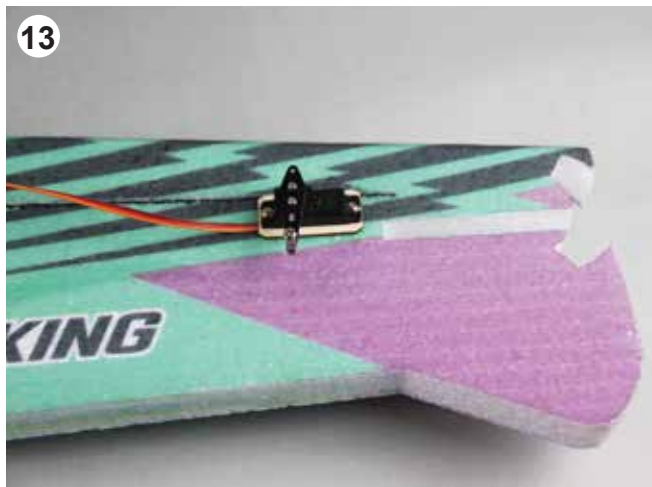
Please repeat the above steps for the left wing.



Install the elevator servo with the servo mount as shown.

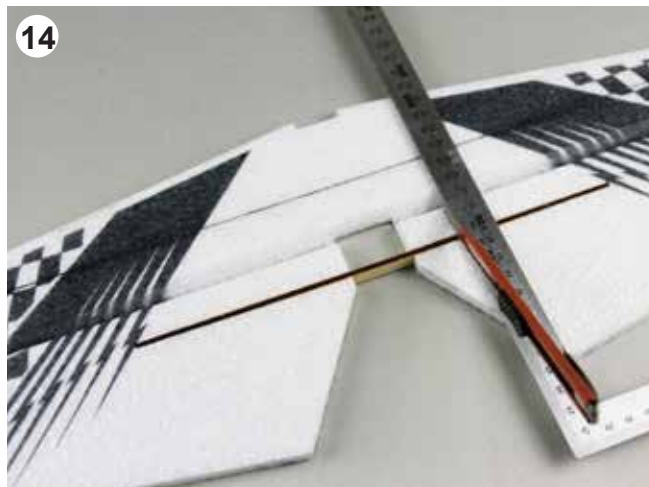


13



Install rudder servo with servo mount on the rear part of the fuselage as shown.

14



Cut a slot for the elevator control horn as shown .

15



Trail fit the elevator onto the fuselage. Ensure it is straight and level to the fuselage and main wing. Then apply CA glue to the joint between the elevator and fuselage.

16



Install "Z-bend" pushrod to the control horn and lock it with the push rod connector. Then apply CA glue to the control horn.

17



Tighten the grub screw and loctite it.

18



Install the vertical stabiliser to the fuselage. Please ensure that it's perpendicular to the horizontal stabiliser.





Glue the rudder in place as shown.



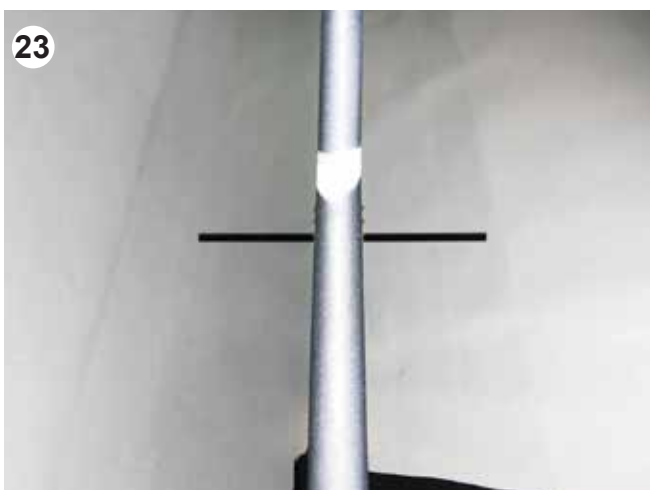
Use the same technique as shown above to prepare the control horn installation on the rudder.



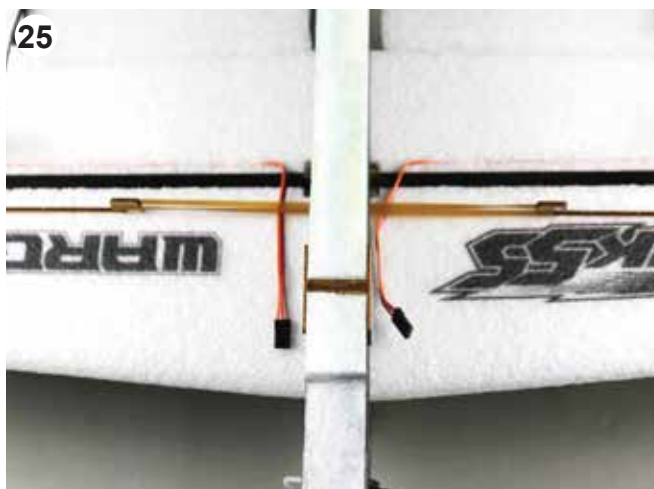
Apply CA glue to the rudder horn.



Install "Z-bend" pushrod as shown and lock it with the pushrod connector.



Insert carbon wing spar to one of the wing panel. Then insert it to the wing mount on the fuselage and put the other wing panel on and make sure it is well balanced and true to the fuselage.



There are two ways to fix the wings onto the fuselage.

1. Connect the wings with two rubber bands as shown in picture #25. You can remove the wings during transportation and for easy storage.
2. Apply slow curing epoxy to the wing root, wing spar and bond both wings and fuselage together permanently for ultimate flying performance.



Install the landing gear on the gear mount.



Install the brushless motor onto the motor mount and secure it with 4 tapping screws provided with the kit.



Install the ESC onto the fuselage and secure it with a zip tie.

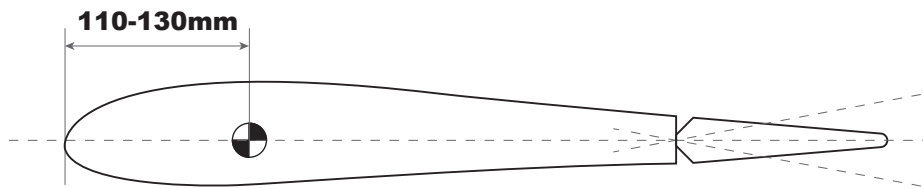


Secure the battery flight pack to the fuselage with the velcro band provided.



Glue the supplied fibreglass tail skid strengthener to the fuselage as shown.

**C of G:** 110-130mm from wing leading edge.



### Travel Settings:

Each Flight control must be set to its physical limits. This means as far as it will go, but no farther than it has to. You set this by selecting the servo, fully deflect the surface with the transmitter, then increase (or occasionally decrease) the percentage to where the flight surface will not travel any further. Then simply back off a click or two and you are done. Then, simply deflect it in the opposite direction and repeat the process. This must always be done for Rudder, ailerons, flaps and elevators. Your travel/end point settings must be above 100% to achieve full performance from each servo.

### Rates and Exponential:

All rates at 100% for full 3D flying. I suggest your expo settings for full 3D will be 60% as a starting point. Adjust to your preference after flying.

### My personal settings:



I use a little trick where I put the stick at one third and set to where when I switch between rates the surface hardly changes. Obviously at the end points it is an enormous difference.

My personal expo settings for low rates is in the 20% range for an aerobatic plane and half that for a war bird, and in the 60% to 70% range for high rates for 3d and near 40% for warbirds. Again, this is highly dependent on the plane and this is a general guideline only, and is my personal preference.

**Please turn to the last page and get the  
Field Quick Guide. You can cut and  
laminate and take it to the field.**



[illegible]

## This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.





## Field Quick guide



### Basic setup Quick Guide

This Quick guide is an easy way to develop a standard setup procedure guaranteeing accurate settings and a successful experience.

#### 1. Basic Setup

- Servo Reversing. Just check the direction of movement, and reverse accordingly.
- Check that all servo arms are centered to 90 degrees.
- Sub trimming: Always sub trim to 90 degrees and mechanically center the flight control surface the best you can. Then sub trim to be perfectly centered.

#### 2. Travel Adjust or endpoint adjustments

- Each Flight control must be set to its physical limits. This means as far as it will go, but no farther than it has to. You set this by selecting the servo, fully deflect the surface with the transmitter, then increase (or occasionally decrease) the percentage to where the flight surface will not travel any further. Then simply back off a click or two and you are done. Then, simply deflect it in the opposite direction and repeat the process.

#### 3. Rates and Exponential Settings.

- The rates will accurately reflect the percentage of the full range of deflection after the travel adjust settings are correct. We must set at least 2 rates. High rates are full deflection (with more expo). And Low rates are usually in the 30% to 50% with little expo. I always take off and land on high rates in case of flight failures or in case I should need all I can get when flying slow.
- Exponential: With exponential you can make it so the stick movement at the center deflects very little and feel soft like low rates, and at the last part of the stick travel it deflects the surface dramatically. My personal settings are set to where I can hardly tell which rate I am on until I get the stick toward the end where the difference is dramatic. I use a little trick where I put the stick at one third and set to where when I switch between rates the surface hardly changes. Obviously at the end points it is an enormous difference.

My personal expo settings for low rates is in the 20% range for an aerobatic plane and half that for a war bird, and in the 60% to 70% range for high rates for 3d and near 40% for warbirds. Again, this is highly dependent on the plane and this is a general guideline only, and is my personal preference.

**Note:** JR exponential is set to + and Futaba is -. i.e. +60% or Futaba -60% to achieve the same result. Setting Futaba radio to a plus number will result in a dangerously sensitive condition and vice versa for JR.

— Michael Wargo



Made in China