

# Savage BOBBER



## INSTRUCTION MANUAL

H-King Savage Bobber 1000 mm 5ch ARF Version

**H·KING**

Please read this manual carefully before operating this plane.

## WARNING:

Read this instruction manual fully so as to become completely familiar with the features of the 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 on the assembly, safe operation and maintenance of this hobby product. It is highly recommended that you read and follow 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 suitable open outdoors space.

- This is a radio controlled flying model and as such must always be flown with caution, this is NOT a toy.
- Always exercise great caution when using the recommended battery to power this product. For full safety notes and operating procedures please read the information provided by your battery supplier.
- Take great care when connecting/disconnecting the battery. Once again see your battery suppliers information for the full safety procedures.
- Never power up the model in a confined space and always keep the propeller clear of obstructions, clothing and parts of your body.
- This product is not a toy, children must be accompanied by an adult at all times when operating this product.
- Only fly this model in an open area away from crowds, people, buildings, trees, power lines, roads, airports and other 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 this product. A reminder that it is not suitable for children under the age of 14. THIS IS NOT A TOY.



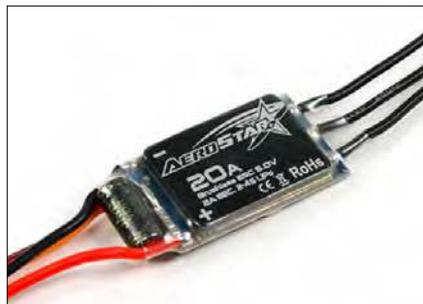
## FEATURES:

- Skillfully hand-crafted construction
- Crystal clear plastic windshield
- Carbon wing joiner, and wing struts
- Colorful factory-applied self adhesive decals
- Scale wheels with oversized tires
- Factory-applied covering film
- Vacuum formed plastic engine cowling
- High-quality comprehensive hardware pack
- Pre-slotted hinge pockets

- Wingspan: 1000mm
- All Up Weight w/Battery: 650g depending on set-up
- Servos: 6 x 3~6g
- Propeller: 8x5
- Length: 700 mm
- Motor: 2826 1130 KV
- ESC: 20A with BEC
- Battery: 1000~1300mAh 3S LiPo



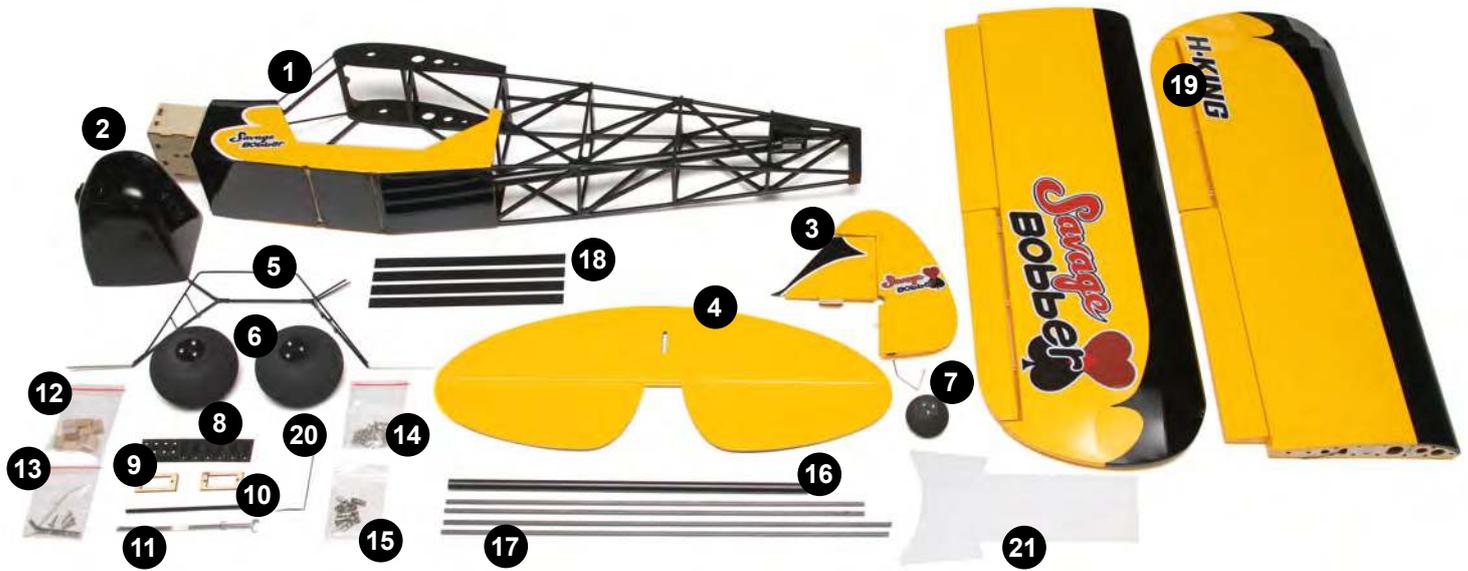
SK3 2826 1130 KV  
Brushless Outrunner Motor  
SKU: SK3-2826-1130



Aerostar 20A with BEC  
SKU: 9164000034-0



HXT500 Micro Servo  
1.2kg / 0.10sec / 5g  
SKU: HXT500

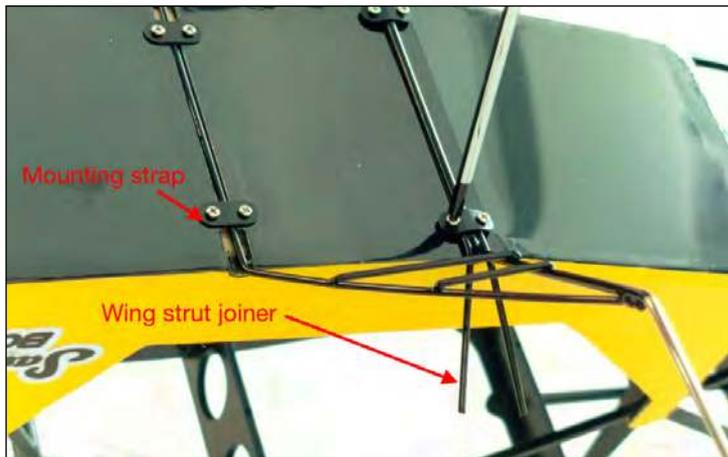
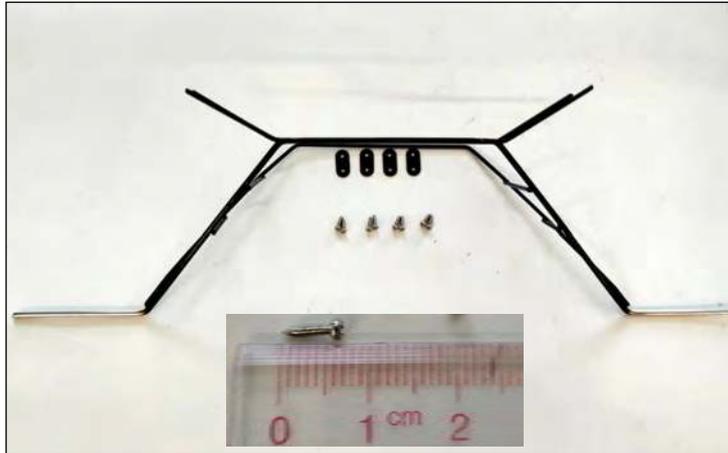


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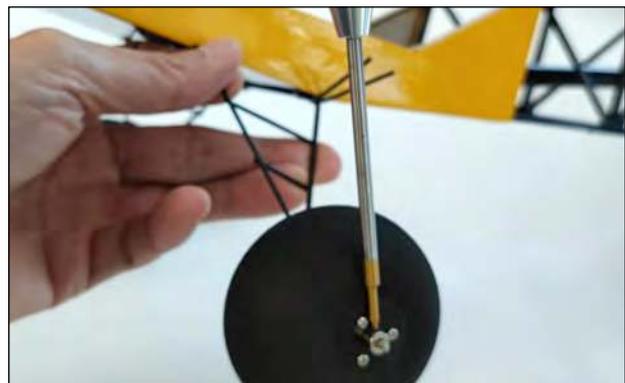
## LANDING GEAR INSTALLATION:

Remove the landing gear mounting strap from the supplied fiber sheet and find the M1.5x6 tmm self-tapping screws in one of the accessory bags. Attach the wire landing gear to the fuselage using the self-tapping screws to secure it in place. Note: The set of wing strut joiners on the landing gear should be positioned towards the rear of the fuselage.

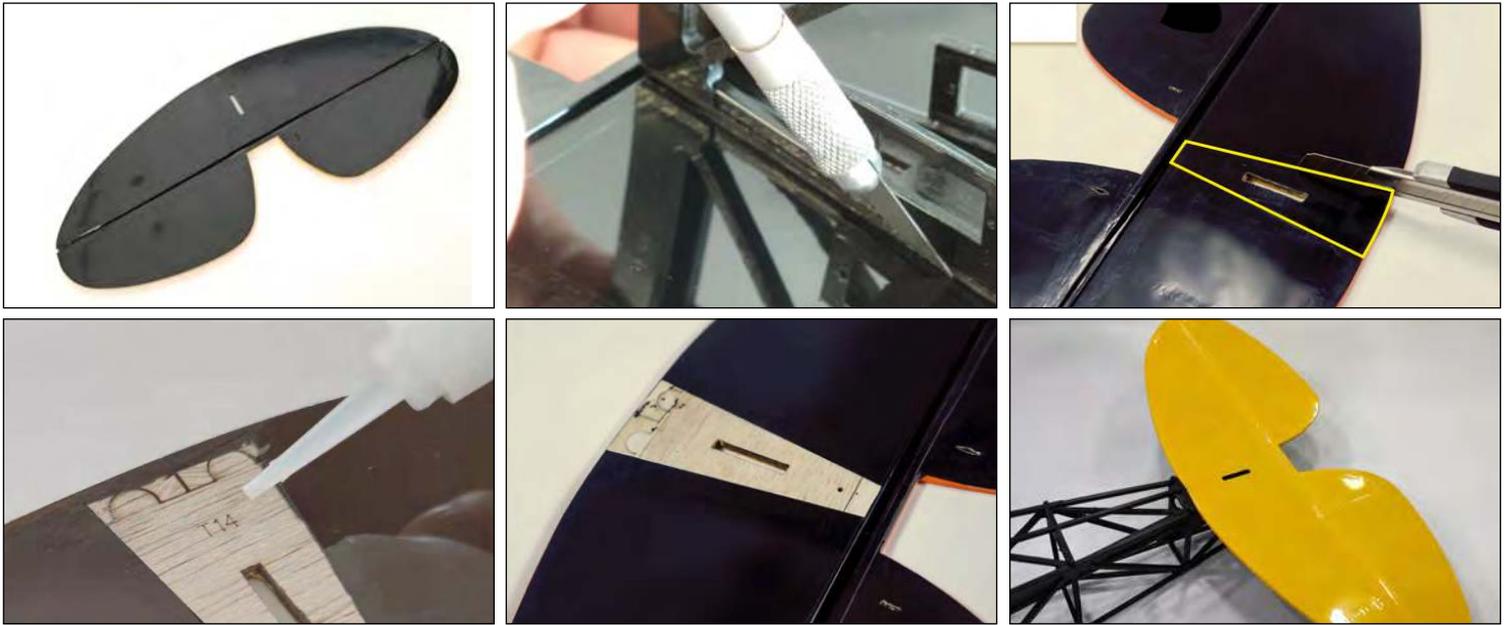


## WHEEL INSTALLATION:

Install and secure the set of wheels by using the supplied wheel collars as shown. After installation, spin the wheels to see if there is any friction and adjust the wheel collars accordingly. If need be, use a 2.0 mm drill bit to slightly enlarge the hole size or adjust the wheel collars to ensure the wheels spin freely. Apply a small spot of thread lock glue to the grub screws on the wheel collars to prevent them from loosening in flight.



## HORIZONTAL STABILIZER AND VERTICAL RUDDER INSTALLATION:

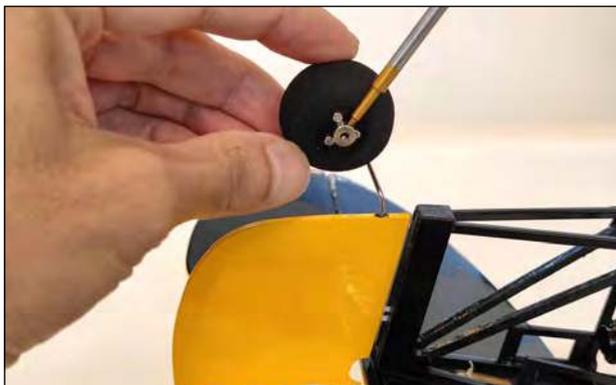


Firstly, dry fit and tape the horizontal tail onto the fuselage. secondly, align the stabilizer accordingly to ensure it is true and square to the fuselage. Then use a hobby knife and gently cut through the covering. Finally, peel off the covering and it's ready for installation. Apply CA glue to the bare wood area you have exposed on the stabilizer and attach it to the rear of the fuselage.

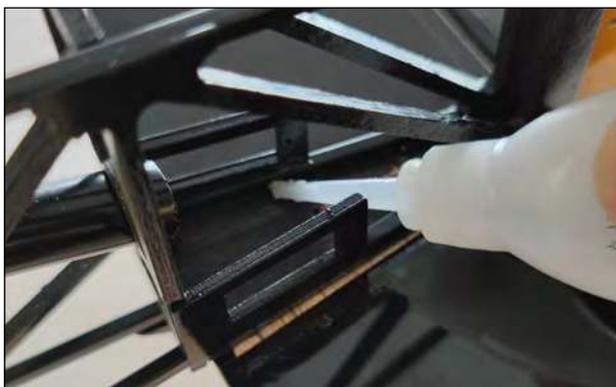




Dry fit the rudder/fin assembly onto the horizontal stabilizer, ensure they are perpendicular to each other. Once you are satisfied with the fit, apply CA glue to the fin to secure it in place. Then install hinges half way into the pre-slotted hinge pockets in the rudder by applying a small amount of thin CA glue as shown, wait until it has thoroughly dried. Install the rudder to the fin, and slide the hinges into the hinge pockets on the fin. Use a hobby knife to enlarge the hinge pocket if needed to allow it to align properly. If the installation looks good, apply a small amount of thin CA glue to secure it in place. Check frequently if it moves freely as glue sets.



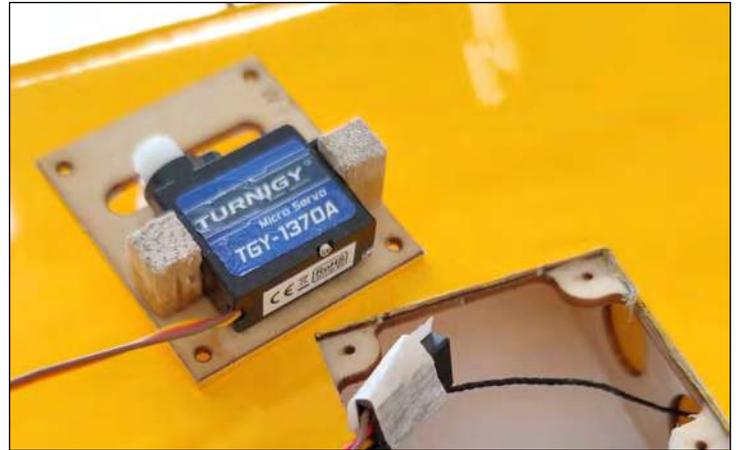
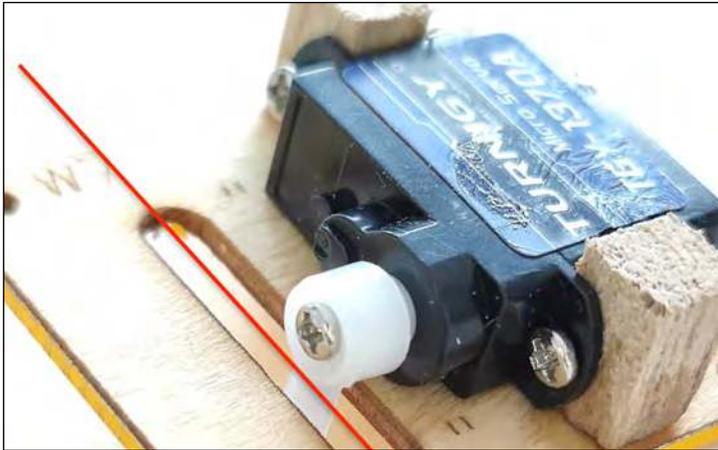
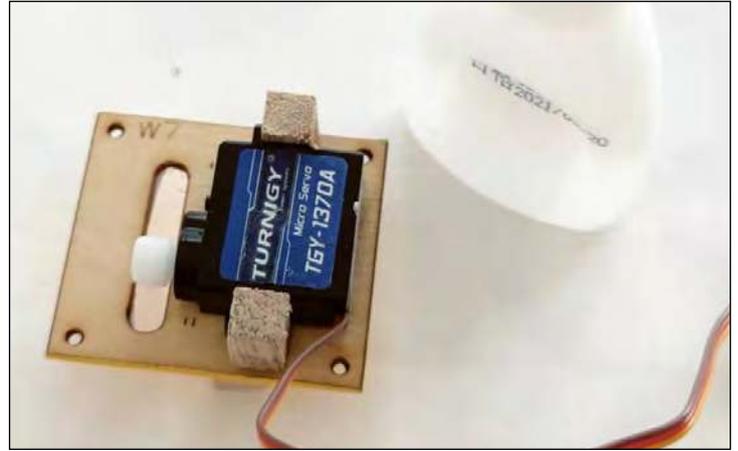
Install the tail wheel onto the rudder landing gear wire and use the supplied wheel collar to lock it in place. Apply a small amount of thread lock glue to the grub screws to prevent them from loosening in flight.



At this point, reinforce the joint in the seam between the stabilizer and the tail structure by running in a thin layer of medium CA glue.

The empennage and the landing gear setup is now complete.

## AILERON SERVO & FLAP INSTALLATION:

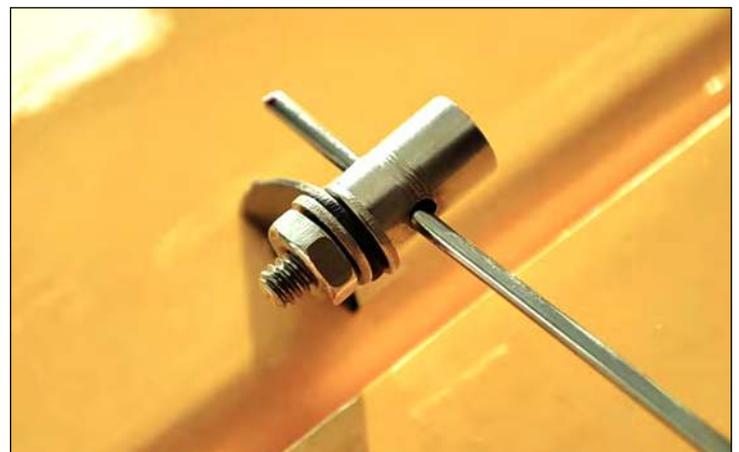
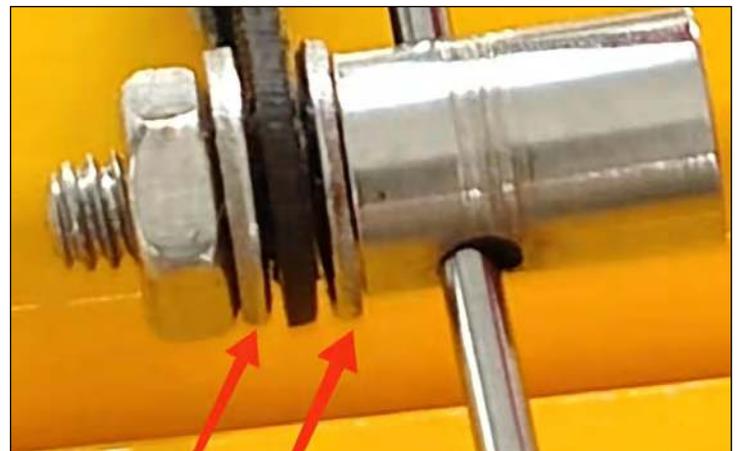
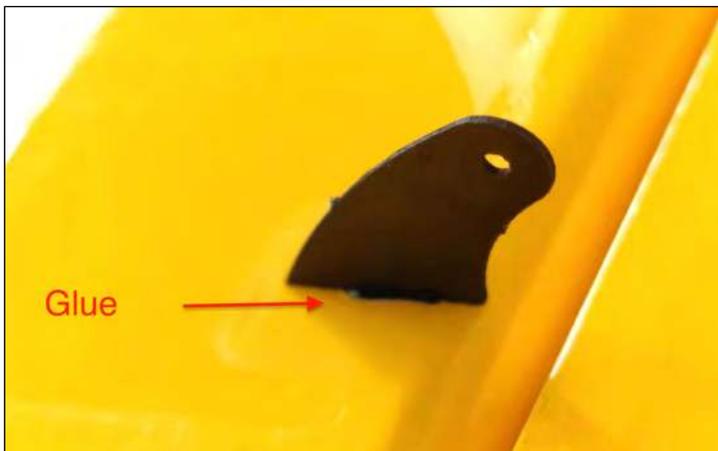
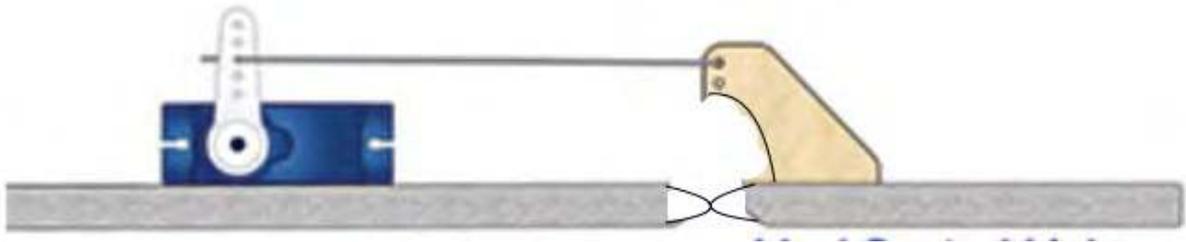


First, make a cut in the covering at the servo horn opening and trim the area neatly on the servo mounting plate with a hobby knife as shown. Secondly, position the servo in the center on the servo mounting plate, and glue the supplied wooden mounting blocks onto the mounting plate as shown. Ensure the servo horn sits right in the middle of the opening without any interference of the servo arms movement whilst the glue dries. After that, install the aileron servo by using the self-tapping screws which come with your servo. Finally, get a piece of masking tape to hold both the servo lead and the piece of thread which is buried inside the wing together. This will then allow you to slowly pull the servo lead through the wing and out of the wing root fairly easily. **Note:** If using 5 or 6g servos then you will need to adjust the servo mounting as necessary to enable them to fit.



Install the flap servos in the same way as the aileron servos, but please note the difference when fitting the flap control horns. These are installed in reverse to the normal direction, this is to allow you to achieve a full 90° movement of the bottom hinged flaps for real slow flying and steep approaches.

## CONTROL HORNS AND PUSHROD LINKAGES INSTALLATION:

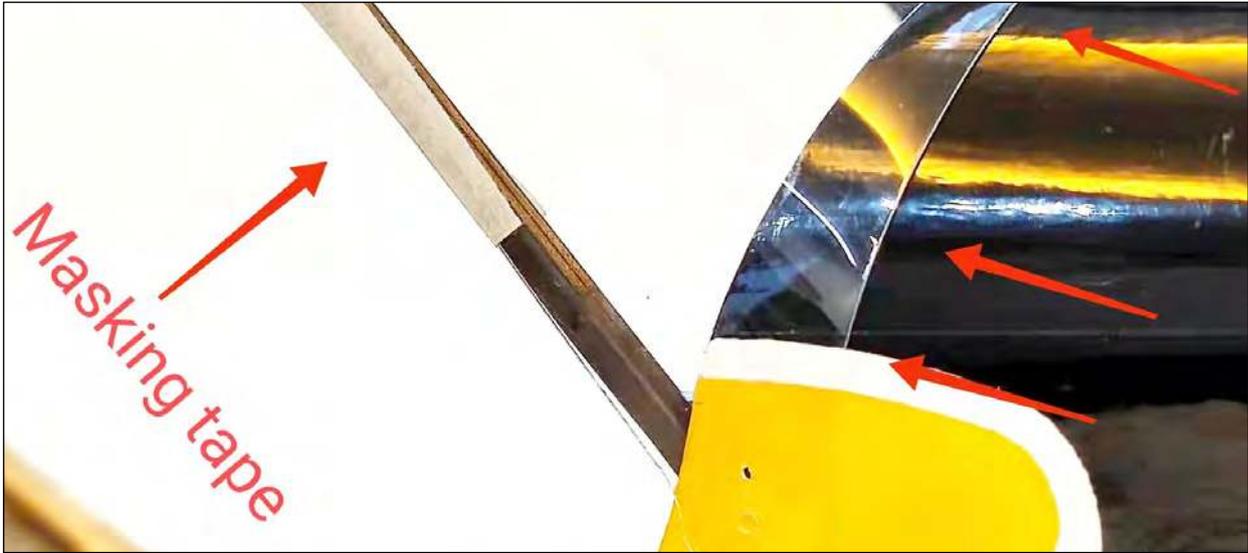


Apply medium CA glue to the surface control horn and stick it into the slot as shown. Once the glue has set, install a supplied pushrod stopper onto the control horn. In order to get the best mechanical linkage setup, first of all ensure that the servo control horn is perpendicular to the servo case. Then connect the pushrod to the servo control horn and connect the pushrod stopper as shown. Get a piece of masking tape to hold the control surface straight and level and then tighten the grub screw with a hex-key. Apply a small spot of thread lock glue on the grub screw threads, and trim off the excess pushrod length with a pair of wire cutters.

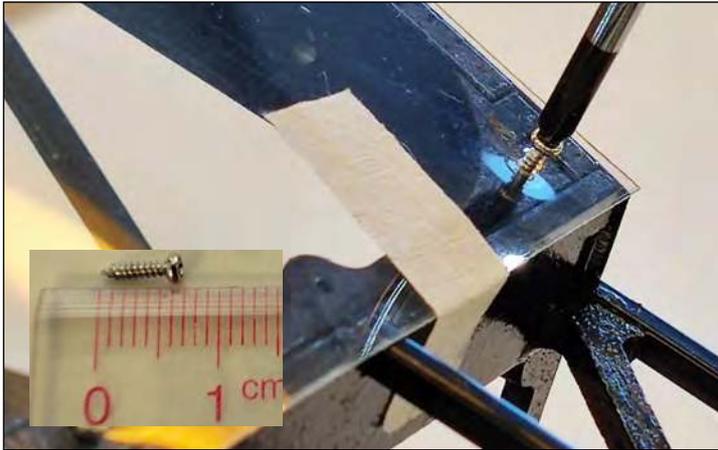
## FLAP SERVO INSTALLATION:

Repeat the above steps for the flap servo installation.

## COCKPIT WINDSHIELD INSTALLATION:

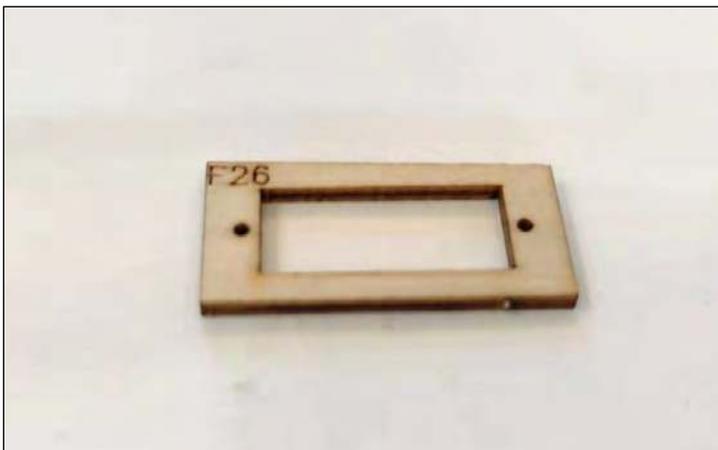


Install the factory pre-cut PVC windshield onto the fuselage cockpit area. Use masking tape to hold the windshield in place on the cockpit frame as shown in the pictures, do this on both sides. Ensure the PVC sheet is evenly positioned on the turtle deck in front of the cockpit. Adjust the windshield as necessary to achieve the best fit.



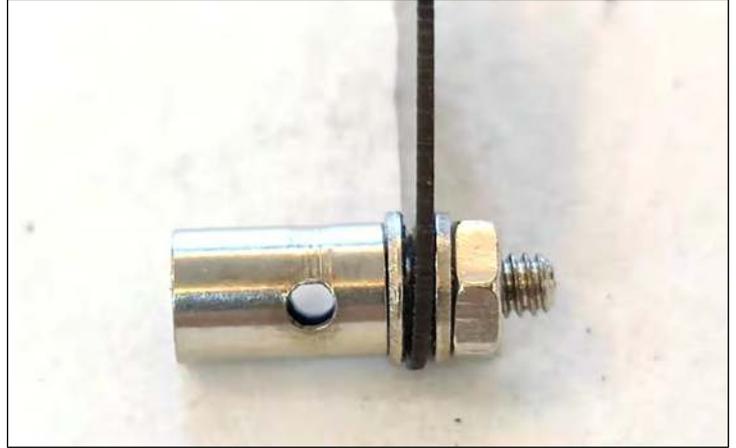
Then tape the other end to the rear part of the wing saddle. Once you are satisfied with the overall fit and placement of the PVC windshield, secure it in place using the supplied M1.5x6 mm self-tapping screws.

**ELEVATOR AND RUDDER SERVO INSTALLATION:**

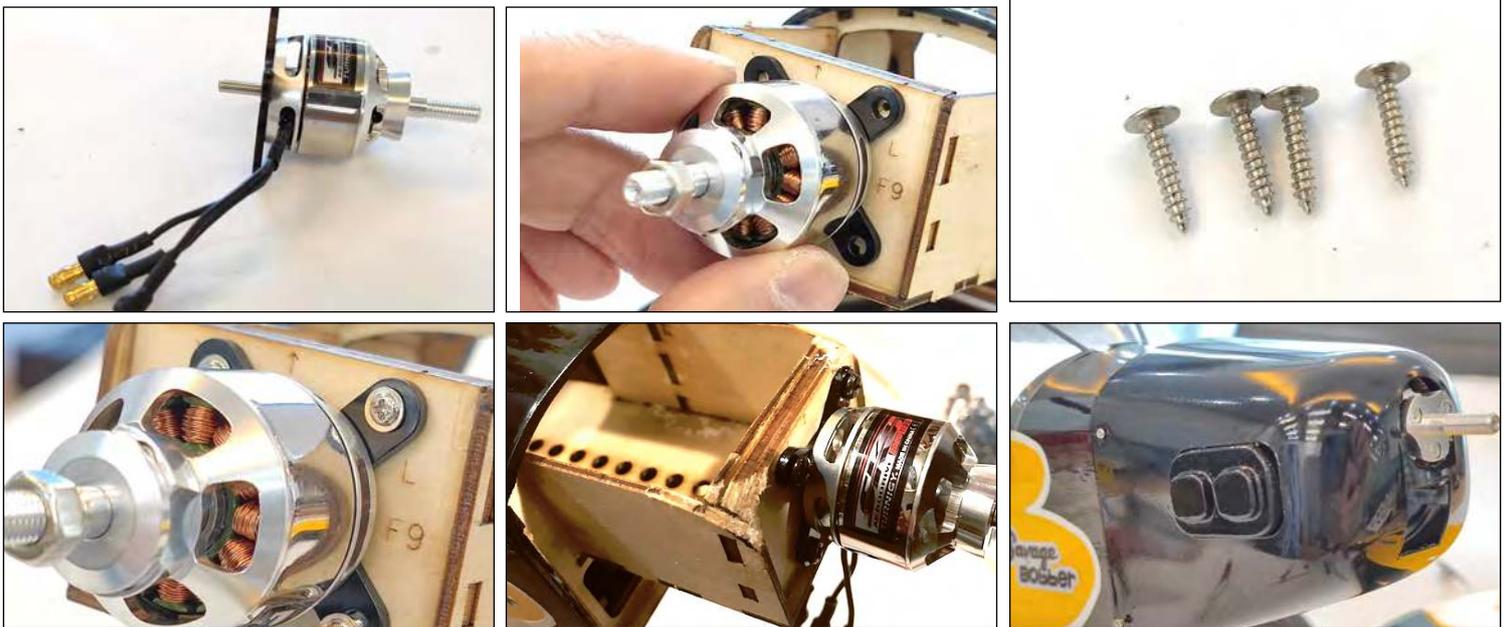


Before installing the elevator servo, feed the servo lead through the plastic tube from the tail servo mount at the rear of the fuselage to the main radio compartment. A couple of standard servo extension leads or a single longer one are required for this setup. Using a medium CA glue, glue the supplied control surface horn to the elevator. This kit includes a couple of servo mounting spacers (F26), these are required if using the larger 5 or 6g servos which need a bit more room in the tight servo compartment at the tail. However, if you are using smaller size servos, then these spacers should not be required.

Connect the pushrod to the servo control horn and connect the pushrod stopper as shown. Get a piece of masking tape to hold the control surface straight and level, then tighten the grub screw on the stopper with a hex key. Apply a small spot of thread lock glue where necessary. Trim off the excess pushrod length with a set of wire cutters.

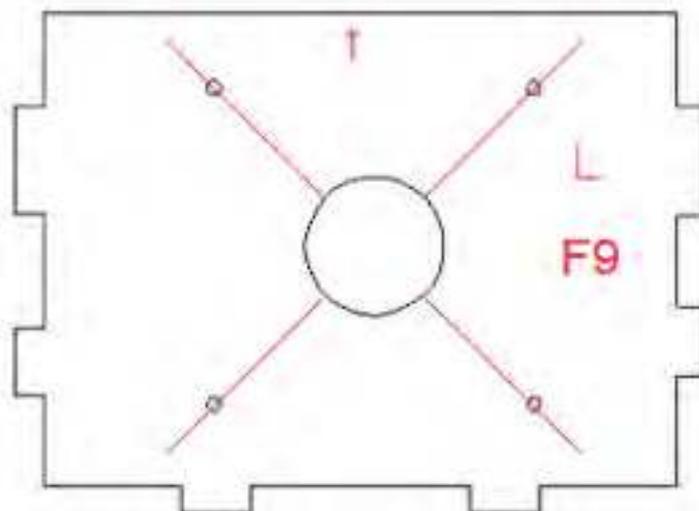


Repeat the above steps for the rudder servo pushrod linkage installation.



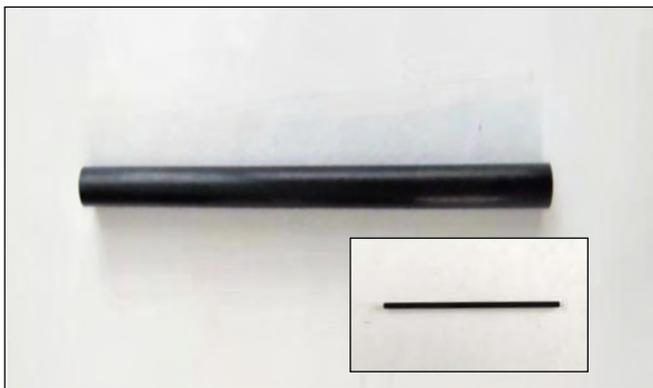
First of all, install the X mount to the motor. Then position it to achieve the correct motor offset, thrust line as indicated by the red arrow on former F9. Secure the motor in place by using the supplied M3 x10 mm self-tapping screws.

The firewall on the Savage Bobber has a built-in 3 degrees of right thrust. This is a good starting point for the recommended propeller size. If you feel you need a little more right thrust angle, you may add additional washers top and bottom of the X mount on the left hand side to achieve even better straight and level flight flying trim.

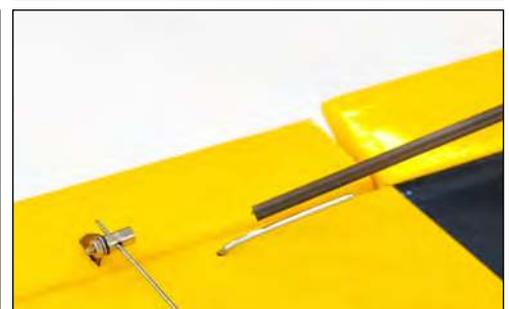


Finally, trial fit the cowling onto the fuselage and adjust accordingly to get the proper fit. To make the adjustment and set-up easier we recommend that you use some masking tape to hold it in place. Set it so that no rubbing occurs between the prop adapter and the front of the cowling. If you find that the cowl is raised at the front and the firewall is pushing against the inside of the cowl, gently sand the top corners of the firewall until you have a satisfactory fit. We suggest you apply a thin layer of medium CA glue to the seam inside the motor box and the sanded area for added strength. Once you are satisfied with the fit, secure the cowling onto the fuselage by using the supplied M1.5 x 6 mm self-tapping screws.

## MAIN WING INSTALLATION:



Insert the supplied 8 mm x 265 mm and 3 mm x 85 mm carbon fiber wing joiner onto the fuselage wing saddle as shown. Install the left wing onto the fuselage.





We have supplied a set of carbon fiber wing struts. Identify the longer one for the rear wing strut and the shorter one for the front. Two additional metal fittings are also required for the installation. Install the carbon fiber wing strut (rear) to “A” and insert the metal fitting onto the other end. Then insert it into the pre-drilled hole on the underside of the wing, ensure the metal fitting is fully inserted. You may have to use a pair of pliers to make some adjustments to achieve a proper fit.

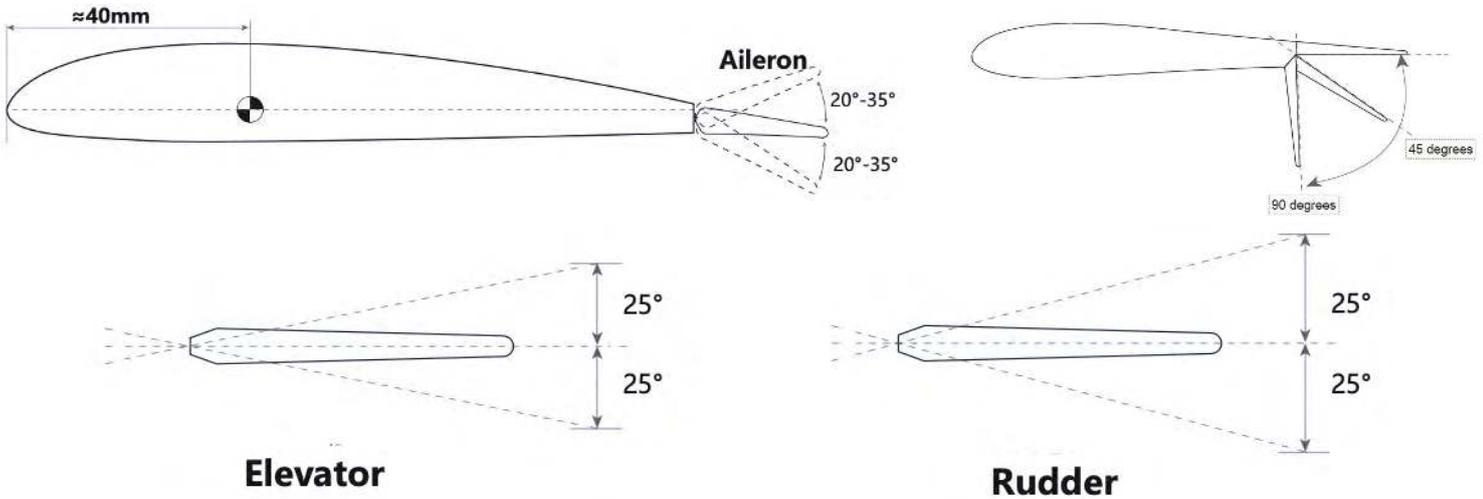
**Once you are happy with the setup, you may apply a spot of glue to hold it in place.**

**Repeat the above steps for the right wing.**

## COMPLETE



## C OF G AND CONTROL SURFACE THROW SETTING INFORMATION:



## CONTROL DIRECTIONS TESTS:

	Transmitter Command	Aircraft Reaction
<b>Elevator</b>	Stick backward	
	Stick forward	
<b>Aileron</b>	Stick right	 View from the nose.
	Stick left	 View from the nose.
<b>Rudder</b>	Stick right	 View from the nose.
	Stick left	 View from the nose.

## **MODEL FLYING PRECAUTIONS:**

- Select your flying area carefully. Always choose an open space that is clear and not obstructed by trees, poles, pylons, and buildings etc. Also ensure you are away from people and crowded areas. Avoid flying in areas with roads, near water, or within close proximity to full size air traffic.
- Do not fly this model in poor weather, for example: high winds, low visibility, inclement temperatures, and rain and storms are also to be avoided.
- Never attempt to catch the model whilst it is in flight, even a slow moving model can cause harm to yourself and risks damage to the model.
- This model is not recommended for children under the age of 14 years old. All children no matter what age, should be supervised by a capable and responsible adult when operating this model.
- Always unplug your model battery when not in use, never leave the battery installed in the model.
- Please remember to keep clear of the propellers at all times when your flight battery is connected.
- Before flying, always turn ON your transmitter first, then plug your flight battery into the model.
- After flying, always unplug your battery first in the model and then turn OFF your transmitter.
- Exercise caution when charging your batteries, and follow in full your battery manufacturers safety guideline when doing so.

## **PRE-FLIGHT CHECKS:**

1. Always range check your model before any flight (especially when flying a new model for the first time). Follow your radio manufacturers guidelines for performing this check.
2. Check all screws, bolts and mounting points are firmly secure, including control horns and clevises.
3. Only fly with fully charged batteries (both in your radio and model). Failure to do so could result in loss of control, damage to the model and/or persons/property around you. Check your batteries are fully charged.
4. With the model powered up (transmitter on first, then receiver/model) check that all surfaces are free from damage/obstructions, moving in the correct directions and freely with stick inputs.
5. Inspect the model and prop for any damage that may have occurred during transit and listen for any unusual sounds from the electronics when powered up. If in doubt, do not fly.
6. With the model held securely and the prop free of obstructions, increase the throttle just slightly to confirm the rotation of the prop is correct. The model should want to pull straight forward with throttle.
7. If this is your first flight with the model double check the C/G is at the correct position. If not adjust battery position inside model accordingly.
8. If you are an inexperienced model pilot seek the help and assistance of an experienced pilot to perform these final checks and to test fly the model for you.

**RECOMMEND BATTERY:**



Turnigy 1000mAh 3S 30C Lipo Pack  
SKU: T1000.3S.30



Turnigy Nano-Tech 1000mAh 3S 40C Lipo Pack w/XT60  
SKU: 9210000274-0



Turnigy Nano-Tech Plus 1000mAh 3S 70C Lipo Pack w/XT60  
SKU: 9210000261-0



Turnigy Graphene Panther 1000mAh 3S 75C Battery Pack  
SKU: 9067000361-0



Turnigy nano-tech 1000mah 3S 25~50C Lipo Pack  
SKU: N1000.3S.25



Rhino 1000mAh 3S 25C Lipo Battery Pack w/XT60  
SKU: 9952000010-0

# ***H·KING***



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