

RADIO CONTROL MODEL / RC FLUGMODELL

Sport "JET"

TOMIHAWK

Instruction manual / Montageanleitung

ALL Balsa, PLYWOOD CONSTRUCTION AND ALMOST READY TO FLY



VQA023

TECHNISCHE DATEN

Spannweite	1372mm
Elektroantrieb	870 Watt (PULSAR 60)
Verbrennerantrieb	7.5cc 2-T
Fernsteuerung	4 Kanal / 4 Servos

SPECIFICATIONS

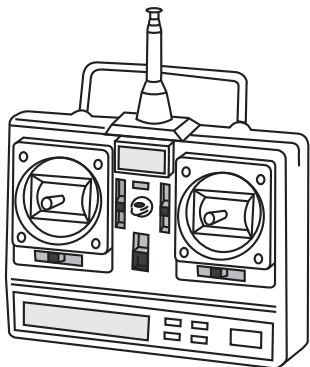
Wingspan	1372mm
Electric Motor	870 Watt (PULSAR 60)
Glow Engine	46 2-T
Radio	4 Channel / 4 Servos

WARNING! This radio controlled model is NOT a toy. If modified or flown carelessly it could go out of control and cause serious human injury or property damage. Before flying your airplane, ensure the air field is spacious enough. Always fly it outdoors in safe areas and seek professional advice if you are unexperienced.

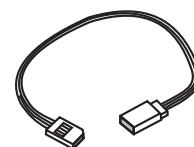
ACHTUNG! Dieses ferngesteuerte Modell ist KEIN Spielzeug! Es ist für fortgeschrittene Modellflugpiloten bestimmt, die ausreichende Erfahrung im Umgang mit derartigen Modellen besitzen. Bei unsachgemäßer Verwendung kann hoher Personen- und/oder Sachschaden entstehen. Fragen Sie in einem Modellbauverein in Ihrer Nähe um professionelle Unterstützung, wenn Sie Hilfe im Bau und Betrieb benötigen. Der Zusammenbau dieses Modells ist durch die vielen Abbildungen selbsterklärend und ist für fortgeschrittene, erfahrene Modellbauer bestimmt.



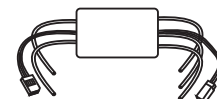
REQUIRED FOR OPERATION (Purchase separately)



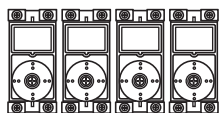
10.5x6 for .40 - 2 cycle engine
 11x6 for .46 - 2 cycle engine
 12x6 for .60 - 4 cycle engine
 12x7 for .70 - 4 cycle engine
 13x6 for Quantum 4120/05



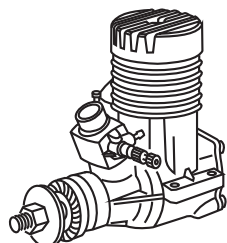
Extension for aileron servo, retract servo.



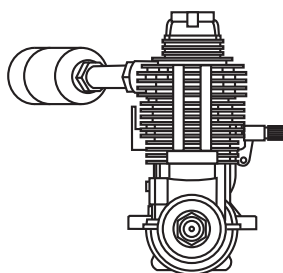
Phoenix-60 Brushless Motor Control



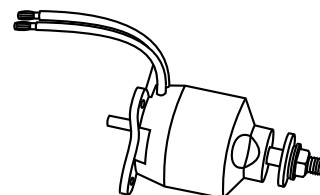
Minimum 4 channel radio for airplane with 4 servos
 .Motor control x1 .Aileron x1
 .Elevator x1 .Rudder x1



.46 ~ .50 - 2 cycle



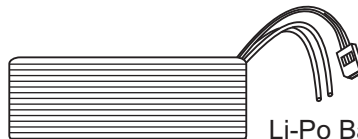
.60 ~ .70 - 4 cycle



Quantum 4120/05 Brushless Motor or equivalent.



Silicone tube



Li-Po Battery, 14.8V, 4000mAh, 80A

GLUE (Purchase separately)



Silicon sealer

Cyanoacrylate Glue

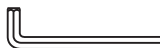


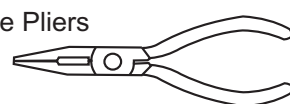
Epoxy Glue (5 minute type)
 Epoxy Glue (30 minute type)

TOLLS REQUIRED (Purchase separately)

Hobby knife 

Phillip screw driver 

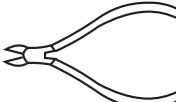
Hex Wrench 

Needle nose Pliers 

Scissors 

Awl 

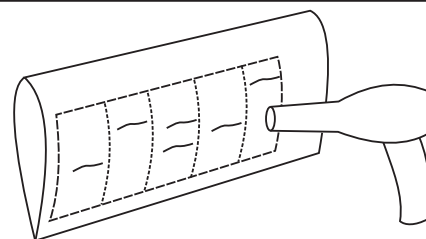
Sander 

Wire Cutters 


Masking tape - Straight Edged Ruler - Pen or pencil - Rubbing alcohol - Drill and Assorted Drill Bits


The pre-covered film on ARF kit may wrinkle due to variations of temperature. Smooth out as explained right.


* Use an iron or heat gun. Start as low setting. Increase the setting if necessary. If it is too high, you may damage the film





Symbols used throughout this instruction manual, comprise:


 Drill holes using the stated size of drill (in this case 1.5 mm Ø)


 Take particular care here


 Hatched-in areas: remove covering film carefully

 Check during assembly that these parts move freely, without binding

 Use epoxy glue

 Apply cyano glue

 Assemble left and right sides the same way.

 Not included. These parts must be purchased separately

Read through the manual before you begin, so you will have an overall idea of what to do.

CONVERSION TABLE

1.0mm = 3/64"	3.0mm = 1/8"	10mm = 13/32"	25mm = 1"
1.5mm = 1/16"	4.0mm = 5/32"	12mm = 15/32"	30mm = 1-3/16"
2.0mm = 5/64"	5.0mm = 13/64"	15mm = 19/32"	45mm = 1-51/64"
2.5mm = 3/32"	6.0mm = 15/64"	20mm = 51/64"	

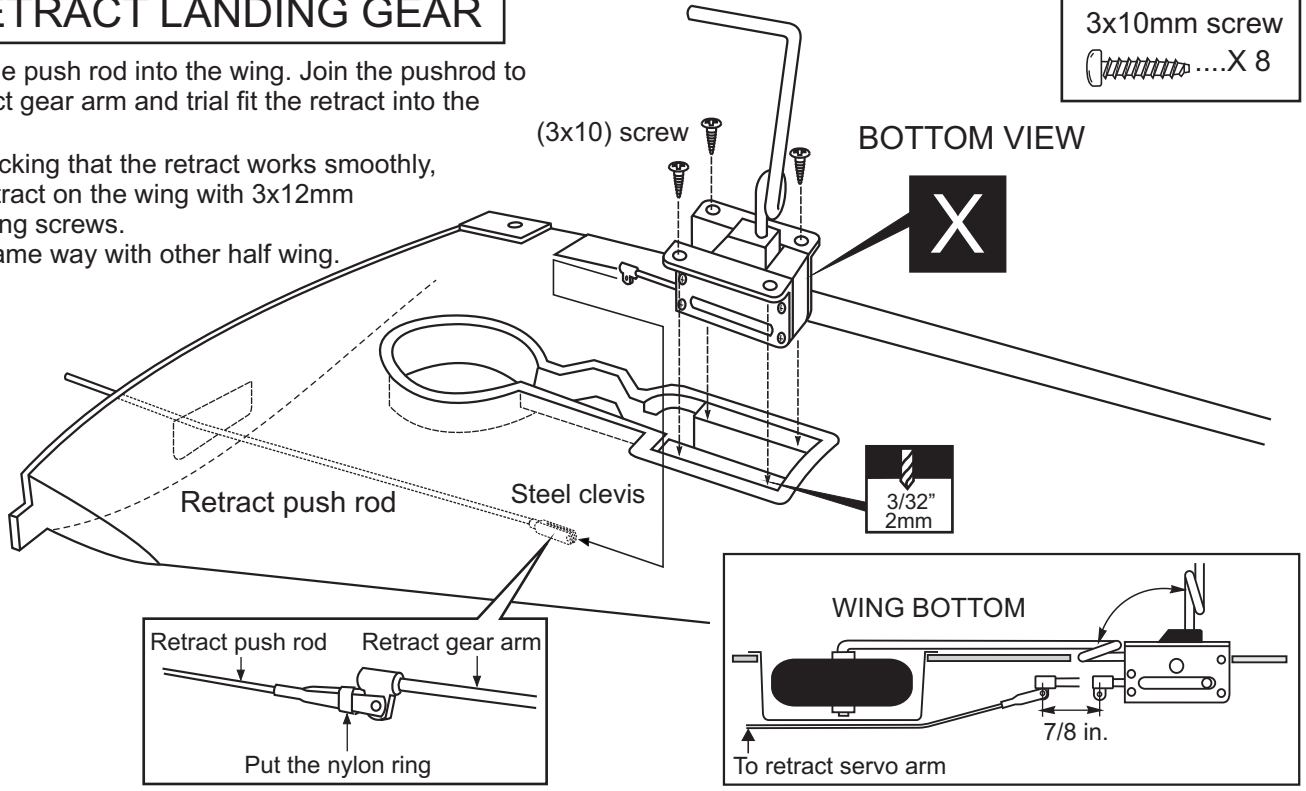
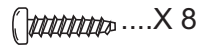
1- RETRACT LANDING GEAR

Trial fit the push rod into the wing. Join the pushrod to the retract gear arm and trial fit the retract into the wing.

After checking that the retract works smoothly, fix the retract on the wing with 3x12mm self tapping screws.

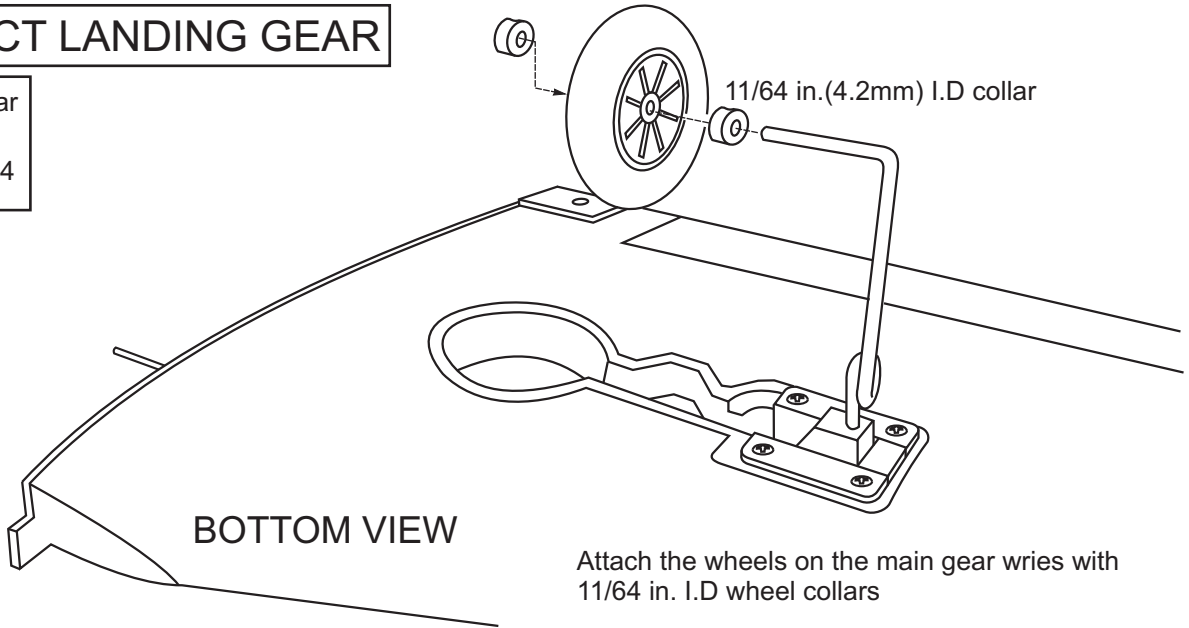
Do the same way with other half wing.

3x10mm screw



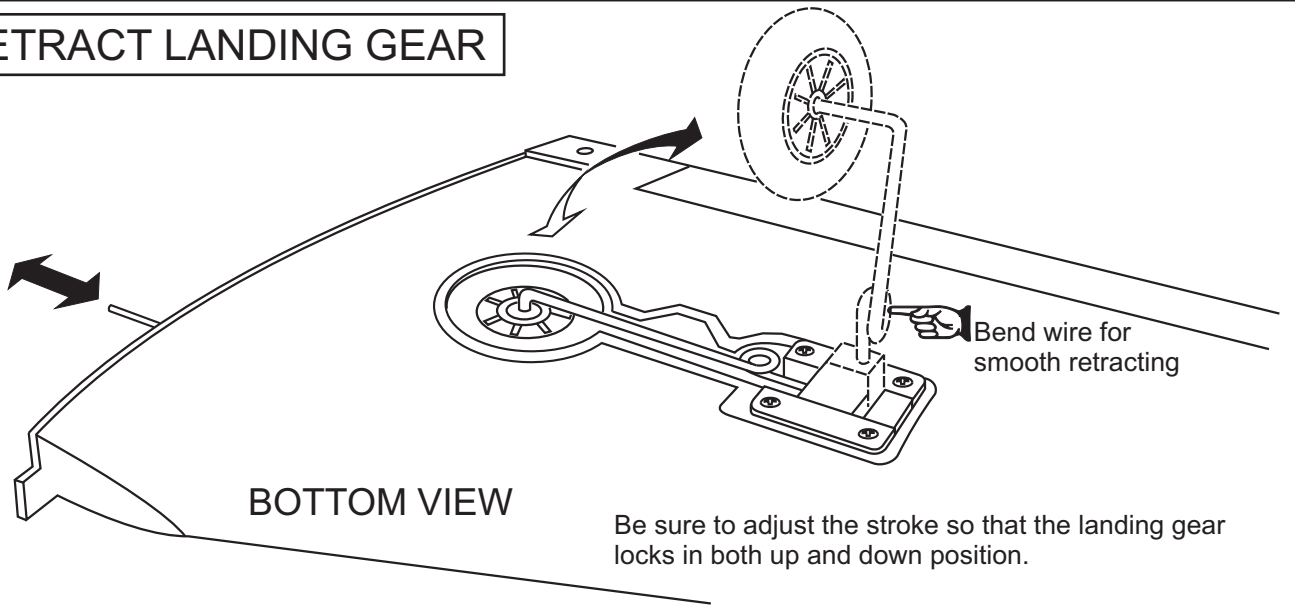
2- RETRACT LANDING GEAR

5/32" (4mm) collar



Attach the wheels on the main gear wires with 11/64 in. I.D wheel collars

3- RETRACT LANDING GEAR



Be sure to adjust the stroke so that the landing gear locks in both up and down position.

4- JOINING THE WING

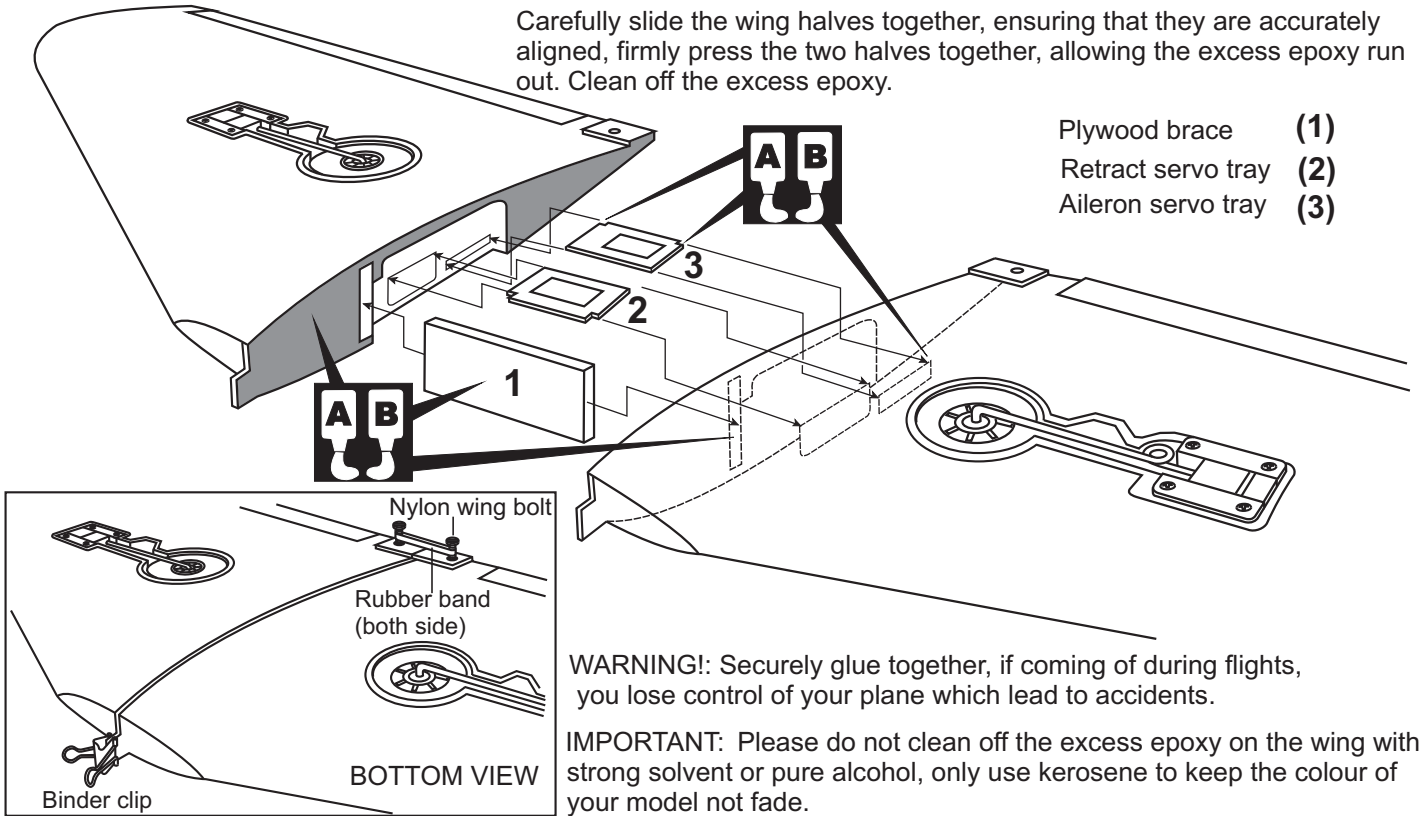
BOTTOM VIEW

Trial fit each part before gluing . Be certain that there are no gaps. If the parts will join, but with a gaps, sand or trim the parts a little at a time until the parts meet exactly with no gaps.

When joining the wing halves it is extremely important to use plenty of epoxy (30 minutes epoxy).

Carefully slide the wing halves together, ensuring that they are accurately aligned, firmly press the two halves together, allowing the excess epoxy run out. Clean off the excess epoxy.

- Plywood brace (1)
- Retract servo tray (2)
- Aileron servo tray (3)

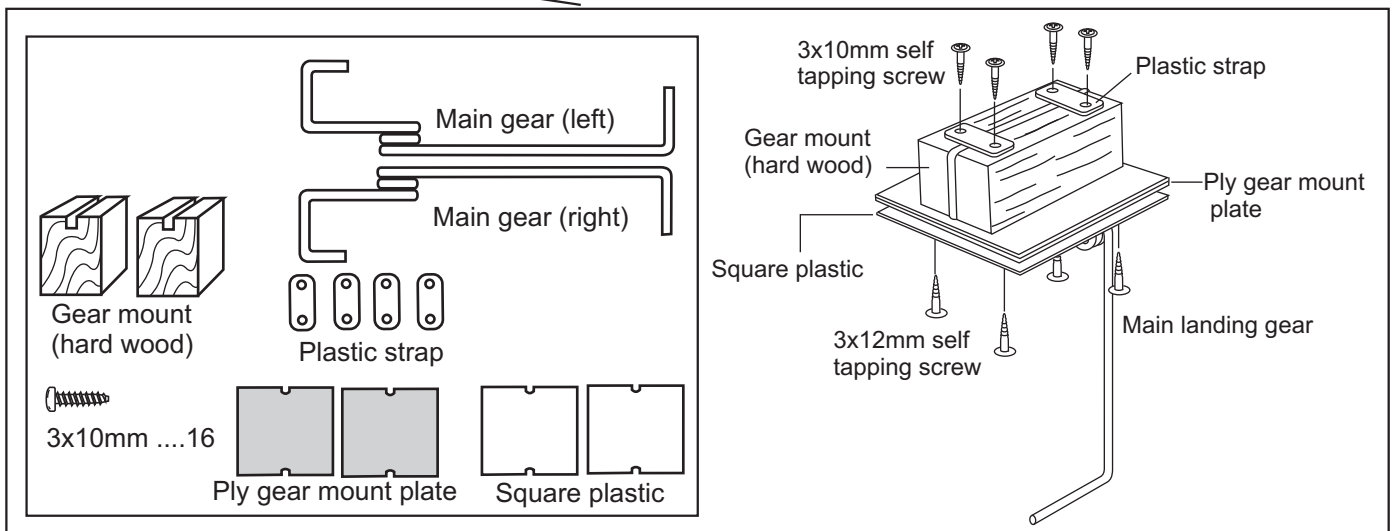


5- FIX GEAR

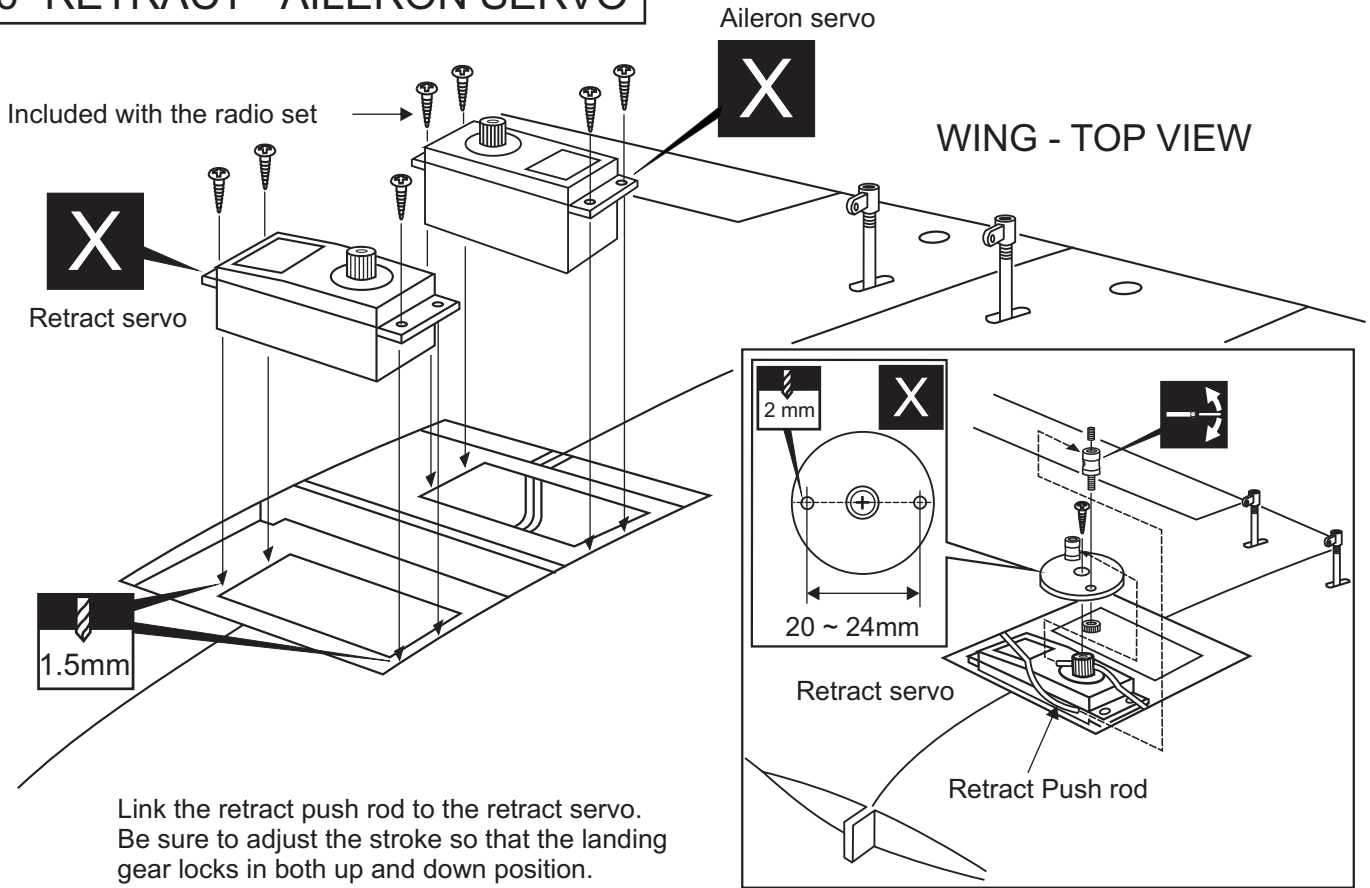
3x10mm self tapping screw

BOTTOM VIEW

5/64" 2mm

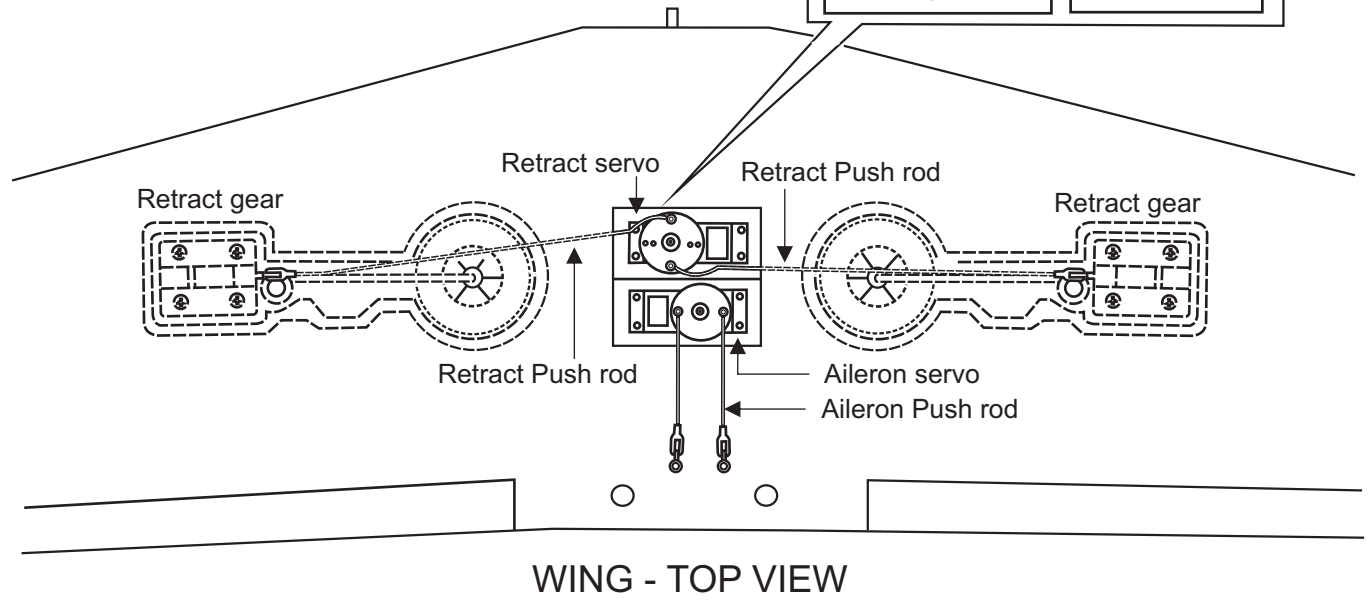
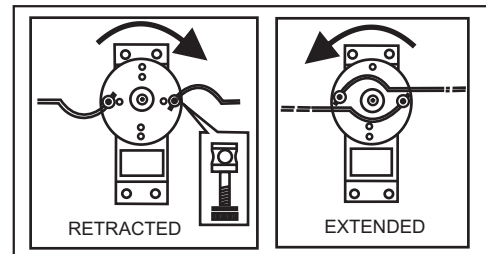


6- RETRACT - AILERON SERVO



7- INSTALLING THE LINKAGES

With the retract and retract servo in the retracted position, mark the position where each of the pushrod will attach to the servo arm, a small piece of masking tape works well for this. Cut off the excess length each rod.



Drill holes using the stated size of drill (in this case 1.5 mm Ø)

Take particular care here

Hatched-in areas: remove covering film carefully

Check during assembly that these parts move freely, without binding

Use epoxy glue

Apply cyano glue

Assemble left and right sides the same way.

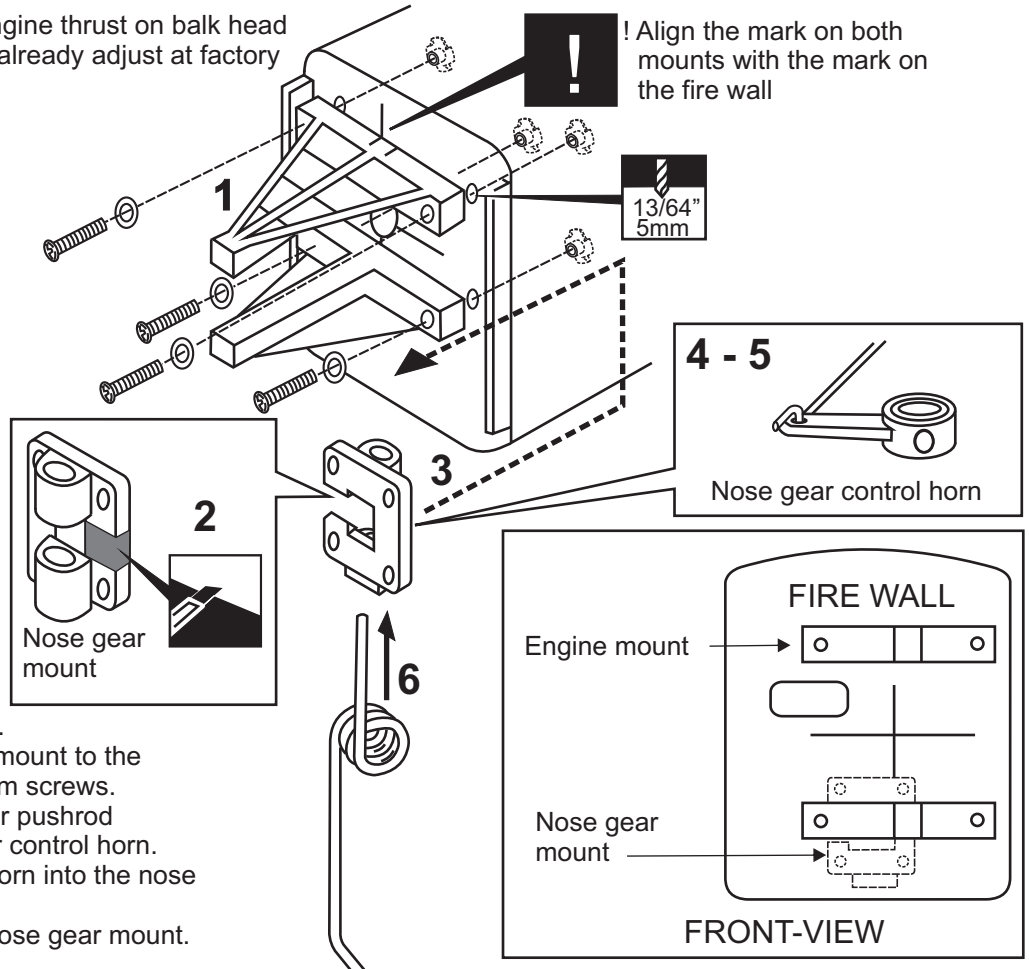
Not included. These parts must be purchased separately

8- ENGINE MOUNT - NOSE GEAR MOUNT

- 4x15mm screw4
- Washer.....4
- Blind nut.....4
- 3x20mm screw4
- Washer.....4
- Nut.....4

! Engine thrust on balk head is already adjust at factory

! Align the mark on both mounts with the mark on the fire wall



1-Secure attach the engine mount to the fire wall using the four 4x25mm screws

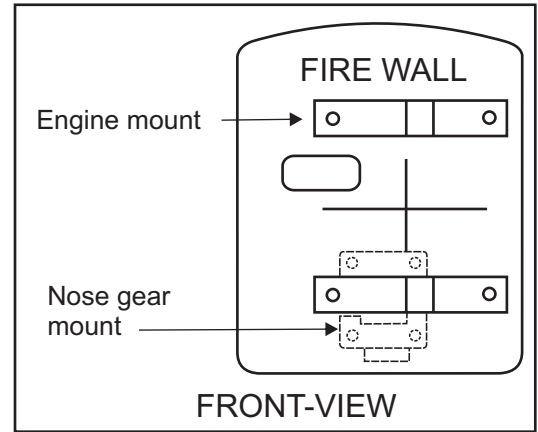
2-Cut away right side of the nose gear mount as show.

3-Secure attach the nose gear mount to the fire wall using the four 3x20mm screws.

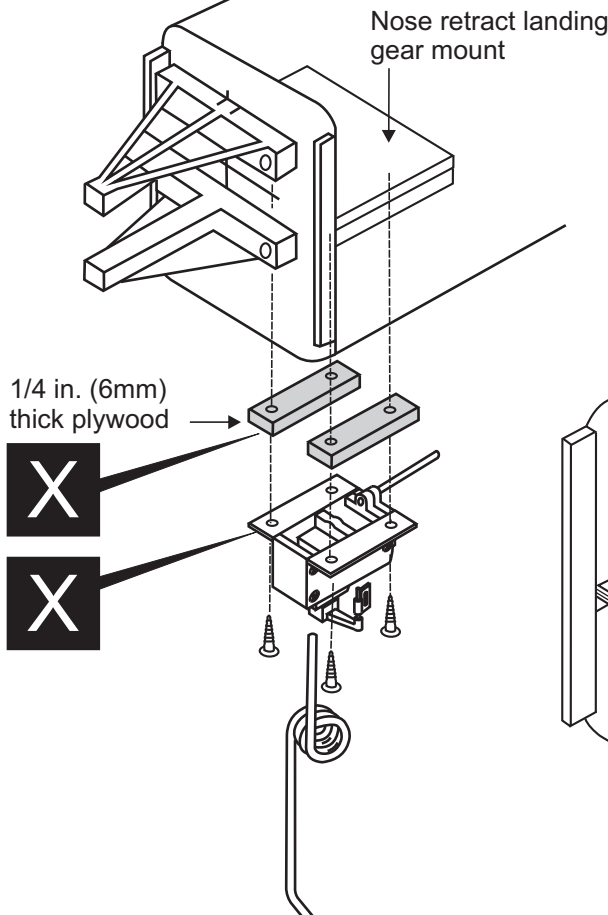
4-Insert the Z-bend of nose gear pushrod into the hole on the nose gear control horn.

5-Insert the nose gear control horn into the nose gear mount.

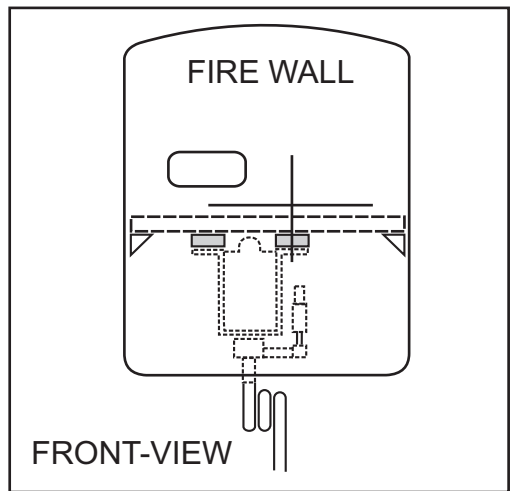
6-Slide the nose gear into the nose gear mount.



9- NOSE RETRACT LANDING GEAR



1/4 in. (6mm) thick plywood



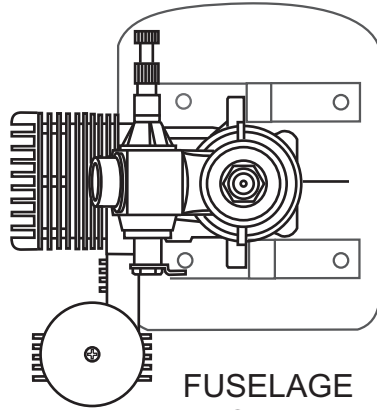
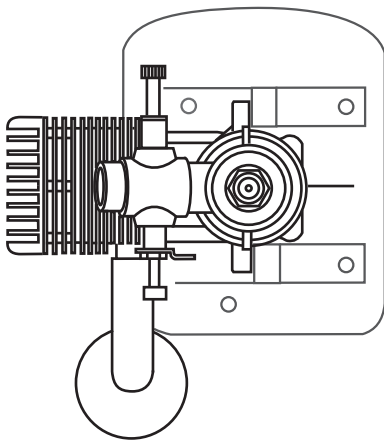
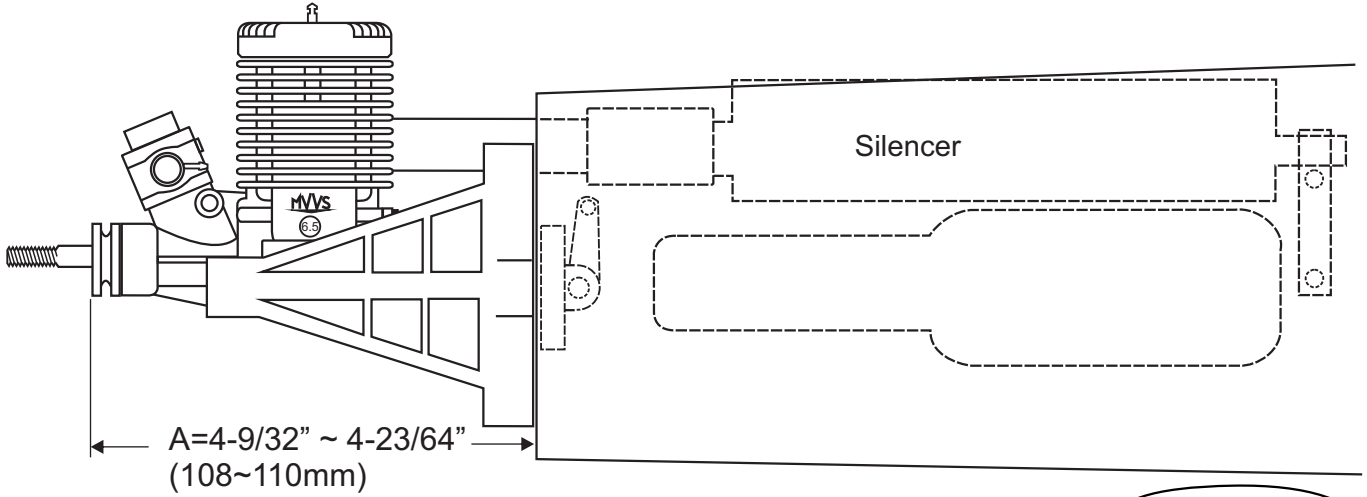
Link the pushrod with retract arm servo



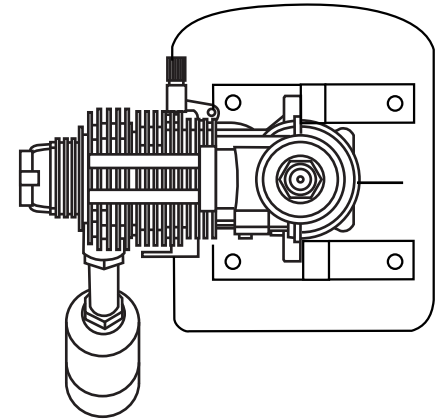
Link the pushrod with rudder arm servo

10- ENGINE (2 CYCLE)

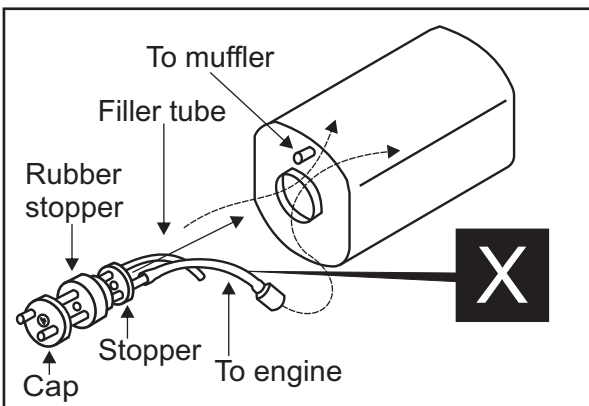
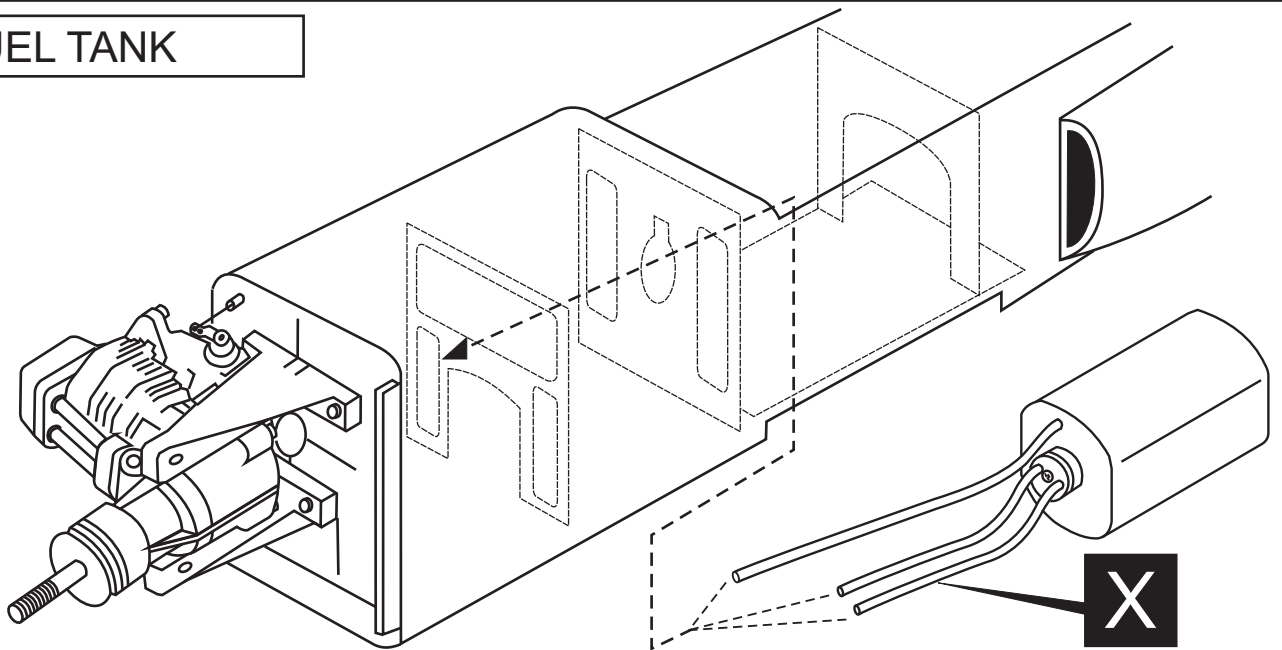
FUSELAGE TOP-VIEW



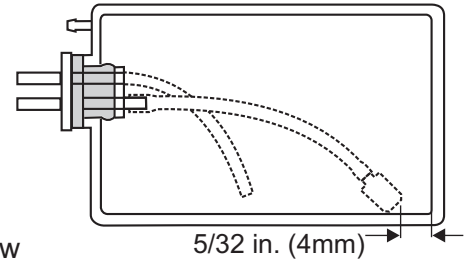
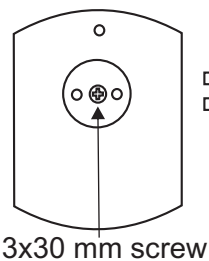
FUSELAGE FRONT-VIEW



11- FUEL TANK

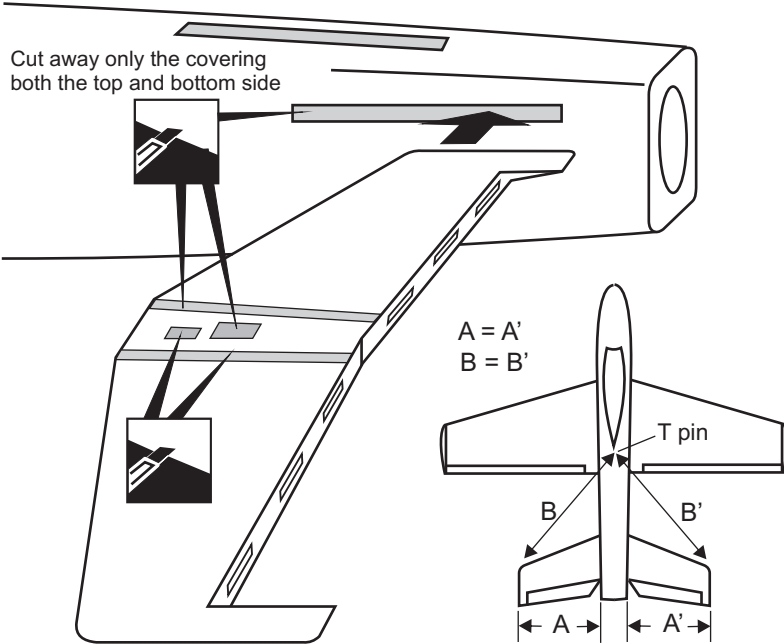


After confirming the direction . Insert this assembly, clunk end first, into the fuel tank and tighten and screw the fuel tank cap on firmly



12- HORIZONTAL STABILIZER

Cut away only the covering
both the top and bottom side



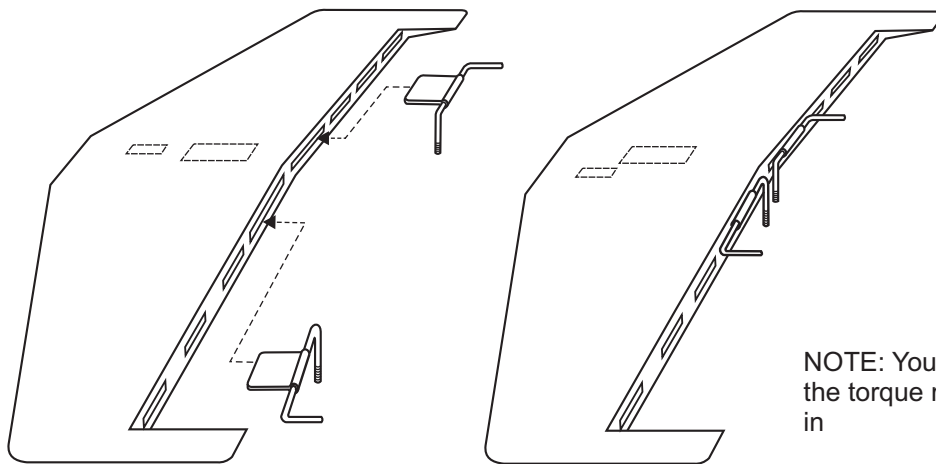
Trial fit the horizontal stabilizer in place on the fuselage. Check the alignment of the horizontal stabilizer by measuring from a fixed point along the center line of the fuselage to the leading edge on each side of the horizontal stabilizer. The distance must be equal on both sides.

Using the pencil trace around the top and bottom of the stabilizer where it meets the fuselage.

Remove the horizontal stabilizer from the fuselage. Remove the covering material from over both the precut elevator servo and rudder torque rod holes and from the gluing surfaces on both the top and bottom of the horizontal stabilizer.

NOTE: Do not glue the horizontal stabilizer into the fuselage at this time.

13- HORIZONTAL STABILIZER



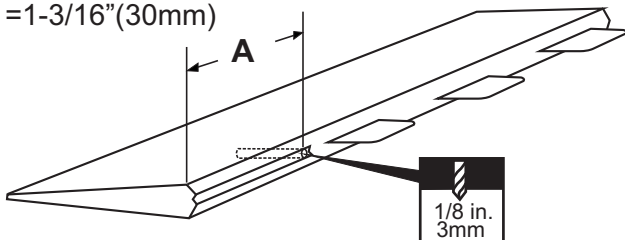
Cut two 7/8" (22mm) long slots along the hinge line in the trailing edge of the horizontal stabilizer for the two elevator torque rod bearings. Position one slot on each side of the horizontal stabilizer, 1" (25mm) out from the centerline.

Test-fit the two elevator torque rods into the slot, marking sure that the threaded portion of each torque rod is toward the bottom of the horizontal stabilizer.

NOTE: You may need to open up the slots so that the torque rod bearing are not too difficult to push in

14- HORIZONTAL STABILIZER

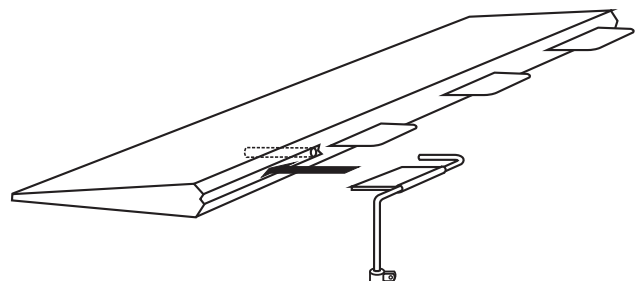
$A = 1\text{-}3/16"$ (30mm)



Cut away the covering material from over the precut elevator torque rod mounting slot in each elevator half.

Drill a 1/8" (3mm) diameter hole in each torque rod mounting slot, marking sure that you drill the hole perpendicular to the leading edge of the elevator half.

Position each hole 1-3/16" (30mm) out from the edge of the elevator half.



Thread one nylon adjustable control horn onto the end of each elevator torque rod, making sure that the adjustable control horn face forward.

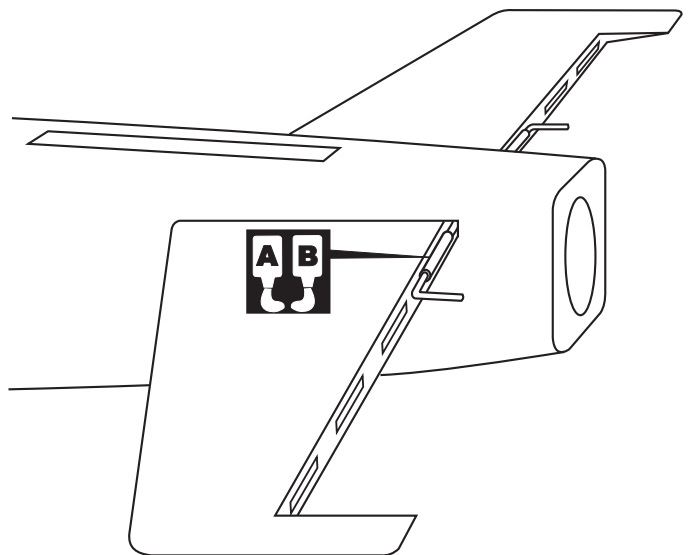
Test-fit one torque rod into each elevator half. Each torque rod should fit firmly in the precut groove and the outer surface of the torque rods should be nearly flush with the leading edge of the elevator halves.

When satisfied with the fit and alignment, remove the torque rods and set them aside for now.

15- HORIZONTAL STABILIZER

Slide the horizontal stabilizer partially into the fuselage, making sure that the top of the horizontal stabilizer is toward the top of the fuselage.

Apply a thin layer of petroleum jelly to only the pivot point of the torque rod bearing, then slide the adjustable control horn through the side of the fuselage and glue the torque rod bearing into the slot you cut previously in the horizontal stabilizer, using a thin layer of 5 minute epoxy.



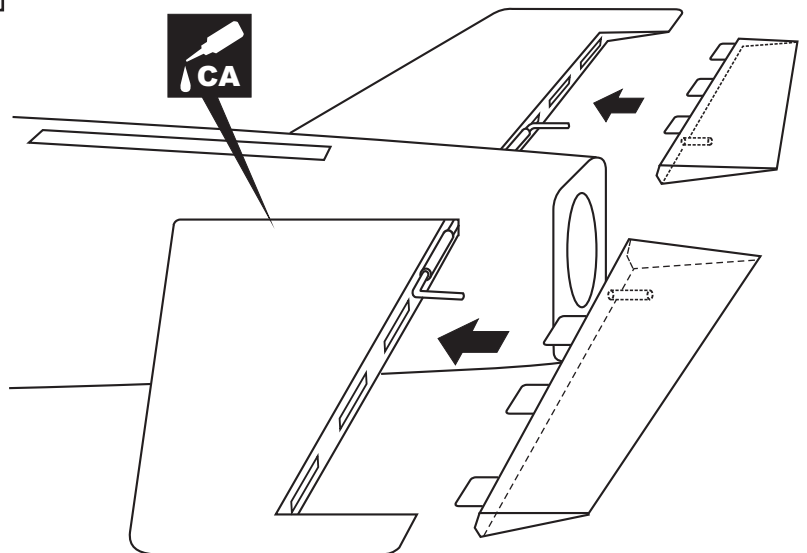
16- HORIZONTAL STABILIZER

After the epoxy sets up. Pull the horizontal stabilizer through the other side of the fuselage and repeat the previous procedures to glue the second torque rod wire into the horizontal stabilizer.

Realign the horizontal stabilizer, then glue the horizontal stabilizer into the fuselage, using a generous amount of thin CA. Apply thin CA to each of the four joints and use a generous amount to ensure a strong bond.

The elevator hinges are preglued into the elevator halves. Working with one elevator half for now, apply a thin layer of petroleum jelly to only the pivot point of the two hinges.

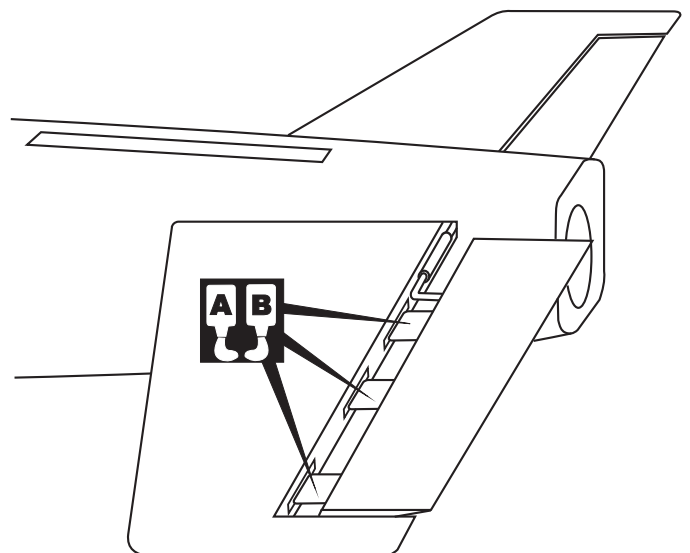
Slide a small piece of waxed paper between the torque rod and the horizontal stabilizer to prevent gluing the torque rod solid.



17- ELEVATOR

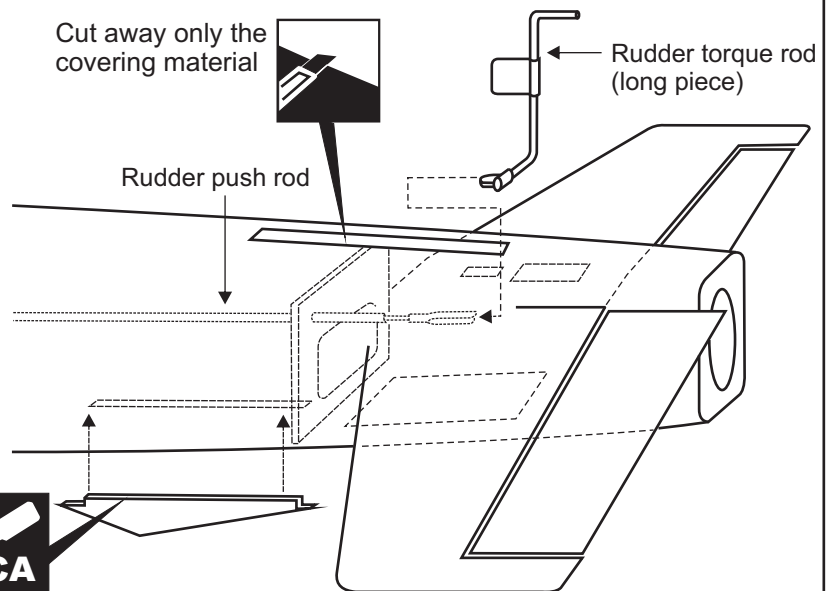
Without using glue yet, push the elevator half and its hinges into the hinge slots in the trailing edge of the horizontal stabilizer, making sure that the torque rod is firmly seated in the slot in the elevator half. There should be a minimal hinge gap and the end of the elevator half should not rub against the horizontal stabilizer.

When satisfied with the fit and alignment, hinge the elevator half to the horizontal stabilizer, using 5 minute epoxy. Make sure to apply a thin layer of epoxy to the top and bottom of both hinges and to the inside the torque rod mounting slot and to the end of the torque rod itself. Repeat the previous procedures to hinge the second elevator half to the other side of the horizontal stabilizer.



18- VERTICAL STABILIZER

Cut away only the covering material



Slide the rudder torque rod into the fuselage.

Link the rudder torque rod with the rudder push rod.



19- VERTICAL STABILIZER

Remove the covering material from over both side of the vertical stabilizer where it meet the fuselage.

Cut away the covering material from over the precut rudder hinge and rudder torque rod mounting slot.

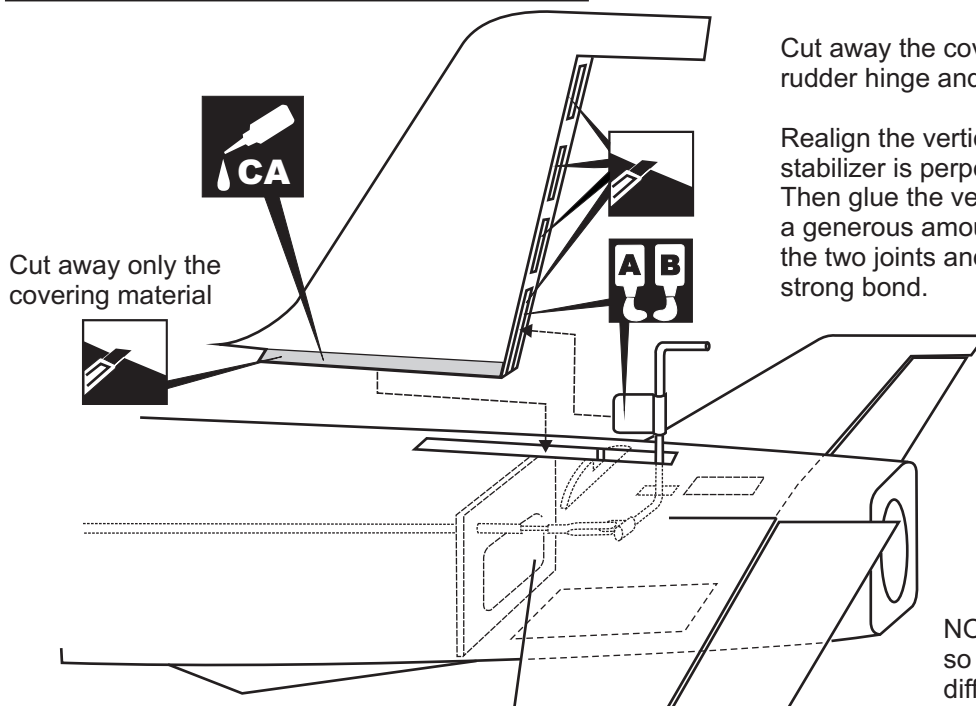
Realign the vertical stabilizer, ensure that the vertical stabilizer is perpendicular to the horizontal stabilizer. Then glue the vertical stabilizer into the fuselage, using a generous amount of thin CA. Apply thin CA to each of the two joints and use a generous amount to ensure to strong bond.

Apply a thin layer of petroleum jelly to only the pivot point of the torque rod bearing.

Glue the rudder torque rod bearing into the slot you cut previously in the vertical stabilizer, using a thin layer of 5 minute epoxy.

NOTE: You may need to open up the slots so that the torque rod bearing are not too difficult to push in.

Cut away only the covering material



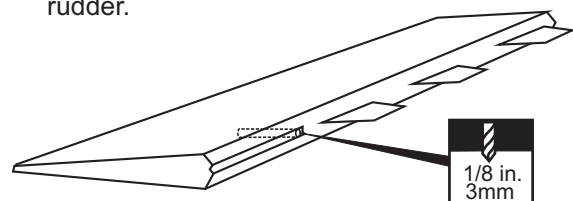
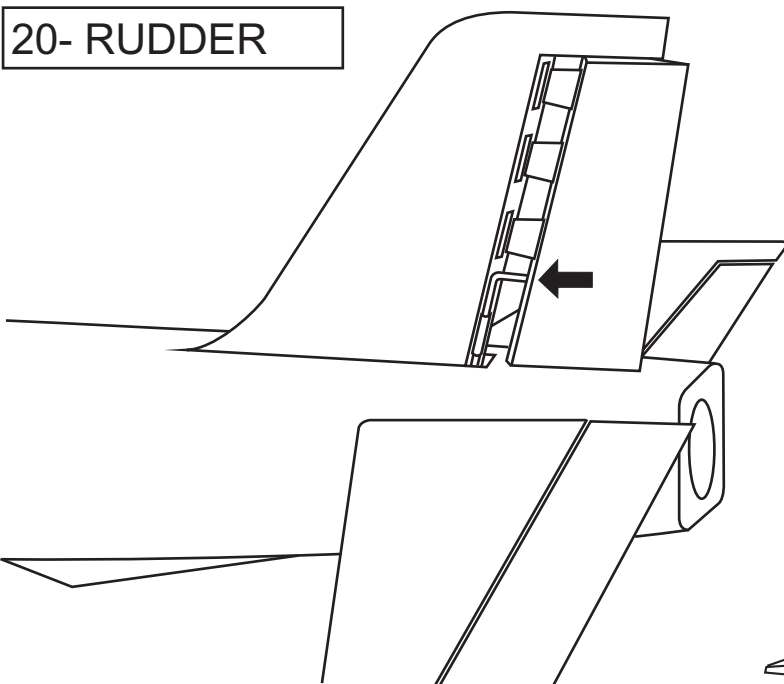
20- RUDDER

Cut away the covering material from over the precut rudder torque rod mounting slot.

Without using glue yet, push the rudder and its hinges into the hinge slots in the trailing edge of the vertical stabilizer. There should be a minimal hinge gap and the end of the rudder should not rub against the vertical stabilizer.

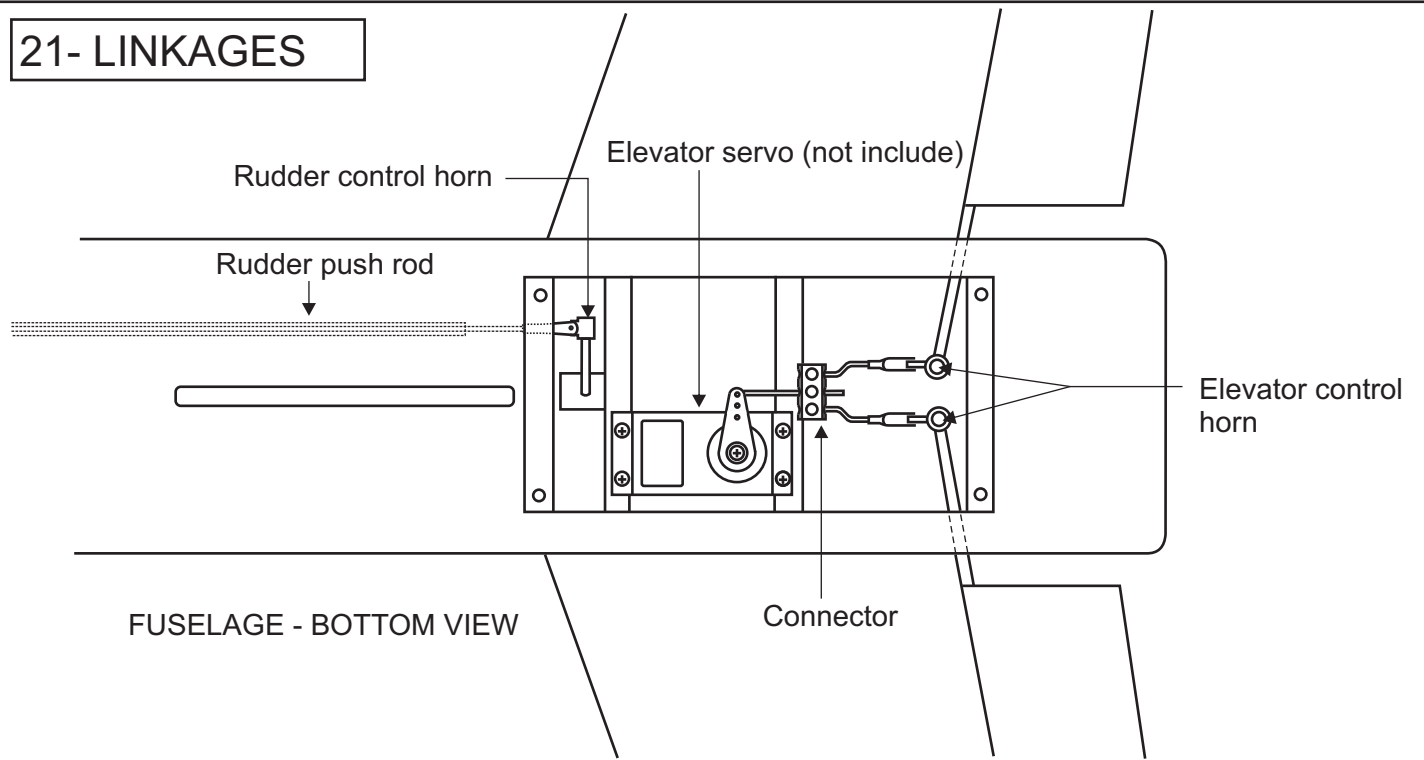
When satisfied with the alignment, mark the mounting hole position, where the rudder torque rod meets the rudder with a pencil.

Remove the rudder and drill a 1/8" (3mm) diameter hole in torque rod mounting slot, making sure that you drill the hole perpendicular to the leading edge of the rudder.

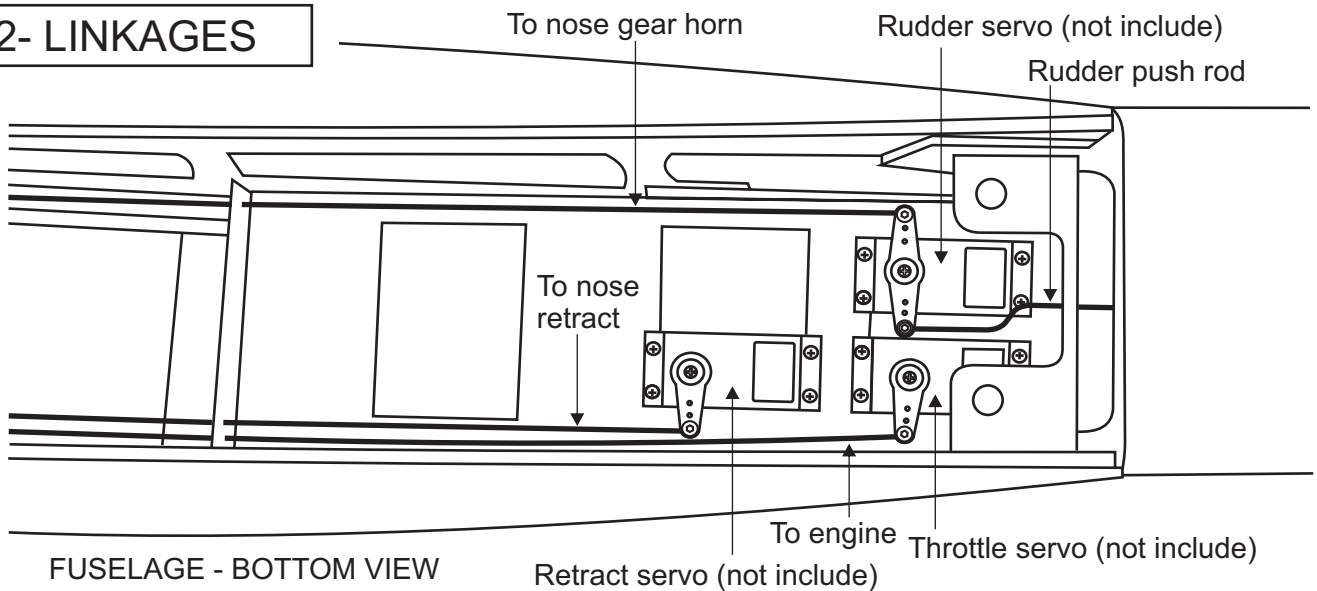


1/8 in.
3mm

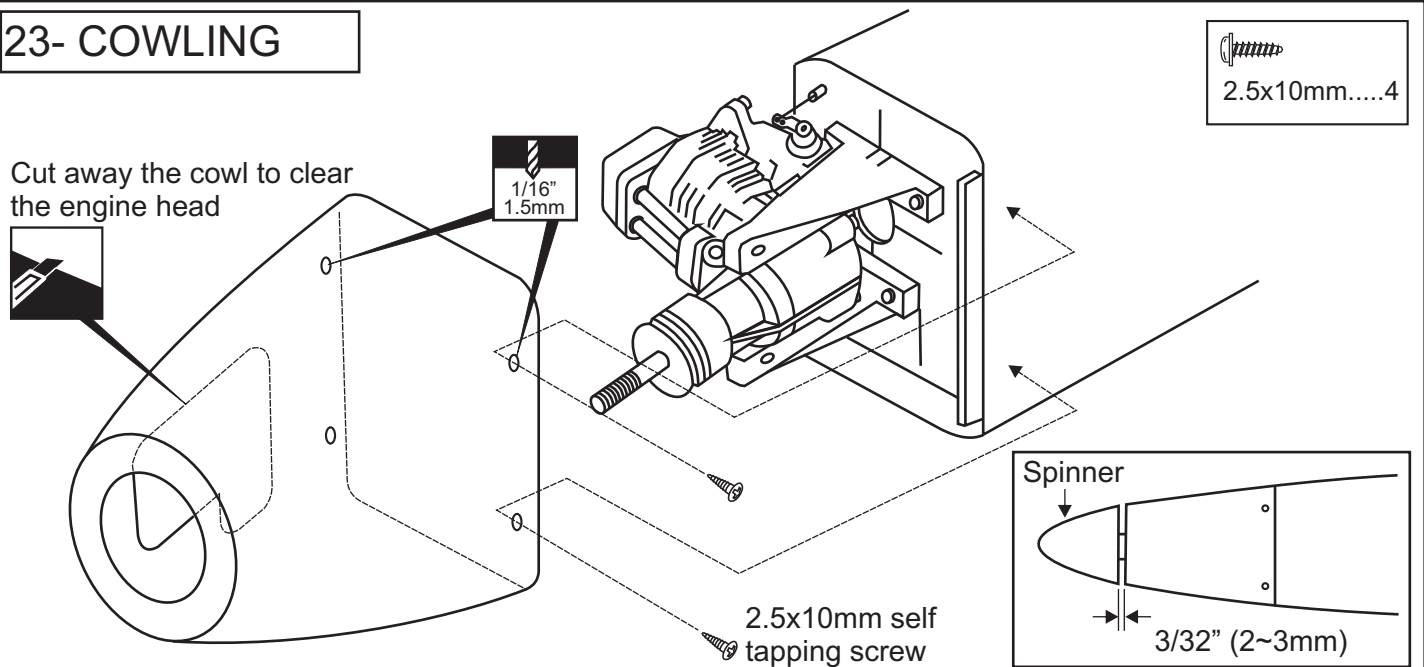
21- LINKAGES



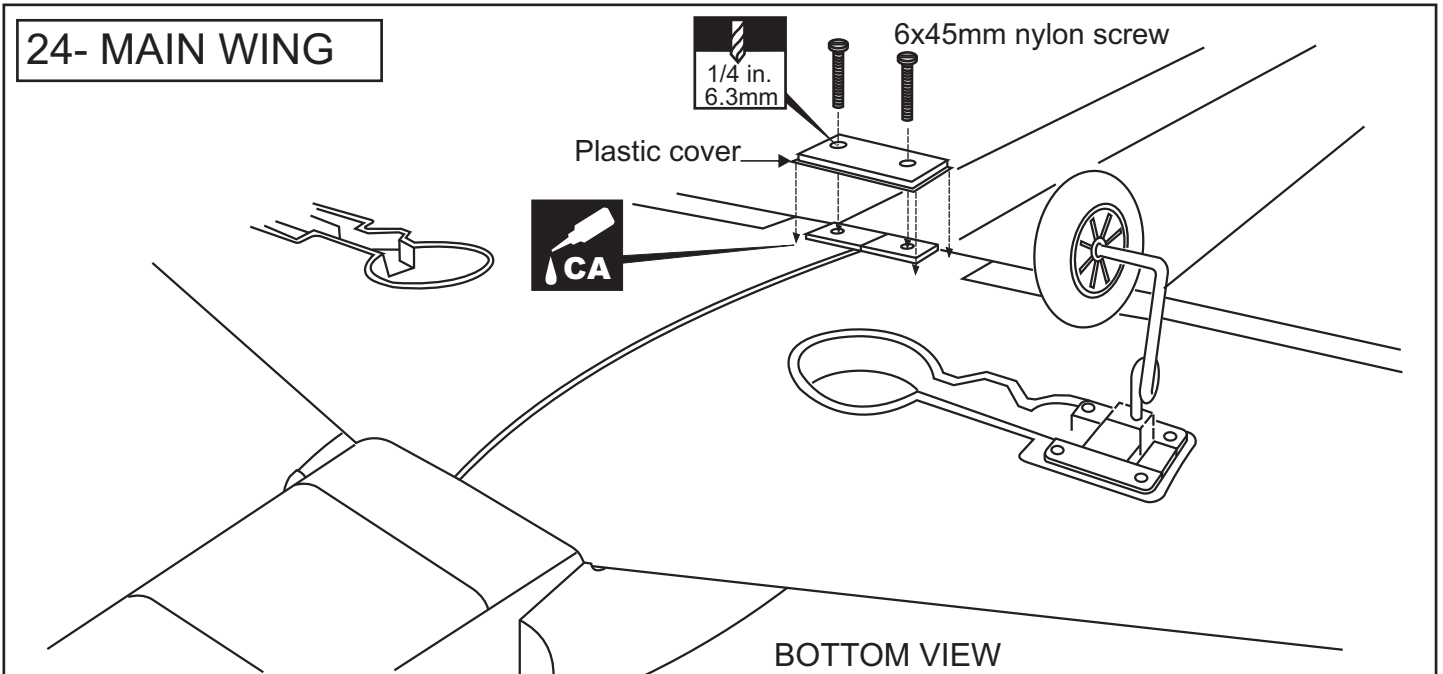
22- LINKAGES



23- COWLING



24- MAIN WING

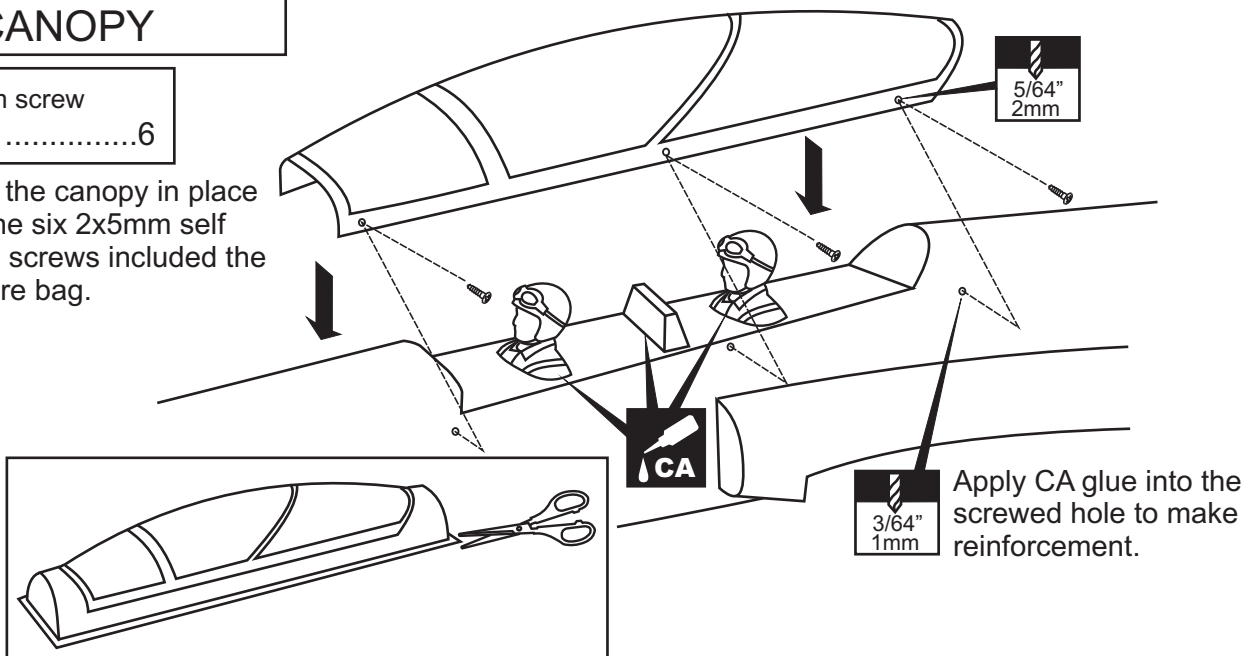


25-CANOPY

2x5mm screw

6

Secure the canopy in place using the six 2x5mm self tapping screws included the hardware bag.

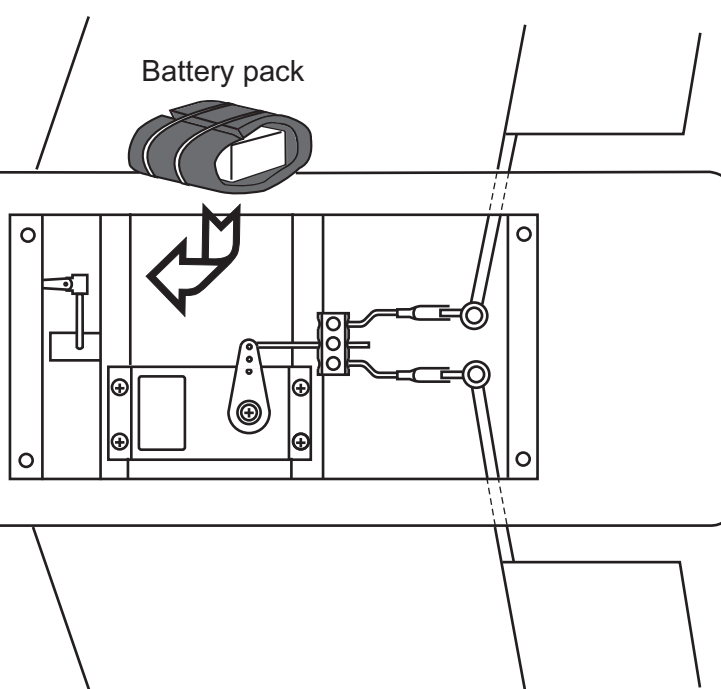


26- BATTERY

3x10mm screw

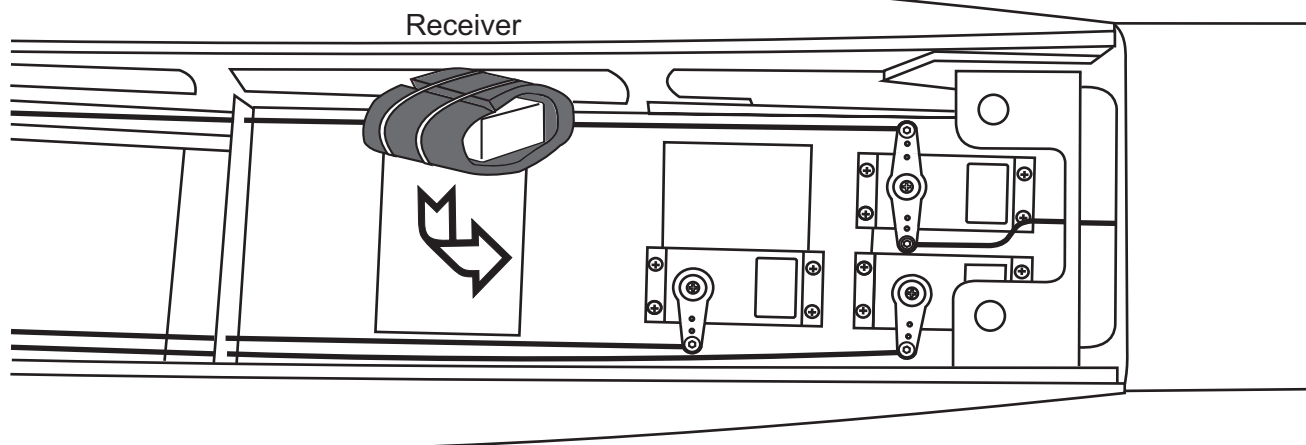
4

Securely attach the battery. If coming off during flights, you lose control of your plane which leads to accidents.



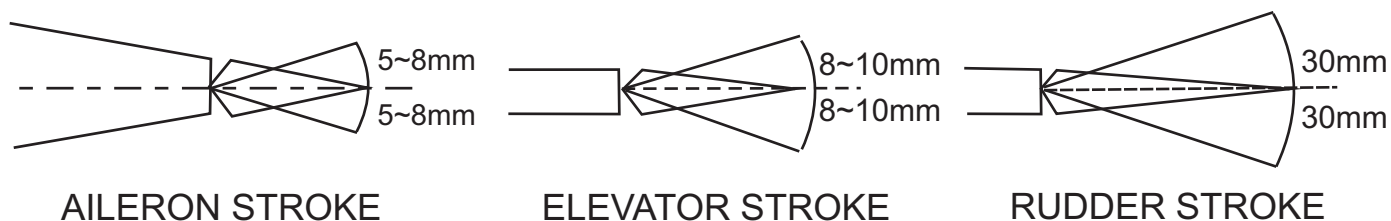
Attach the hatch in place and secure it with four 3x10mm self tapping screws.

27- RECEIVER

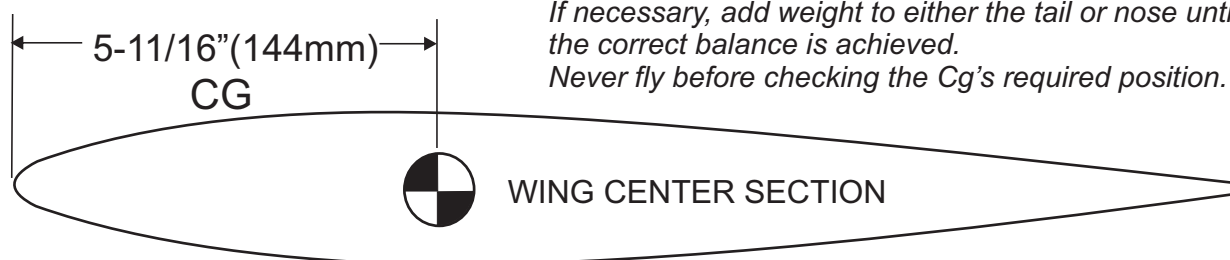


FUSELAGE - BOTTOM VIEW

28- CONTROL SURFACE THROW SETTING



29- BALANCE



WARNING! Securely install the receiver and power pack, ensuring they will not come loose or rattle during flight.

If necessary, add weight to either the tail or nose until the correct balance is achieved.

Never fly before checking the Cg's required position.

In order to obtain the CG specified, reposition the receiver and power pack

Warning!

BEFORE FLYING CHECK EVERYTHING

Before each flight, inspect the airplane for any loose parts. Check the hinges, make sure the pushrods are still firmly attached, and check the engine mounting bolts. In general, check everything on the plane that might possibly come loose.

CHECK THE FREQUENCY BEFORE FLYING

DO NOT FLY NEAR A POWER LINE

The power lines cause radio interference, so avoid flying near them.

Adjust the engine always from behind, but never from in front or the sides as rotating propeller may badly injure you!

Do not allow watching people to get too close to a rotating propeller.

Ensure the spinner and propeller are securely attached. Immediately disuse defective propeller as well as deformed spinners.

IMPORTANT: Please do not clean your model with pure alcohol, only use liquid soap with water or use glass-cleaner to clean on surface of your model to keep the colour not fade.