



Pitts SPECIAL

MOTOR: 1x 40-55g / 900-1200kv Outrunner
ESC: 1x 15-25A ESC
SERVOS: 1x 10-14g (aileron)
2x 6-10g (rudder & elevator)
PROP: 1x 10x4.8 Slow Fly
BATTERY: 3s 600mAh-850mAh



RADIO: 4 channel
WINGSPAN: 34"
LENGTH: 30"
AUW: 360g to 425g
depending components used

SAFETY NOTES

- ✓ Before assembling and flying this model, read carefully any instructions and warnings of other manufacturers for all the products you installed or used on your model, especially radio equipment and power source.
- ✓ Check thoroughly before every flight that the airplanes' components are in good shape and functioning properly. If you find a fault do not fly the model until you have corrected the problem.
- ✓ Radio interference caused by unknown sources can occur at any time without notice. In such a case, your model will be uncontrollable and completely unpredictable. Make sure to perform a range check before every flight. If you detect a control problem or interference during a flight, immediately land the model to prevent a potential accident.
- ✓ Youngsters should only be allowed to assemble and fly these models under the instruction and supervision of an experienced adult.
- ✓ Do not operate this model in a confined area.
- ✓ Do not stand in line with, or in front of a spinning propeller and never touch it with any object.

IMPORTANT: PRIOR TO ANY ASSEMBLY

Please Note: after removing kit from shipping box, lay each piece flat on a hard surface, this will allow the airframe to straighten out if lightly bent from shipping. Do not worry since EPP is very pliable and can be bent back if out of shape.

TWISTED HOBBYS

Website: www.twistedhobbys.com – email: sales@twistedhobbys.com

Thank you for your purchasing a Twisted Hobbys' model. Please read through the entire manual before beginning to build this model. If you have any questions please contact us at the above indicated email address.

WARNING INFORMATION

This R/C Aircraft is not a toy! Read and understand the entire manual before assembly. If misused, it can cause serious bodily harm and property damage. Fly only in open areas, and AMA (*Academy of Model Aeronautics*) approved flying sites. Do not overlook the warnings and instructions enclosed or those provided by other manufacturers' products. If you are not an experienced pilot and airplane modeler you must use the help of an experienced pilot or an authorized flight instructor for the building and flying of this model aircraft.

These instructions are suggestions only on how to assemble this model. There are other ways and methods to do so. Twisted Hobbys has no control over the final assembly, the materials and accessories used when assembling this kit, or the manner in which the assembled model, installed radio gear and electronic parts are used and maintained. Thus, no liability is assumed or accepted for any damage resulting from the use of the assembled model aircraft or from this instruction manual including but not limited to direct, indirect, incidental, special, and consequential damages. By the act of using this user-assembled product, the user accepts all resulting liability. In no event shall Twisted Hobbys' liability exceed the original purchase price of the kit.

SHIPPING DAMAGE

Twisted Hobbys checks each plane before shipping to ensure that each kit is in fine condition. We have no bearing on the condition of any component parts damaged by use, modification, or assembly of the model. Inspect the components of this kit upon receipt. If you find any parts damaged or missing, contact Twisted Hobbys immediately. We will not accept the return or replacement of parts on which assembly work has already begun. Twisted Hobbys reserves the right to change this warranty at anytime without notice.

OUR MISSION

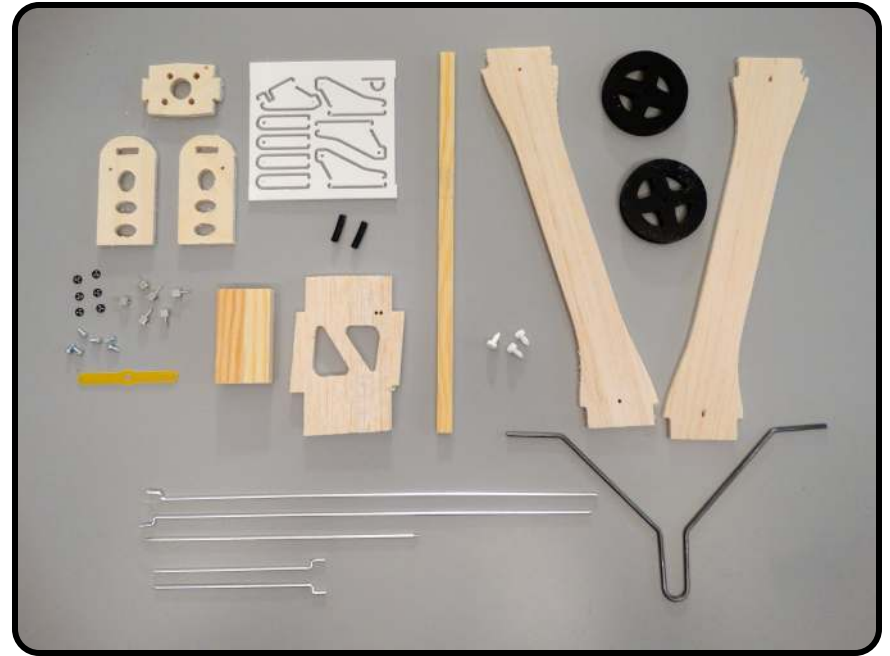
To provide the best products and service to our customers at the lowest prices possible. We take great pride in our company, our commitment to customer service and in the products we sell. Our online store is designed to provide you with a safe and secure environment to browse our product catalog.

Thank you for shopping with Twisted Hobbys!

KIT CONTENTS



Main Parts

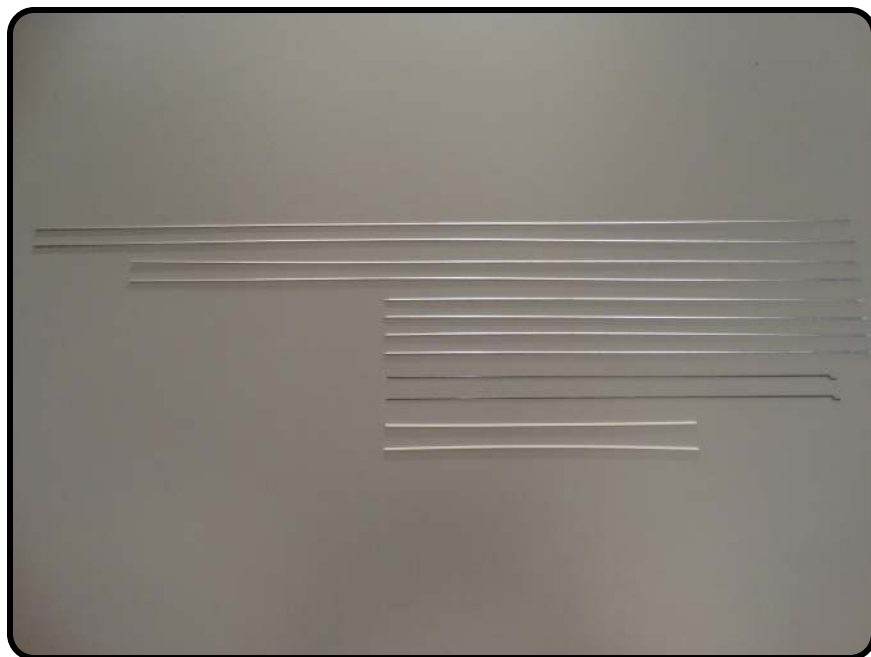


Hardware Packet Detail

Double check that you have all the above pictured items. Note - Some kits might have slight deviations from the above pictured items.

DETAILED DESCRIPTIONS OF ITEMS WILL BE CALLED OUT IN THE BUILD STEPS

KIT CONTENTS & ELECTRONICS



Stiffeners and Push Rods



Recommended Components
(power combo & Aura5 w/sat.)

There are many different combinations of servos, motors, escs, props, etc. Above-Right is a suggestion offered from Twisted Hobbys for good durability and weight management.

***** THESE ARE OPTIONAL ITEMS - THEY ARE NOT INCLUDED IN THE KIT *****

TOOL AND ADHESIVES NEEDED



Tools shown and listed are suggestions only. Depending on your building technique you may not need everything indicated – and/or – you may find that other tools available to yourself may be of benefit to your Build.

It is also recommended that you have a flat building surface, one that will accept stick pins and push pins.

An Acroscopic Ceiling panel from your local hardware store fits this bill nicely, and will lay flat on your work table. Over size / long push pins are available at your local craft store. These two items are by no means required, but will aid in the building process, and can be used for future projects

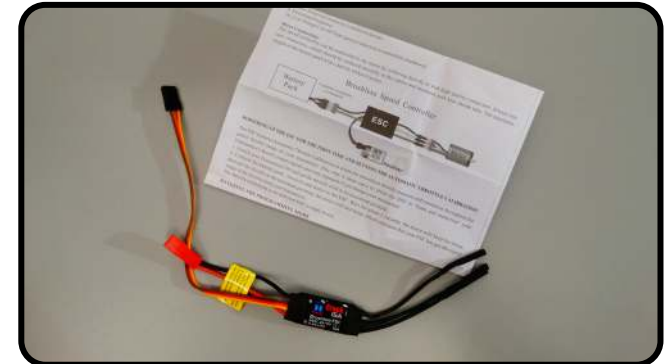
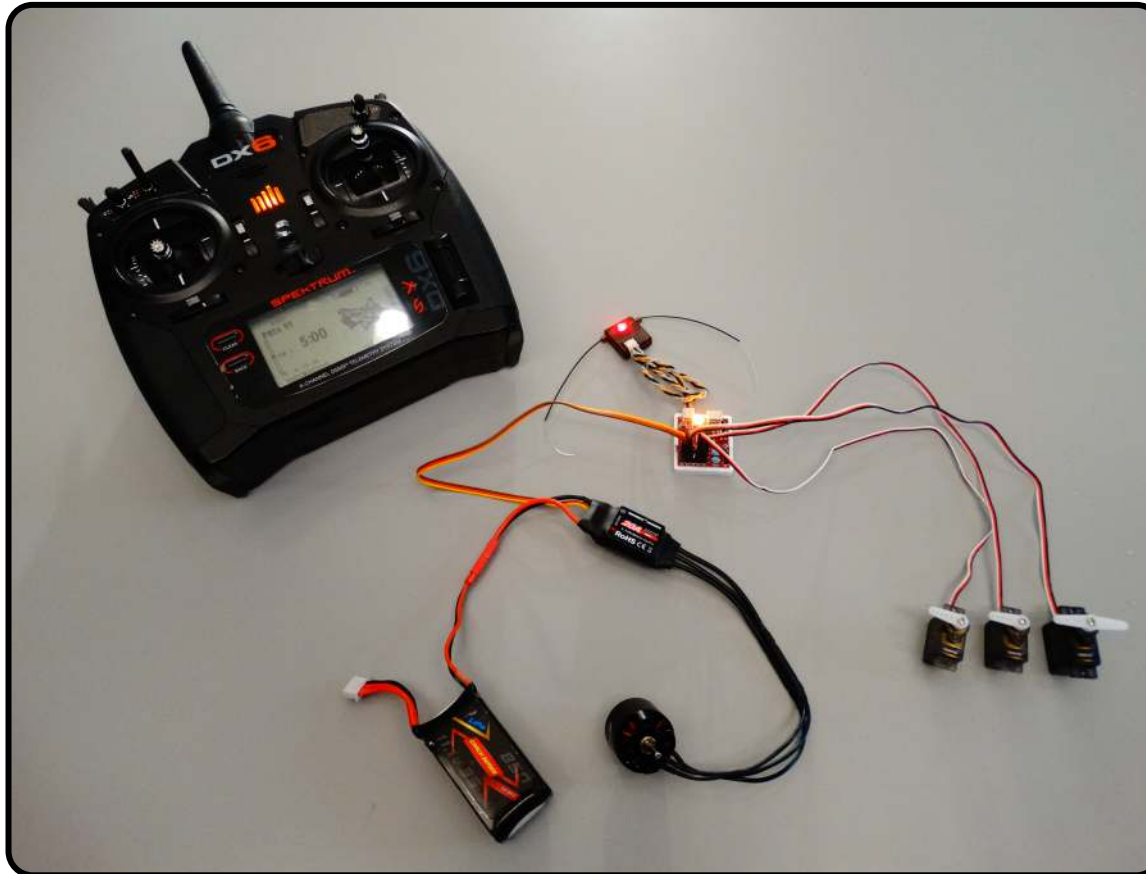
- **Lighter**
- **Small Drill Bits**
- **Tape Measure and Ruler**
- **Black Sewing Thread**
- **Welders or Foam Tac Glue**
- **Hobby Knife w/new Blade**
- **Needle Nose Pliers**
- **Wire Cutters**
- **Low Temp Hot Glue Gun**
- **Course Sand Paper**
- **Scissors**
- **Small Phillips Screw Driver**
- **Thin and Medium CA**
- **CA Applicator Tips**
- **Activator**

THE BUILD

CONSTRUCTION METHODS:

Building surface should be at least 2ft x 4ft and flat. Weights or some small heavy objects will be handy for holding things in place during the time glue is setting.

CA or FoamTac glue is used for FOAM TO FOAM joints. Thin and Medium CA can be used on the PLASTIC TO FOAM and CARBON TO FOAM joints. **When using the Welders or FoamTac glue for a butt joint, apply a thin film to each surface, allow to sit briefly per mfg instructions, then assemble.** Note that this method will create a nearly instant bond, so locate carefully when bringing the two pieces together. **If alignment is necessary or a slip joint, do not allow the glue to tack up**, simply apply and join immediately, you will have several minutes to locate the two parts before the glue sets up. In most cases the parts being glued can be handled with care in 30 minutes, full cure is approx 24 hours.



- ☐ Locate all the electronics that will be used on this model
- ☐ Create a model on your transmitter
- ☐ Following your radio mfg. instructions, bind your radio to the power combo components
- ☐ Calibrate the ESC.
- ☐ Confirm all components work properly.

Locate the fuselage, Landing gear & wood block



Fit the wood block in as shown and CA



Test Fit the Landing gear into the block



Remove the Landing gear and set aside



Locate the two 560mm long alum rods



Cut a slit about 3mm deep from the tail...



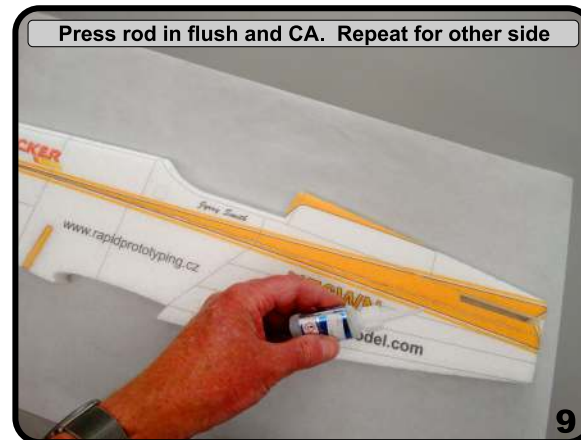
... to the nose



Make sure slit is located approx at location shown

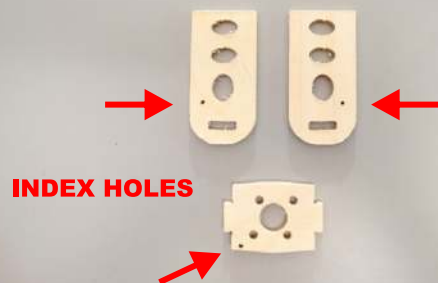


Press rod in flush and CA. Repeat for other side



Locate the motor mount pieces

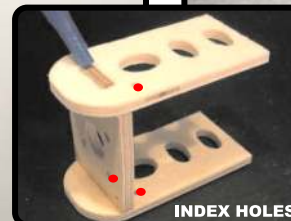
STOCK - FRONT MOUNT (NOT SYMETRICAL!)



1

Test fit the pieces

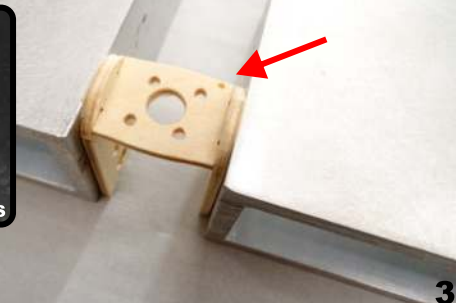
STOCK - FRONT MOUNT



2

Jig square with index holes on same side and CA

STOCK - FRONT MOUNT



3

For rear mount motors use the Optional Mount

OPTIONAL - REAR MOUNT (SYMETRICAL)



4

Test fit the pieces

OPTIONAL - REAR MOUNT



5

Jig square and CA

OPTIONAL - REAR MOUNT



6

Optional Mount used on this build



7

Test fit as shown



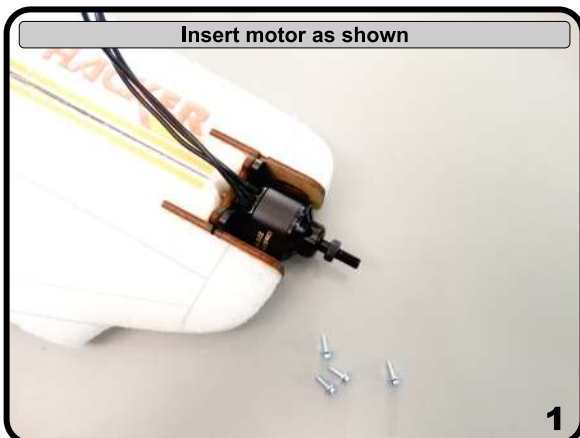
8

CA all the mating surfaces



9

Insert motor as shown



Attach with small servo screws



Locate the Landing gear



Press the gear into the slot....



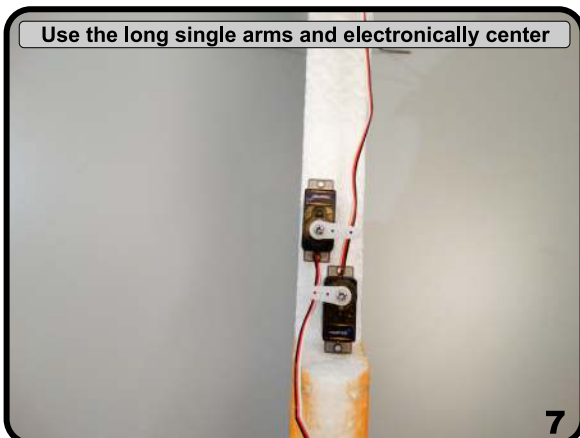
...this will make handling for next steps easier



Tail servos will be located in cabin area



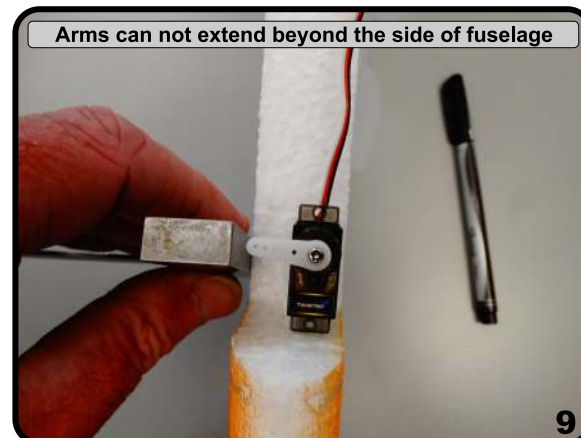
Use the long single arms and electronically center



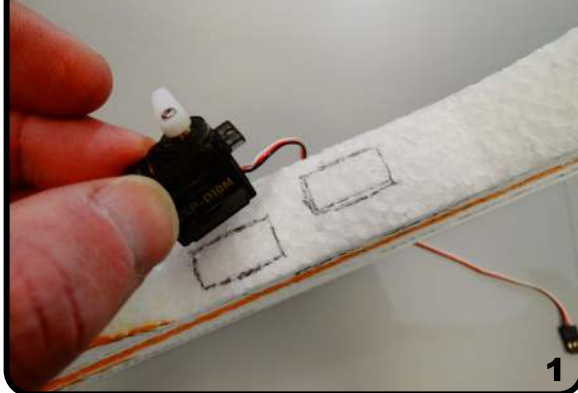
They will be located towards rear of cabin



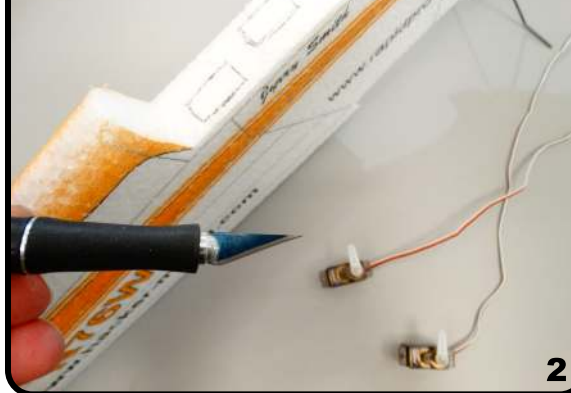
Arms can not extend beyond the side of fuselage



Mark the locations, staggering them as shown



Put a fresh blade in your hobby knife



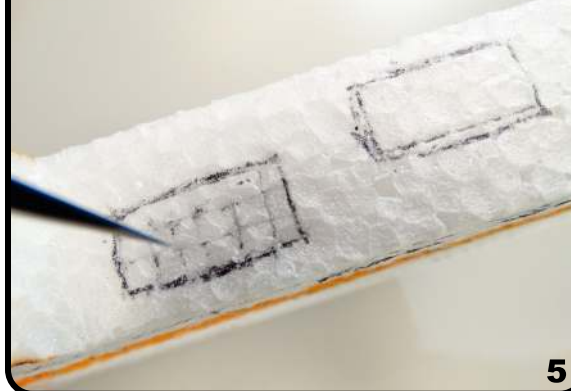
Make a note of how deep you need to go



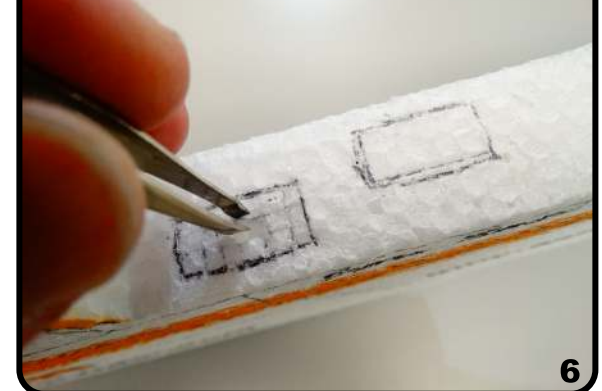
Cut around the profile at the right depth



Cut a "hatch" pattern inside the perimeter



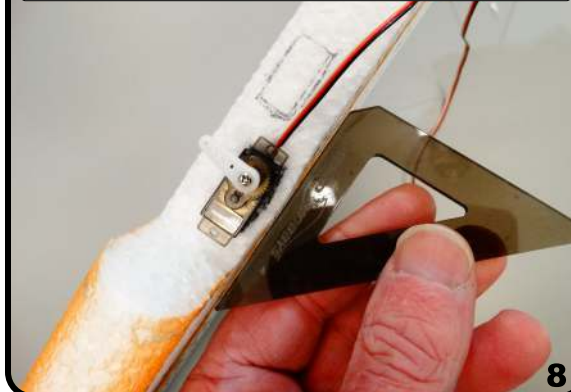
With a pair of tweezers pull out the little chunks



Clear the whole pocket



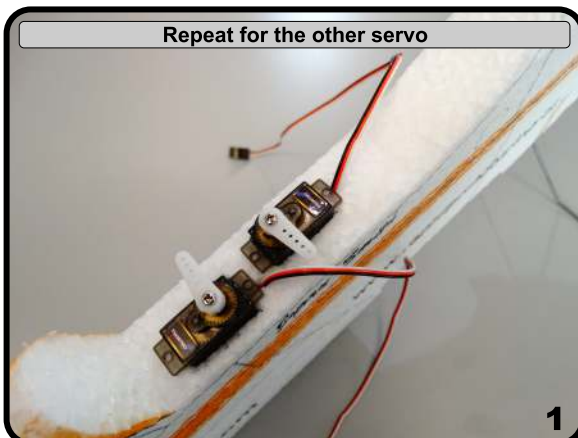
Test fit - make sure it does not bulge the fuse side



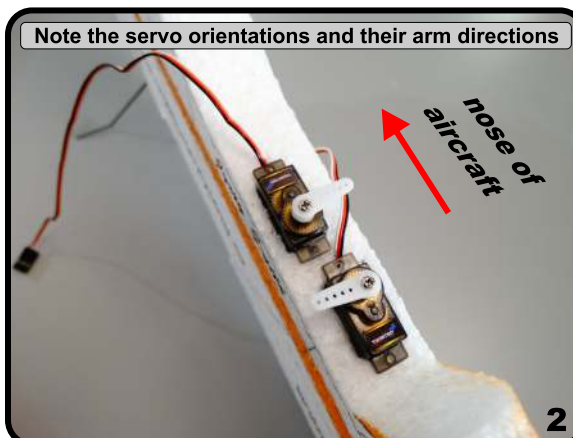
Trim more if needed for snug fit that does not bulge



Repeat for the other servo



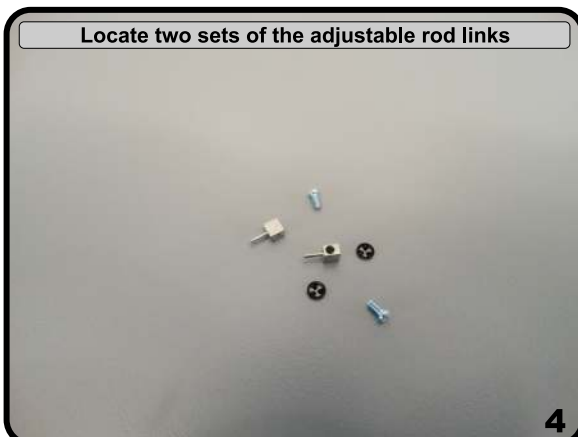
Note the servo orientations and their arm directions



Make sure the arms don't stick past fuselage side



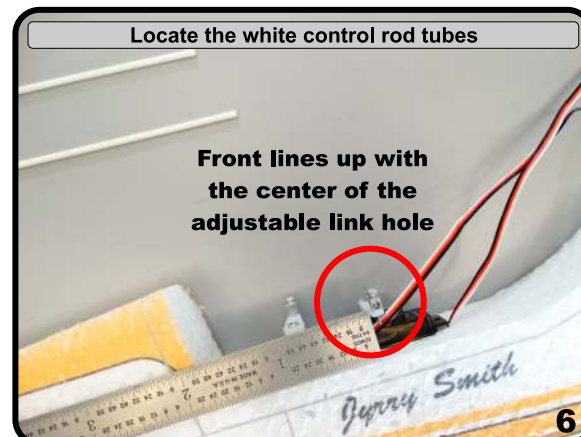
Locate two sets of the adjustable rod links



Attach them to the outer most hole of servo arms

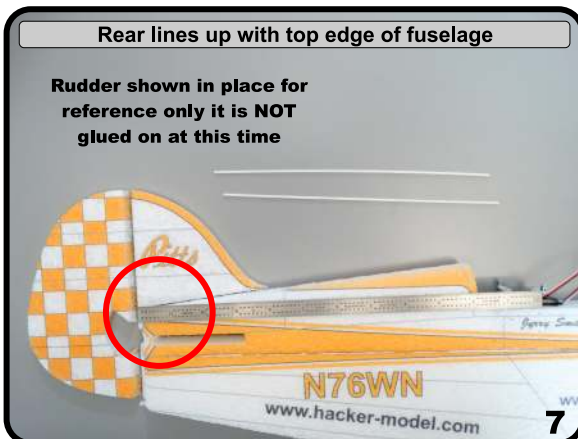


Locate the white control rod tubes

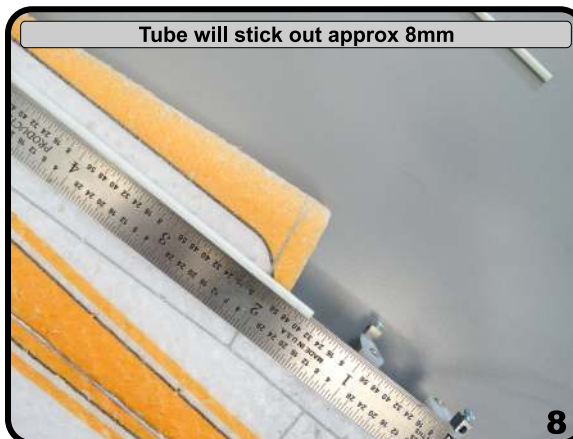


Rear lines up with top edge of fuselage

Rudder shown in place for reference only it is NOT glued on at this time



Tube will stick out approx 8mm



Note how far back the tube will go



Make a cut approx 3mm deep



Press the tube into the slit - do not kink the tube



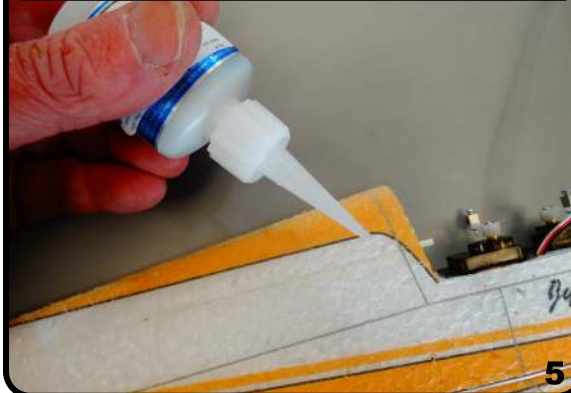
Leave sticking out at the tail end like shown



Double check the front position



Secure with CA



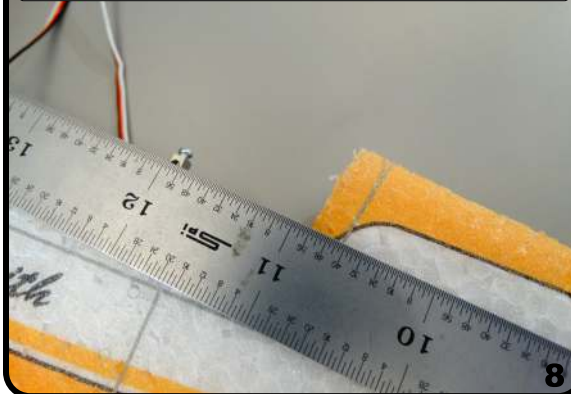
Flip over for the other side - line up with link at front



... and 10mm down from edge at the back like shown



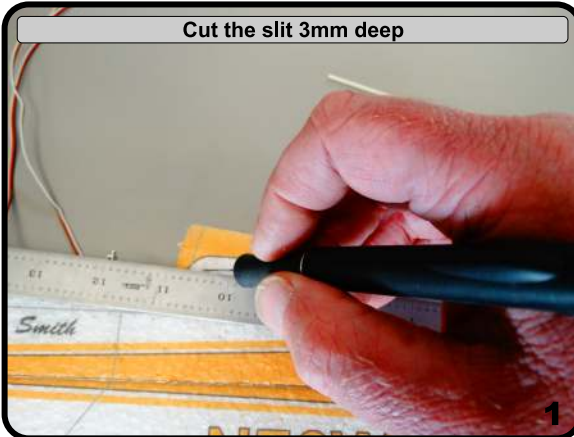
Close up of alignment with link hole



Make a not of how long the slit will need to be



Cut the slit 3mm deep



Press in avoiding kinks and CA - leave tail side loose



Locate elevator and wood spar as shown



Make sure the cut out accepts the spar



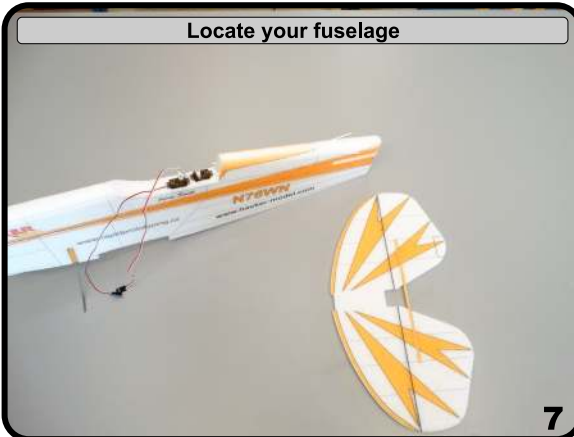
Trim and test fit as needed



Secure together with CA



Locate your fuselage



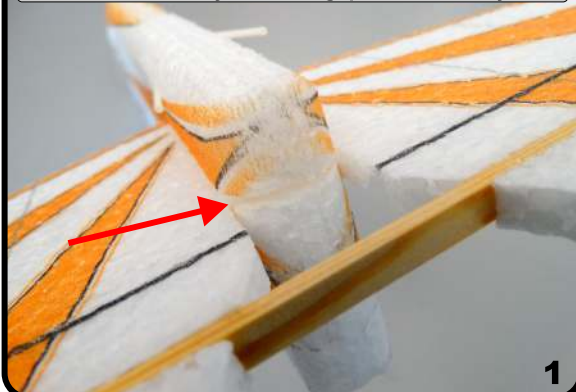
Spread the rear area as shown



Slide in the elevator with top side facing up



Slide all the way in, small gap at end is okay...



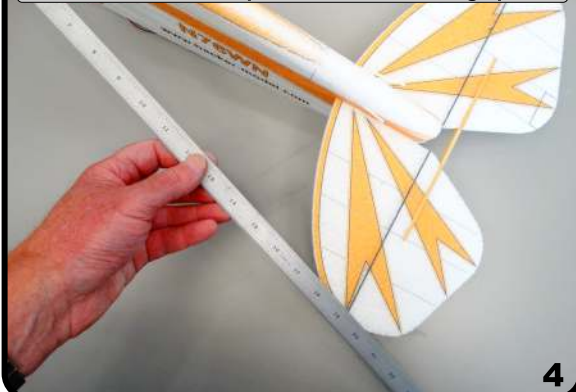
... but make sure it is flush and fully seated on sides



Check to make sure it is square and perpendicular



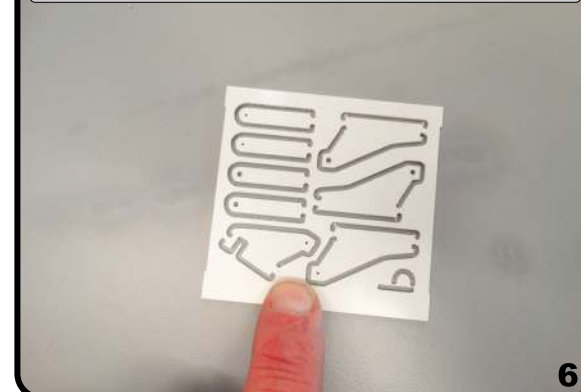
And measure each tip to a common fuselage point



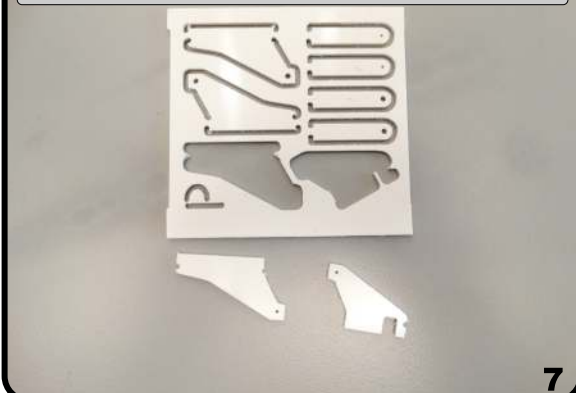
Glue with CA when happy with position



Locate the two tail control horns



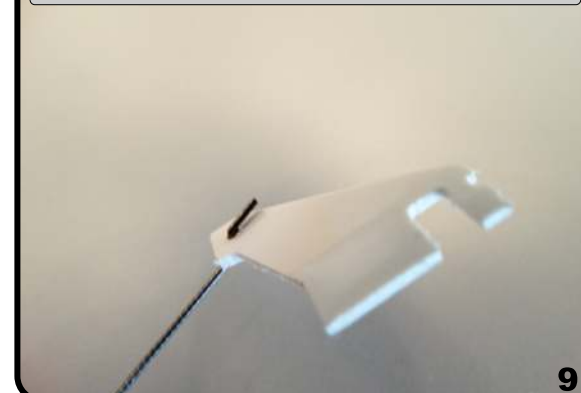
Break them out



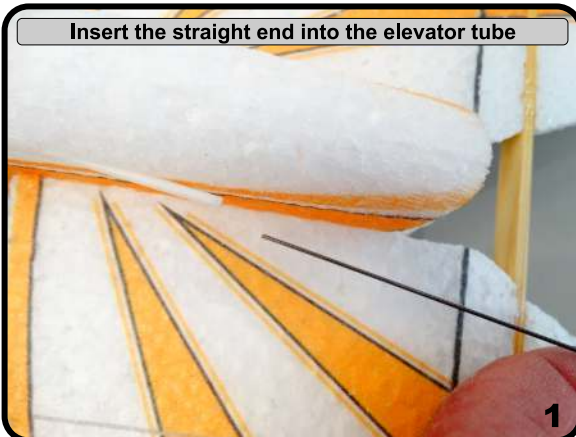
The one with the notch is for the elevator



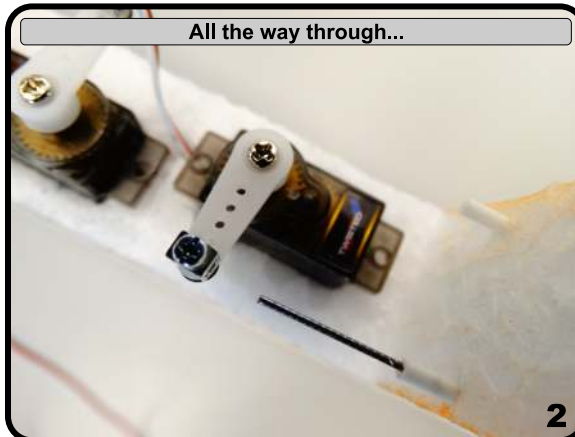
Thread the 0.8mm z-bend thru the hole like shown



Insert the straight end into the elevator tube



All the way through...



... and thru the elevator servo adjustable link



Position the horn approx as shown



Cut a slit so that it fits flush and inline with rod



Secure with CA



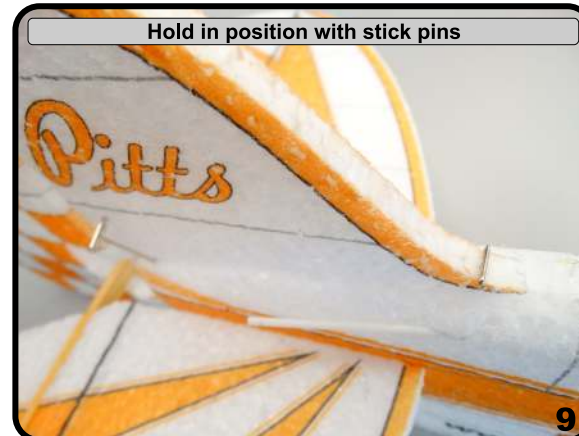
Locate the Rudder



Test fit - make sure all surface match up flush



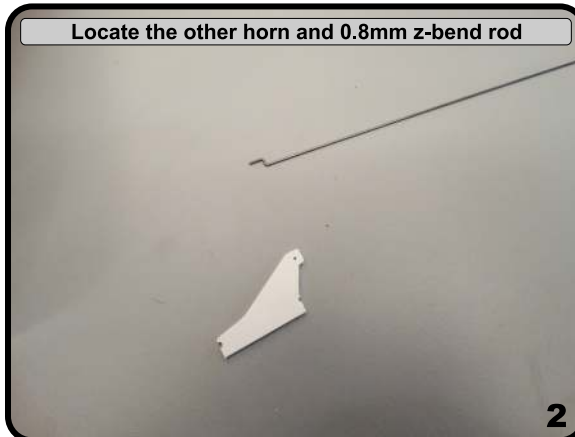
Hold in position with stick pins



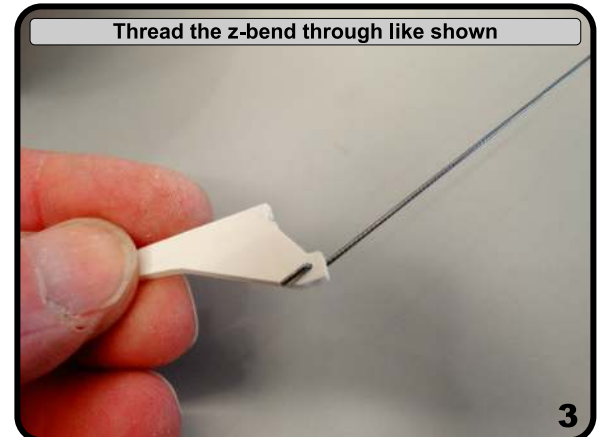
Make sure it is square and secure with CA



Locate the other horn and 0.8mm z-bend rod



Thread the z-bend through like shown



Insert the rod into tube end and adj. link on servo



Position the horn approx as shown



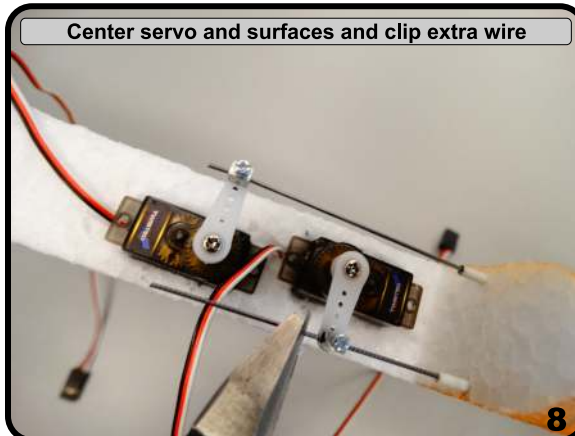
Cut a slit for the base of the horn



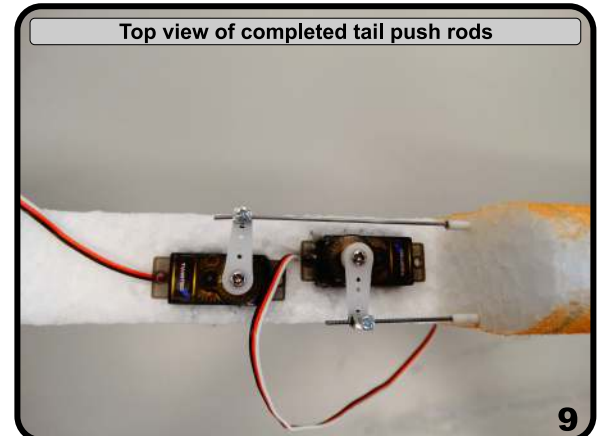
Line up hole with hinge line and CA



Center servo and surfaces and clip extra wire



Top view of completed tail push rods



Locate the 1.6mm x 120mm rod



1

Mark the center



2

Find something about 20mm diameter



3

Locate the center of the rod as shown



4

Bend it around keeping each leg equal



5

Poke into the rear bottom of fuselage



6

Install approx as deep as shown



7

Secure with CA



8

Add a micro tail wheel for added scale detail
OPTIONAL DU-BRO #926 TAIL WHEEL



9

Will install as shown - clip the one arm away



1

Position pivot point EXACTLY in line with hinge

Secure with FoamTac and
let dry over night



2

Locate the lower wing halves and Med. CA



3

Apply Med. CA to one half, Kicker to the other half



4

Carefully join together with even alignment



5

Flip the wing over and locate 1.6x640mm rod



6

Mark a position 55mm in from leading edge...



7

... near the tip of each end



8

Line up a straight edge and cut a slot 3mm deep



9

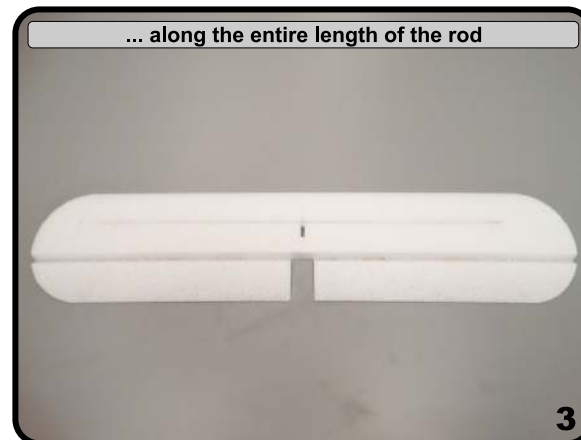
Press the rod into the slot



Make sure the wing is flat and CA..



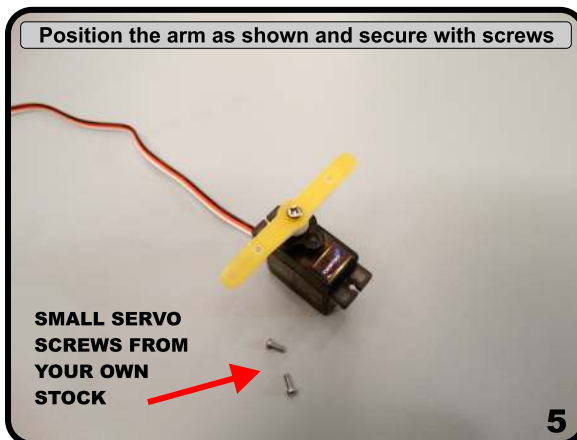
... along the entire length of the rod



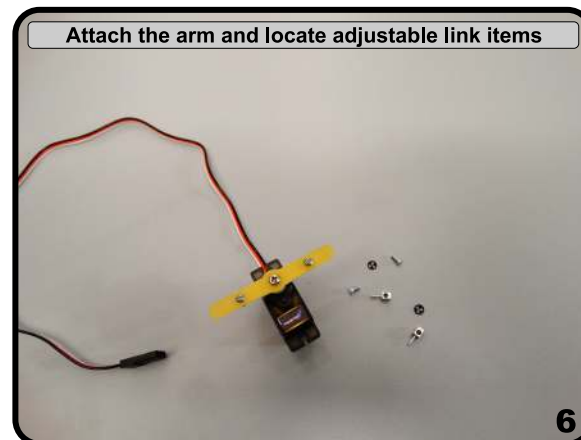
Locate the aileron servo that will be used



Position the arm as shown and secure with screws



Attach the arm and locate adjustable link items



Install the adjustable links as shown



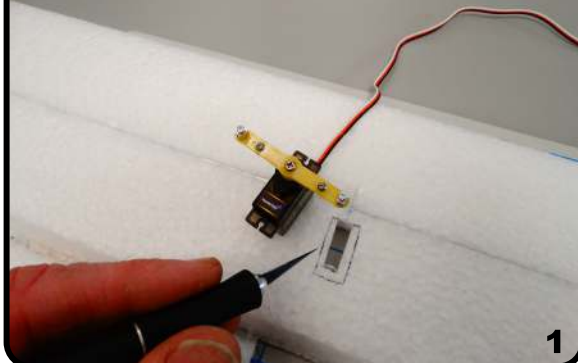
View of underside and the press on keeper washer



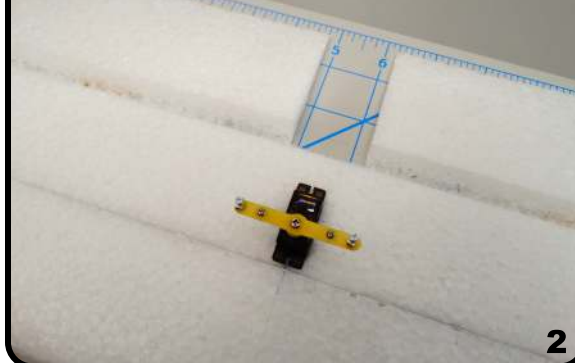
Aileron servo will locate in this hole and position



Mark and enlarge the hole as needed



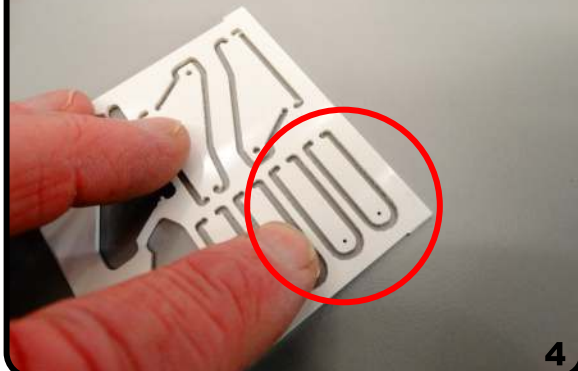
Test for snug fit



Make a little relief cut for the wire



Locate the two gang horns shown below



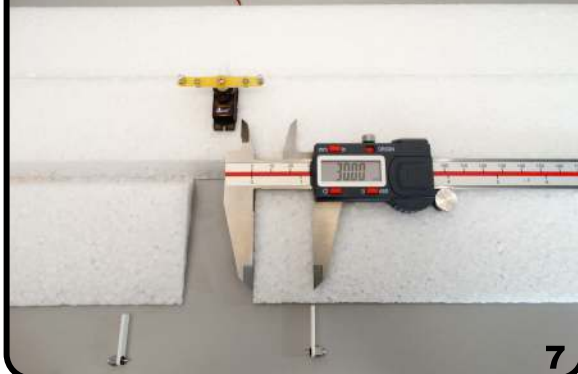
Locate two sets of adjustable link hardware



Install link as shown



These will locate 30mm in from end like shown



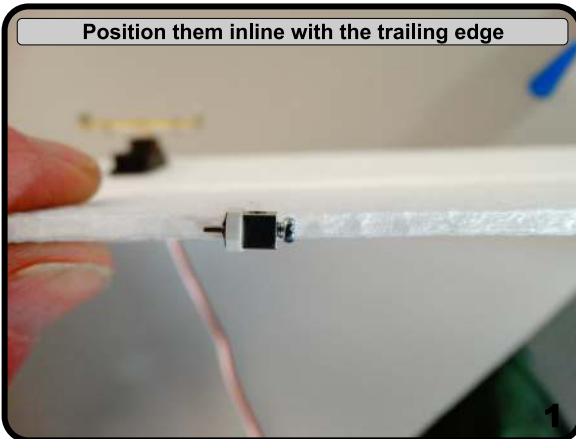
Make a mark and cut a slot all the way thru...



... and long enough to accept the gang horns



Position them inline with the trailing edge



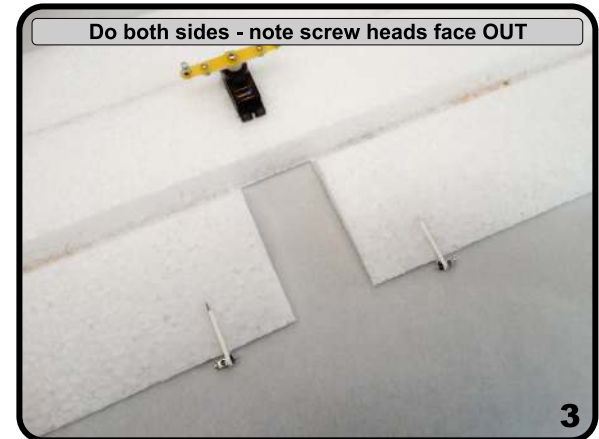
1

Secure with CA



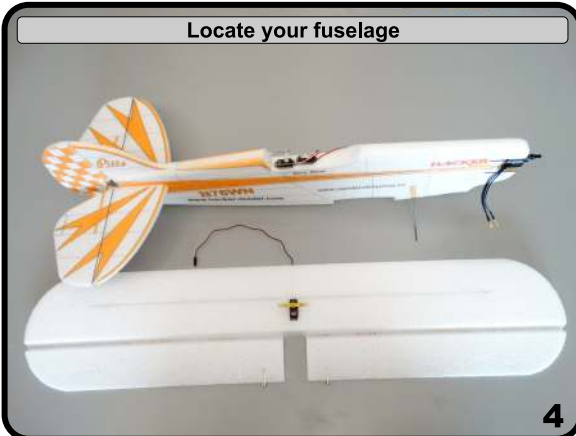
2

Do both sides - note screw heads face OUT



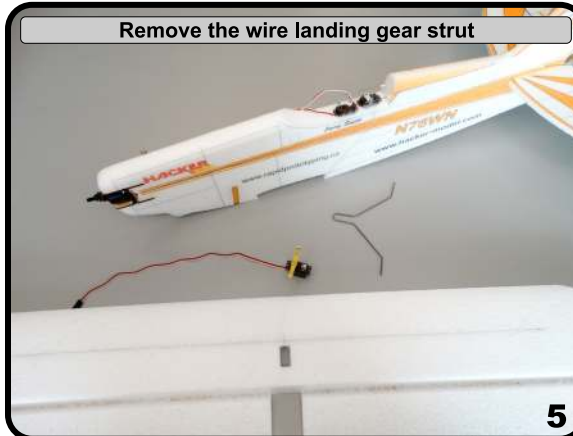
3

Locate your fuselage



4

Remove the wire landing gear strut



5

Grab the lower wing



6

Fit into the saddle area of the lower fuselage



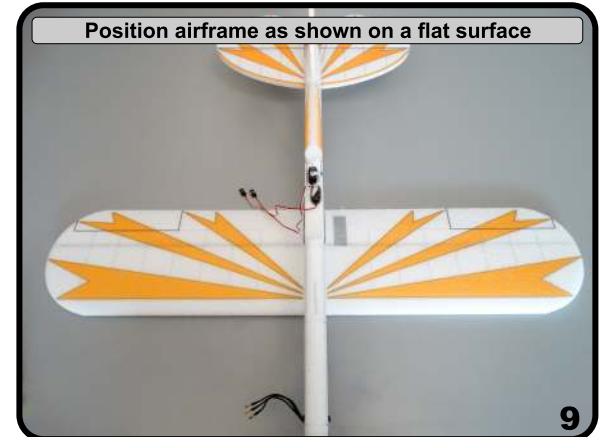
7

Make sure it fits up nice and tight everywhere



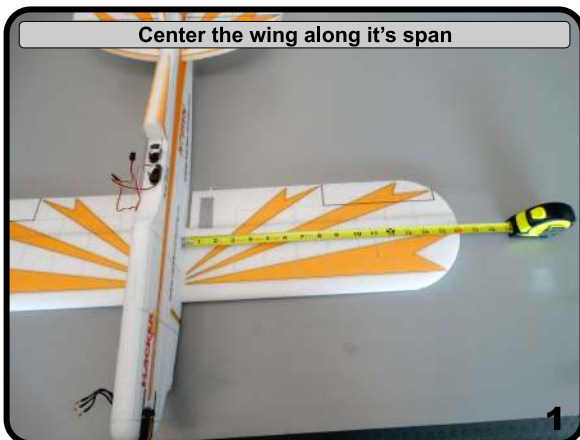
8

Position airframe as shown on a flat surface

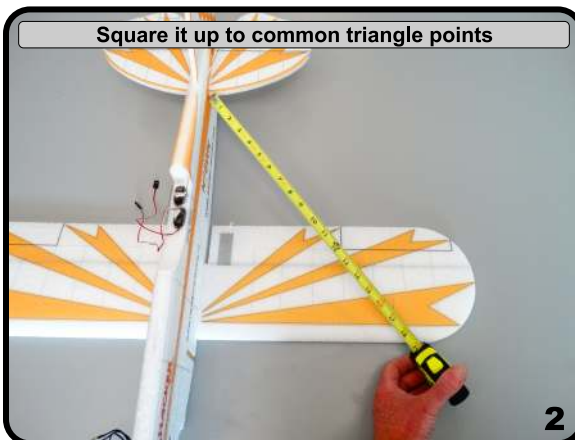


9

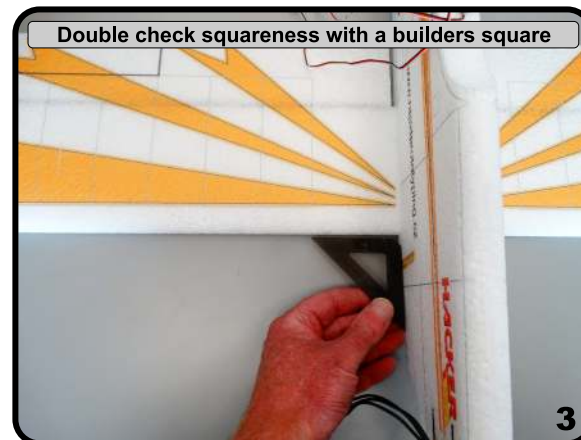
Center the wing along it's span



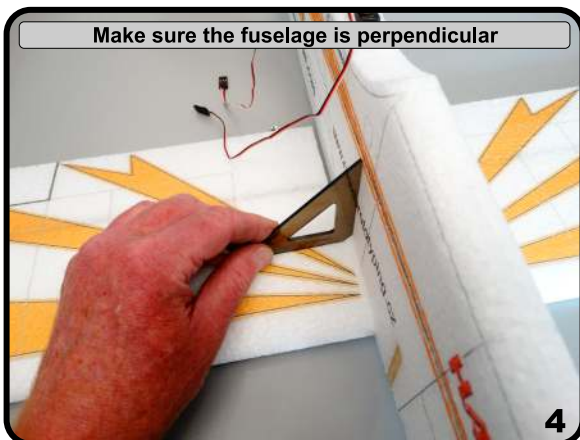
Square it up to common triangle points



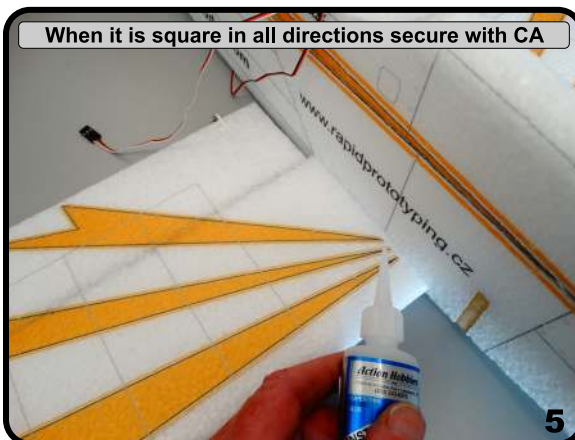
Double check squareness with a builders square



Make sure the fuselage is perpendicular



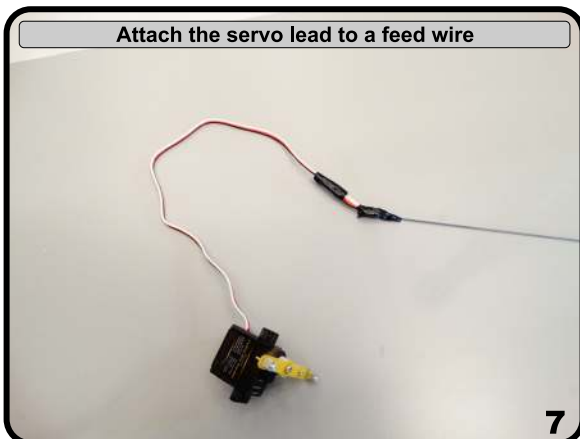
When it is square in all directions secure with CA



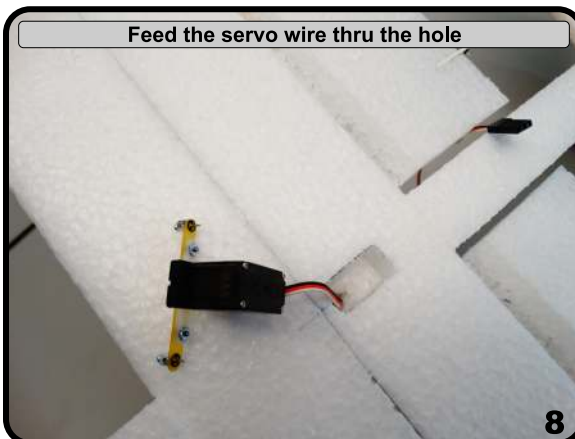
Poke/Drill a hole from the wing servo area to cockpit



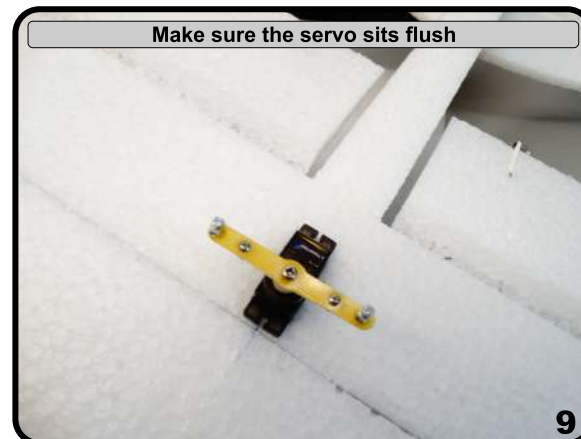
Attach the servo lead to a feed wire



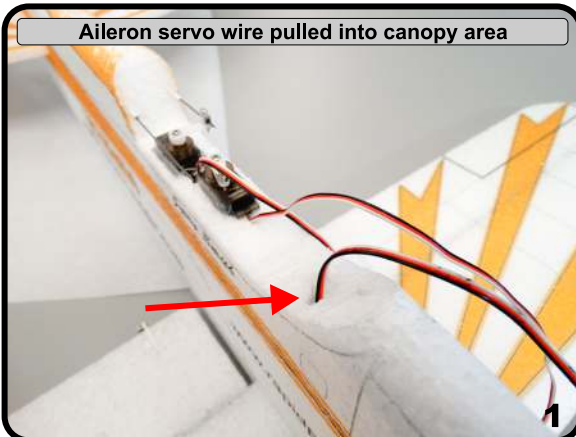
Feed the servo wire thru the hole



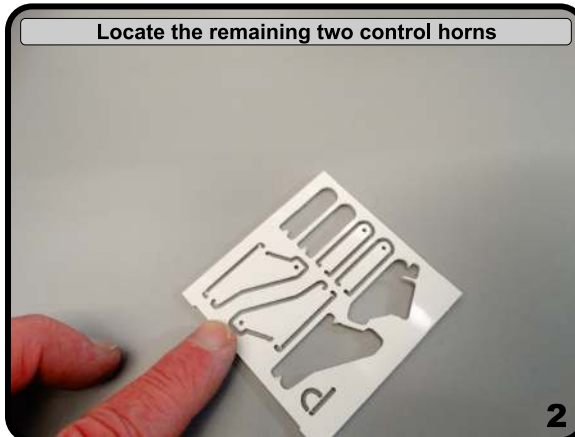
Make sure the servo sits flush



Aileron servo wire pulled into canopy area



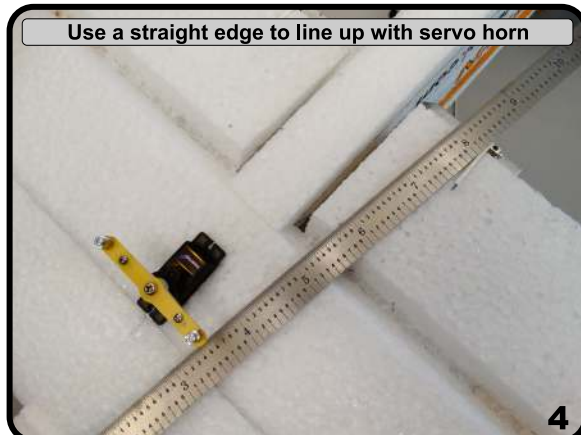
Locate the remaining two control horns



Mark a spot about 10mm in from edge as shown



Use a straight edge to line up with servo horn



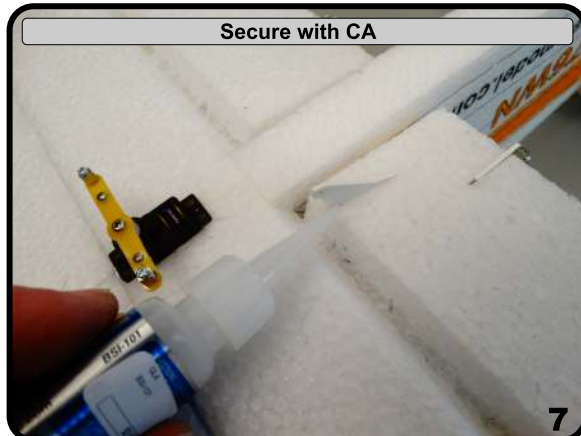
Make a cut for accept the control horn



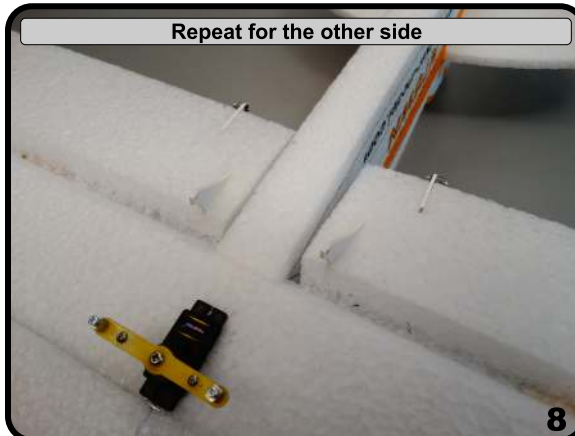
Insert the horn with hole over hinge line



Secure with CA



Repeat for the other side



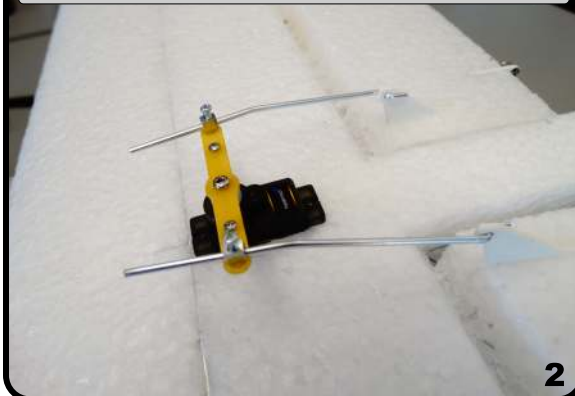
Locate the short alum aileron control rods



Mount them to the servo and control horns as shown



Small bend if needed for servo used



Locate the top wing, med CA and Kicker



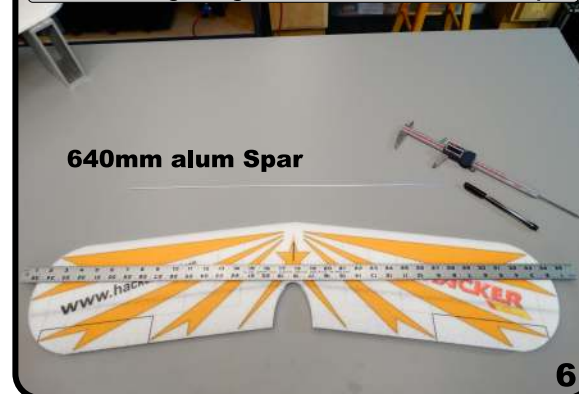
Med CA to one side, Kicker to the other and join



Mark 80mm spot for wing spar slot as shown



Use a straight edge to make the slot - 3mm deep



Press in the spar to flush position



Secure with thin CA



Flip the fuselage and top wing as shown



Line up the wing centers like shown



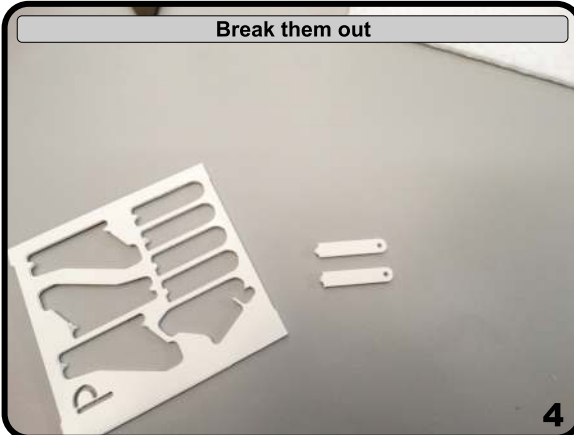
Transfer gang horn location to top wing with marker



Locate the last two gang horns



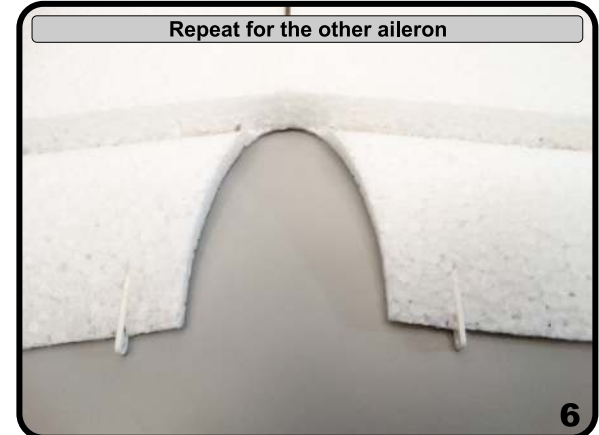
Break them out



Cut a slit at location to accommodate



Repeat for the other aileron



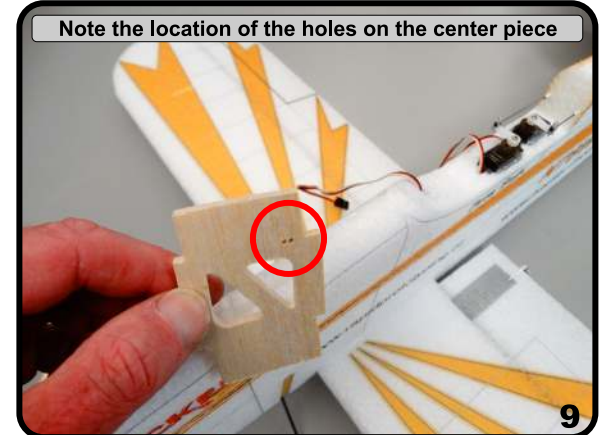
Center them in trailing edge and secure with CA



Locate the three wood pieces shown



Note the location of the holes on the center piece



They locate toward the rear - dry fit like shown



Locate outer strut slot



Dry fit with orientation shown



Dry fit the other side with same orientation



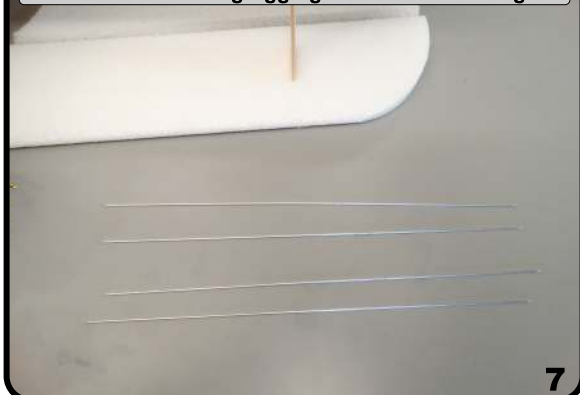
Flip over and line up tops slots with top of struts



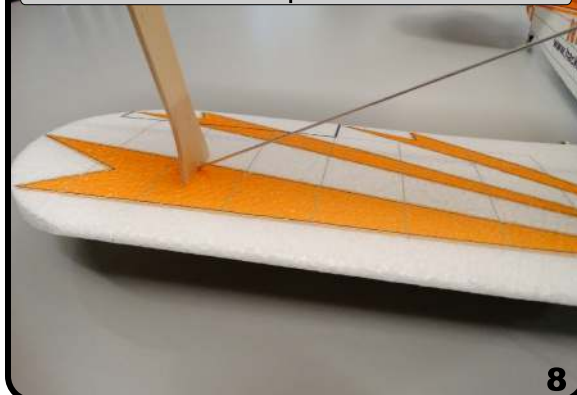
Dry Fit - Press every thing tight and flush



Locate the 4 wing rigging wires - 360mm long



Poke thru pre-cut hole



Poke other end thru pre-cut hole



Match the wires up to each other where they cross



Locate the end in position to keep centers touching



Repeat for the other side



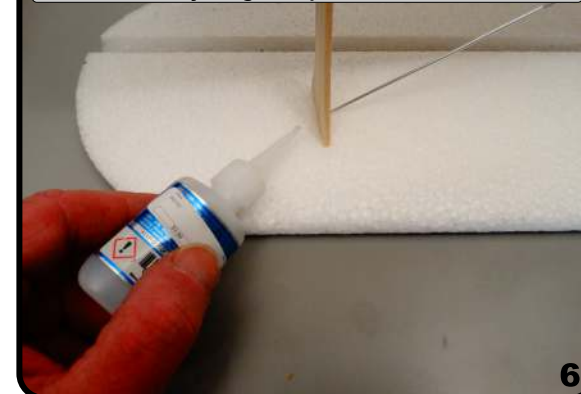
Rig the fuselage and wings square to each other



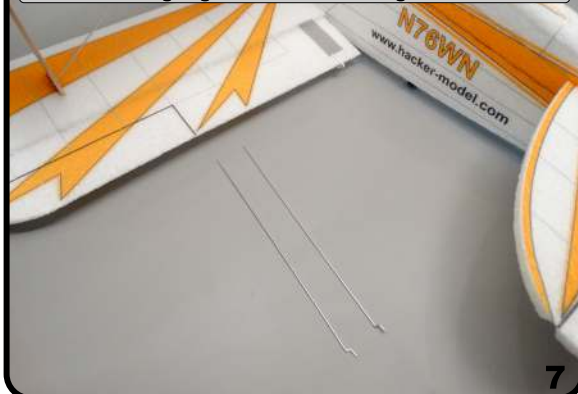
Make sure the wing spacing is the same on each side



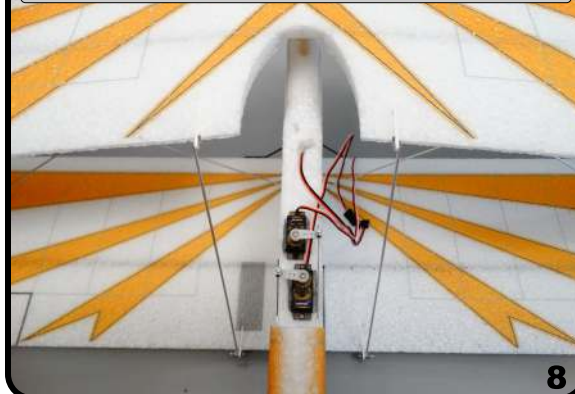
While everything is in position - CA all items



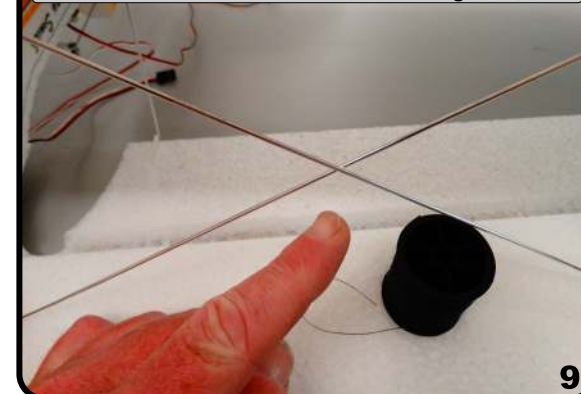
Locate the gang rods - 330mm long with z-bends



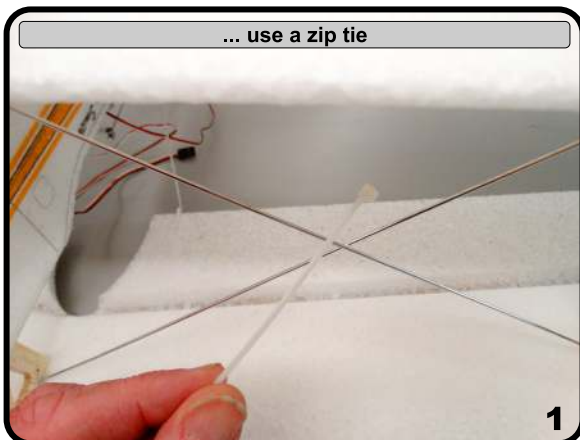
Attach them as shown



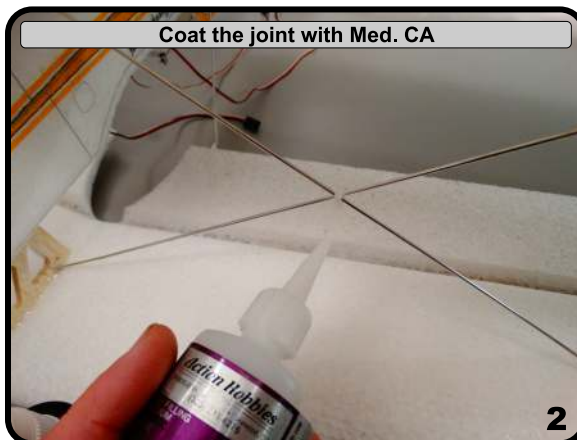
Use some thread to bond the centers together, or...



... use a zip tie



Coat the joint with Med. CA



Install the wire



Locate all the landing gear parts shown



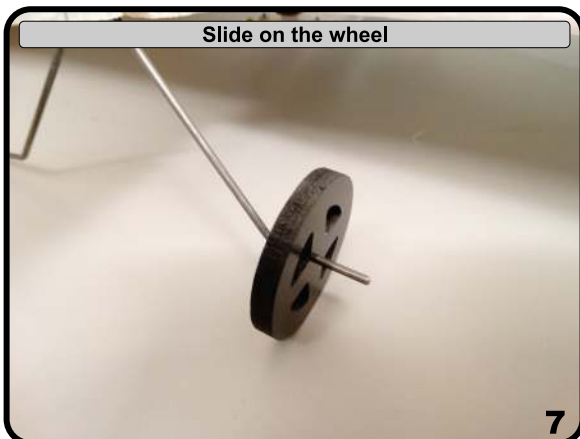
Cut the tubing pieces in half like shown



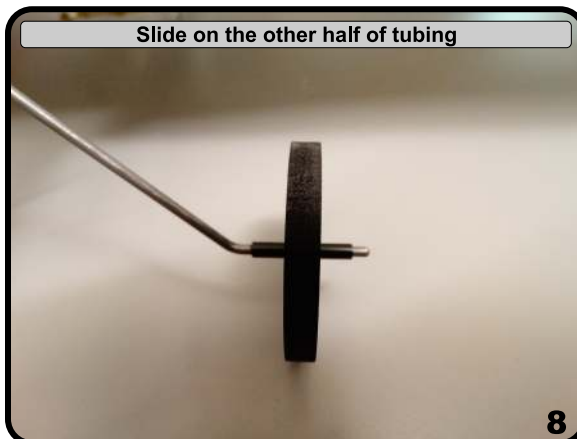
Slide one piece on like shown



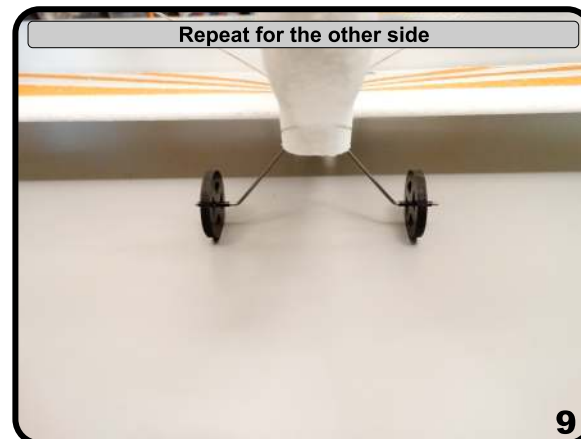
Slide on the wheel



Slide on the other half of tubing



Repeat for the other side



Make sure they are both positioned equal



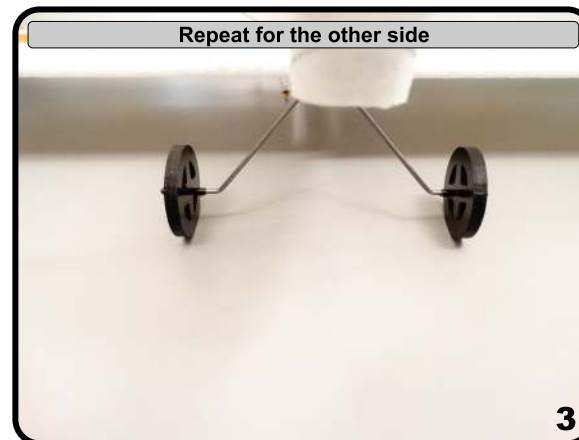
1

Secure with Med. CA at ends of tubing



2

Repeat for the other side



3

Locate one of the wheel pants - both are the same



4

Test fit onto the landing gear so wheel can spin



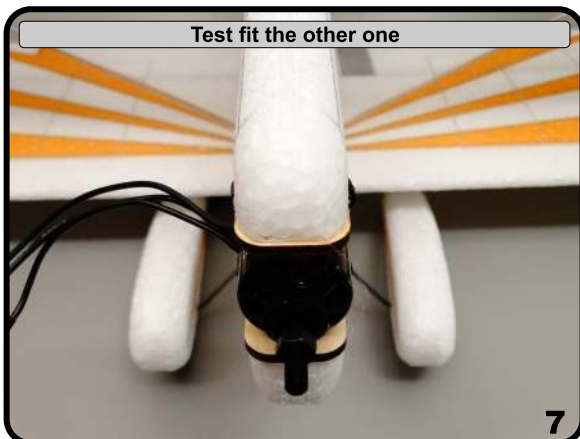
5

Back end will hang down a little



6

Test fit the other one



7

Prop up tail to simulate level flight



8

Glue wheel pant parallel to level flight with Med. CA



9

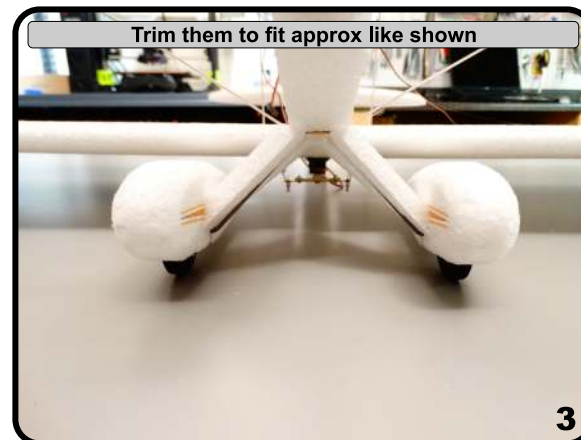
Locate the wheel fairings



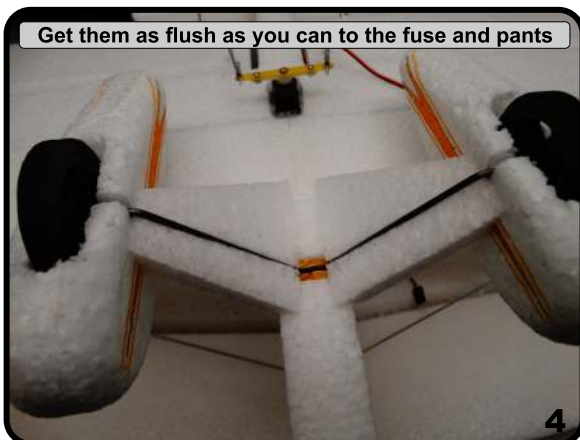
They will be cut to fit in this orientation



Trim them to fit approx like shown



Get them as flush as you can to the fuse and pants



Secure all the joints with a FLEXIBLE GLUE



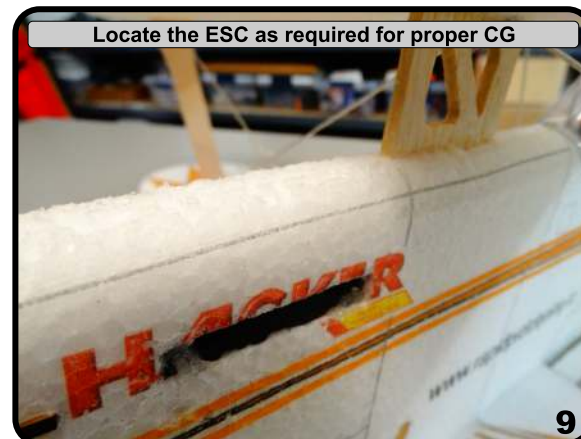
Measure back 15mm from lower L.E. for CG point



Tentatively locate everything for best CG



Locate the ESC as required for proper CG

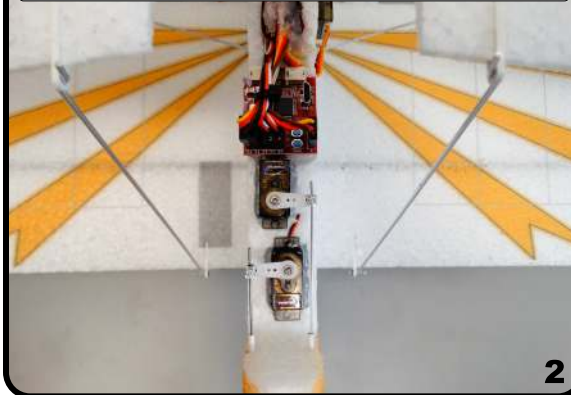


Bundle up the extra wire from the ESC



1

Tidy up all the wires under the canopy



2

Locate white canopy pins and secure with Med. CA



3

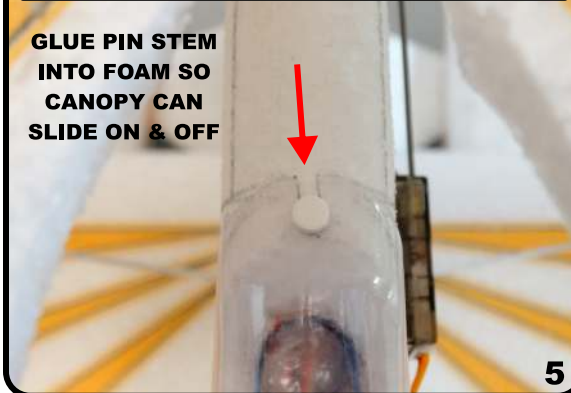
Cut an open slot at the front of the canopy



4

Locate the canopy and third pin approx as shown

**GLUE PIN STEM
INTO FOAM SO
CANOPY CAN
SLIDE ON & OFF**



5

Poke the rear pins into the foam (do not glue)



6

Final canopy and gear installation



7

Double check battery location for CG



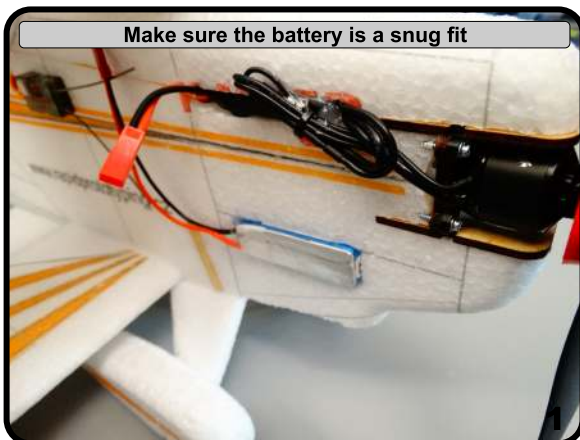
8

Cut a hole for snug fit of your battery



9

Make sure the battery is a snug fit



Locate a your tool to set control throws



2

Set Rudder to ± 30 degrees



3

Set Elevator to ± 40 degrees



4

Set Ailerons to ± 40 degrees



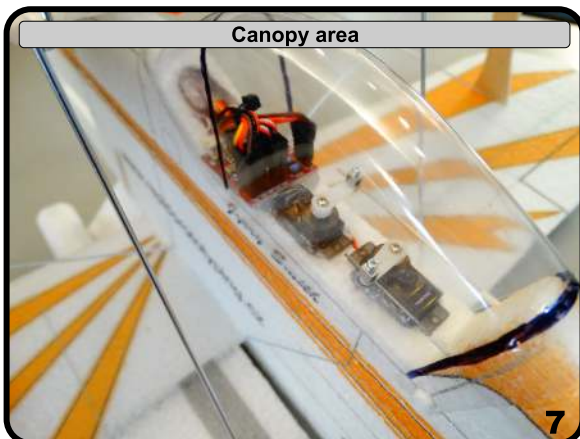
5

Close-Up of Rudder push rod and plastic guide



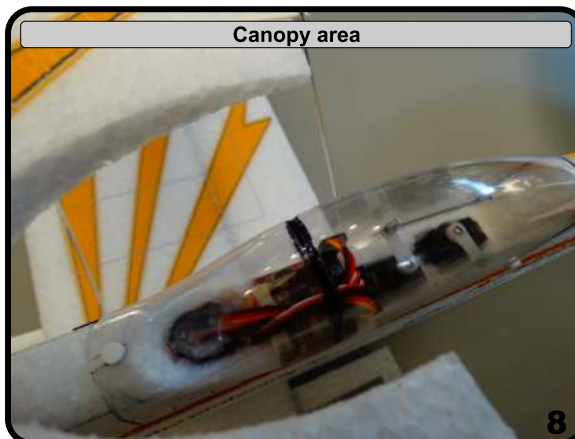
6

Canopy area



7

Canopy area



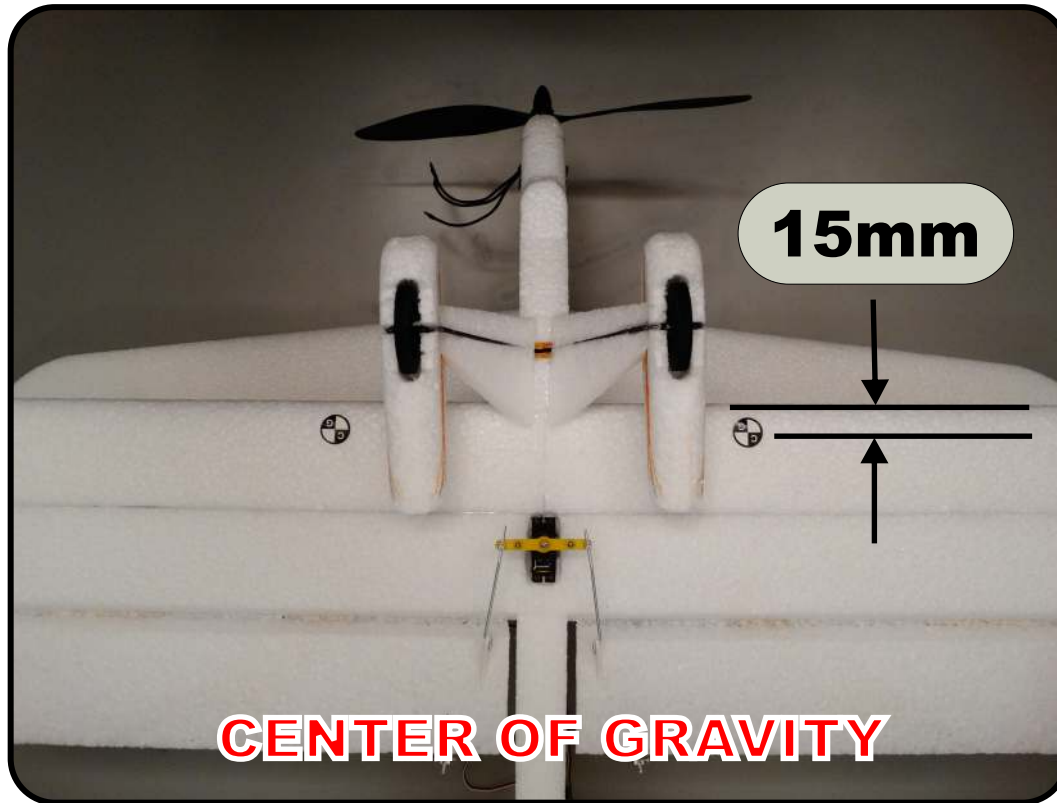
8

All ready for the field



9

CENTER OF GRAVITY AND CONTROL THROWS



15mm from Lower Wing L.E.

Locate all the electronics to achieve indicated CG point. Use Velcro for initial flights for battery mounting and experiment with it's position until you have determined the best spot for your flying style.

Control Throws

Ailerons: +/- 40 deg

Rudder: +/- 30 deg

Elevator: +/- 40 deg

**Expo and
Dual Rates to suit**

Control Throws should be adjusted to flying style and adjusted to work with in the boundaries of the setup. For extreme flying max throws should be used. For sport and novice flying decrease throws by approx half on all surfaces



PRE-FLIGHT & TESTING

PREFLIGHT Checks

Motor: Should run smoothly at all stick positions, and transition smoothly from low to high RPM. If the motor is turning backwards, reverse two of the three wires between the motor and ESC. Check that the screws holding the motor to the airframe are tight and secure.

Flight Controls: Set all to neutral or level positions with sticks in the neutral positions. Ensure that all controls and linkages move freely. Double check that all hinged areas are free from rips or tears. Verify proper control surface directions. Right Roll is – right aileron up, left aileron down, Left Roll is left aileron up and right aileron down.

Batteries: Should be fully charged prior to each flight. Watch transmitter battery level and follow manufactures recommendations. Motor battery should not be drained any further than recommended by the manufacture, use a timer to prevent an over discharged condition.

Radio: All trims should be set to neutral and throttle in the low position. Check that rate switches and mixes are set properly.

Range Check: With and without the motor running per radio manufactures instructions. If there is insufficient range or significant reduction with the motor running, resolve and re-test before flying.

PREFLIGHT Checks

The first flights should be done with the CG at the recommended position, and reduced control rates until comfortable with your handling of the aircraft. As your experience with the aircraft grows experiment with different CG points and control rates. After all flights, check the aircraft over for damage and/or other items that may adversely affect flight performance.

This Foamie Plane is a high performance aircraft and will provide hours of entertainment, including the occasional crash. If, as the result of a crash, the foam tears, simply glue with Welders, FoamTac or CA. Many pilots prefer Welders or FoamTac because they remain flexible after drying. CA however, is more suited for the “quick” repair.

This aircraft can be flown indoors or outdoors. It is however designed specifically for outdoor Sport Style flying and will be right at home at the local park, backyard or flying field.

STORAGE

This EPP plane should be stored hanging directly from it's prop. Storing in other fashions, including on it's landing gear, will put stress on the airframe could cause the airframe to distort. Storage in a hot car could also cause damage.

Be safe and enjoy, thank you again for purchasing a Twisted Hobbys' Product!

TIPS AND TRICKS

- A good building surface is “drop ceiling” panel from a local hardware store on a nice flat board
- Use parchment paper between the areas being glued and your work surface
- Heavy flat objects (like books, batteries, etc.) could be used to hold everything flat
- When resetting your radio, start with all the ATV's or throw volumes at 100%.
- Make sure you have set the direction of the servos correctly before attempting to trim for zero position.
- If possible try the servo horns in different locations to determine which position will require the least amount of sub trim.
- Installing the servo horns in their final location and attaching quick links to the servos may make servo installation much easier later.
- On the Orange Rx, the negative pin is the one closest to the flat side of the circuit board.
- Keep a good supply of sharp knife blades handy when building a foamie airplane.
- Use low temp hot glue for gluing electronics, this will allow for easy removal later if necessary. The low temp hot glue can be “released” by painting” the glue bead with an alcohol soaked cotton swab a couple times.
- A business card with the corners clipped off can be used as a small square.
- Allowing the Welders glue to set for five minutes before assembly will shorten the tack up time, just be sure if doing it this way that you get the parts into position quickly, as the glue will start to bond on contact. Any joints that you feel are going to require adjustment, it is best to assembly the pieces while the glue is wet. The Green (high tack) masking tape works the best when used to clamp things together on an EPP foam airplane.
- When gluing the rudder to the fuselage, stick pins could be used to hold in position if wanting to handle the airframe before it is completely dry
- A rotary tool with a cutting wheel could be used to produce grooves in fiber glass parts instead of coarse sand paper. Use a hatch pattern. This creates more bonding area for the glue.

NOTES AND S/U SHEET

Setup Sheet

Transmitter -

Receiver -

Model

Weight - g oz

CG Point - mm from wing leading edge

timer - min

Travels and Exponential

	low rate	high / 3D
right aileron up -		
right aileron down -		
left aileron up -		
left aileron down -		
aileron expo -		
rudder right -		
rudder left -		
rudder expo -		
elevator up -		
elevator down -		
elevator expo -		

Electronic Components

Aileron Servo -

Rudder Servo -

Elevator Servo -

Battery -

motor -

ESC -

Propeller -