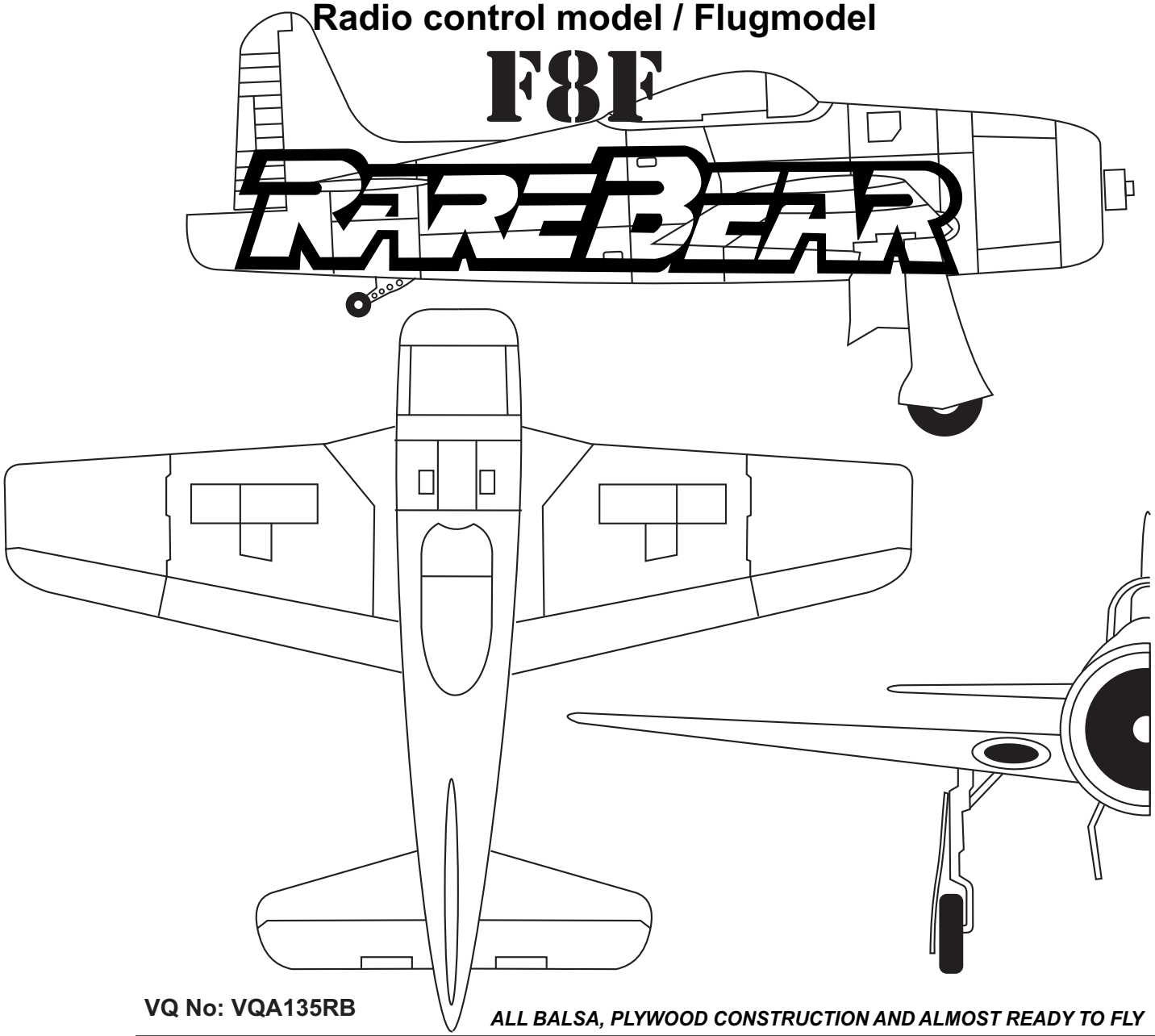
Radio control model / Flugmodel

F8F RAREBEAR



VQ No: VQA135RB

ALL BALSA, PLYWOOD CONSTRUCTION AND ALMOST READY TO FLY

Instruction manual / Montageanleitung

SPECIFICATIONS

Wingspan:.....2020mm (79.5in)
Length:.....1590mm (62.6 in)
Electric Motor:.....See next pager
Gas Engine:.....4T 40cc / 2T 40cc
RTF Weight: 7.8-8.1Kg / 17.2-17.8lbs
Radio:.....8-9 Channel / 8-9 Servos
Function: Ailerons-Elevator-Rudder-Throttle
Flaps-Optional Retractable Landing Gear.

TECHNISCHE DATEN

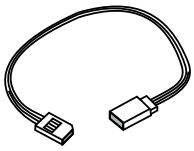
Spannweite:.....2020mm
Länge:.....1590mm
Elektroantrieb.....(siehe nächste Seite)
Verbrennerantrieb:.....40cc
Fluggewicht:.....7.8-8.1Kg
Fernsteuerung.....8-9 Kanal / 8-9 Servos

RADIO CONTROL MODEL®

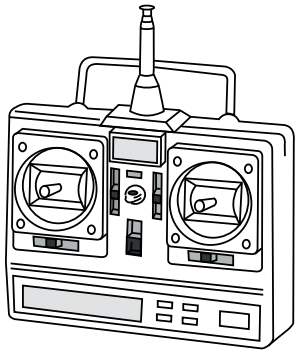
WARNING! This radio controlled model is NOT a toy. If modified or flown carelessly it could go out of controll and cause serious human injury or property damage. Before flying your airplane, ensure the air field is spacious enough. Always fly it outdoors in safe areas and seek professional advice if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

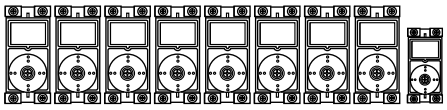
REQUIRED FOR OPERATION (Purchase separately)



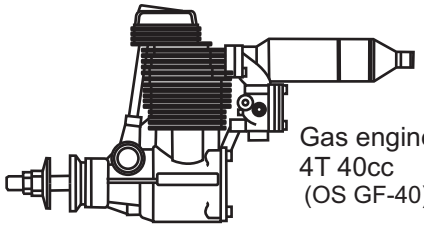
Extension cord for aileron servos: 80cm(x2)
Extension cord for flap servos: 50cm(x2)
Extension cord for retract servos: 50cm(x2)
Extension cord for Rx battery pack: 30cm(x1)
Extension cord for gear door servo: 30cm(x1)



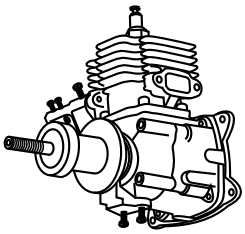
Minimum 8-9 channels radio



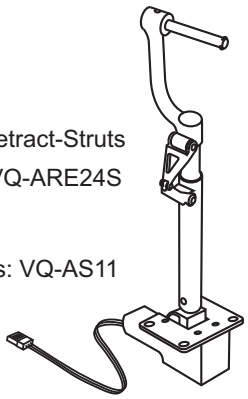
8 standard servos and 1 mini servo (for gas engine).
.Motor control x1(for GP) .Elevator x2
.Rudder x1. Aileron x2. Flap x2
.Gear door x1



Gas engine:
4T 40cc
(OS GF-40)



Gas engine:
2T 40-45cc

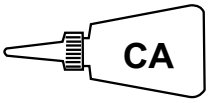


Electric retract-Struts
VQ-ARE24S

Struts: VQ-AS11

GLUE (Purchase separately)

Silicon sealer



Cyanoacrylate Glue (thin type)

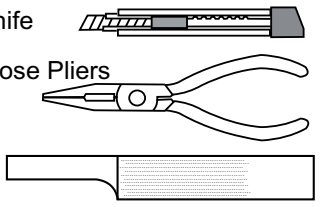
Epoxy Glue
(5 minute type)

TOLLS REQUIRED (Purchase separately)

Hobby knife

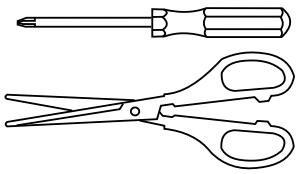
Needle nose Pliers

Sander



Phillip screw driver

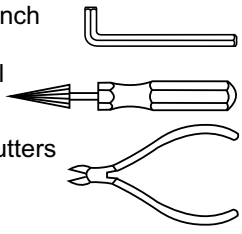
Scissors



Hex Wrench

Awl

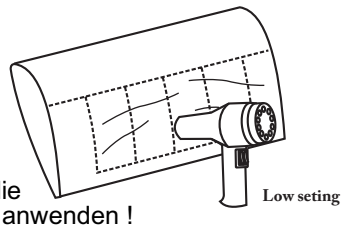
Wire Cutters



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

If exposed to direct sunlight and/or heat, wrinkels can appear. Storing the model in a cool place will let the wrinkles disappear. Otherwise, remove wrinkles in covering film with a hair dryer, starting with low temperature. You can fix the corners by using a hot iron.

Bei Sonneneinstrahlung und/oder Wärme kann die Folie erschlaffen bzw. Falten entstehen. Verwenden Sie ein Warumluftgebläse (Haartrockner) um evtl. Falten aus der Folie zu bekommen. Die Kanten können Sie mit einem Bügeleisen behandeln. Nicht zuviel Hitze anwenden !



Symbols used throughout this instruction manual, comprise:

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

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

Löcher bohren mit dem angegebenen Bohrer (hier 1,5 mm)

Hier besonders aufpassen

Schraffierte Stellen, Bespannfolie vorsichtig entfernen

Während des Zusammenbaus immer prüfen, ob sich die Teile auch reibungslos bewegen lassen

Epoxy-Klebstoff verwenden

Sekundenkleber auftragen

Linke und rechte Seite wird gleichermaßen zusammengebaut

Nicht enthalten. Teile müssen separat gekauft werden.

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”	

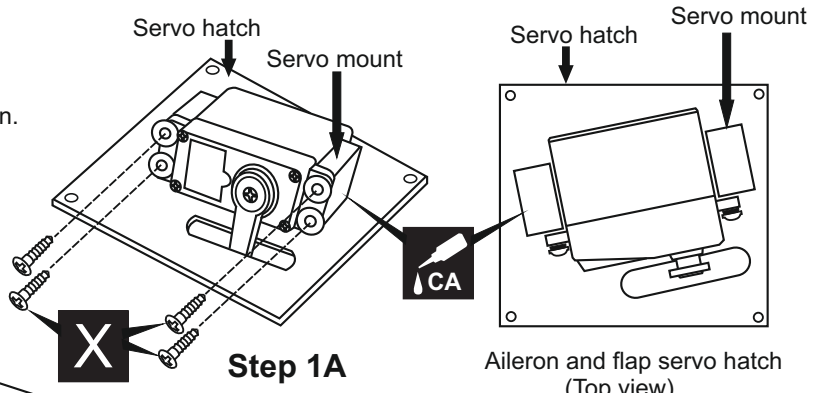
SECTION 1- WING: FLAP-AILERON

1-Move the aileron and flap servo hatch out of the wing

2-Install the aileron servo to the aileron servo hatch as shown.

3-Install the flap servo to the flap servo hatch as shown.

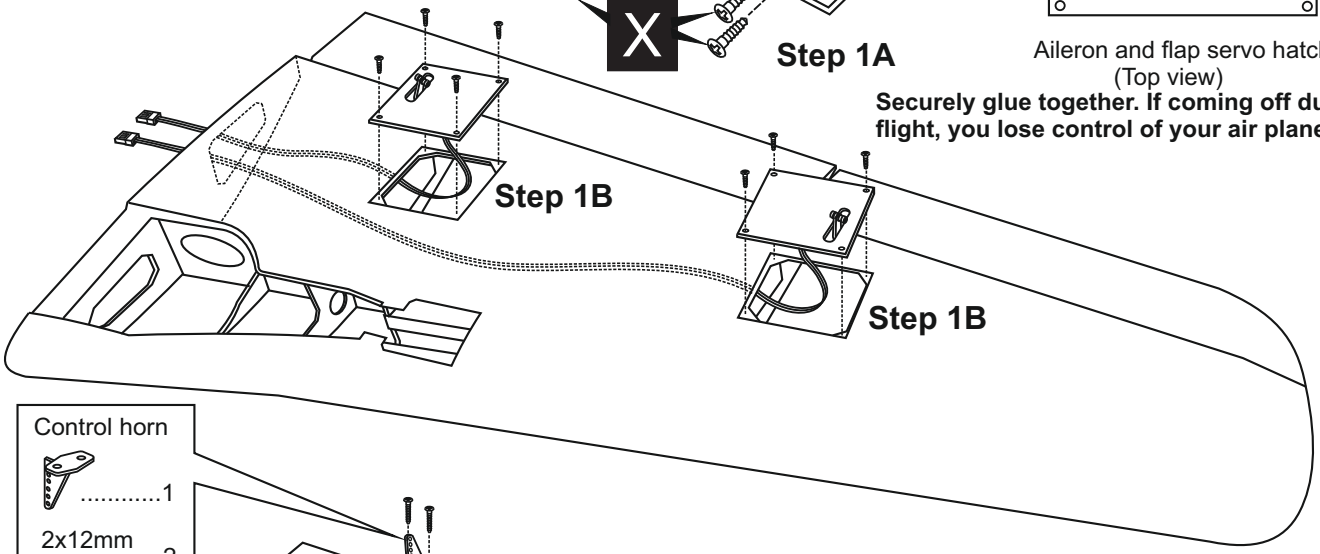
Note: If you use only one channel for both the left and right Flap, in this case, remember to install the left and right flap servo in a same direction.



Step 1A

Aileron and flap servo hatch
(Top view)

Securely glue together. If coming off during flight, you lose control of your air plane.

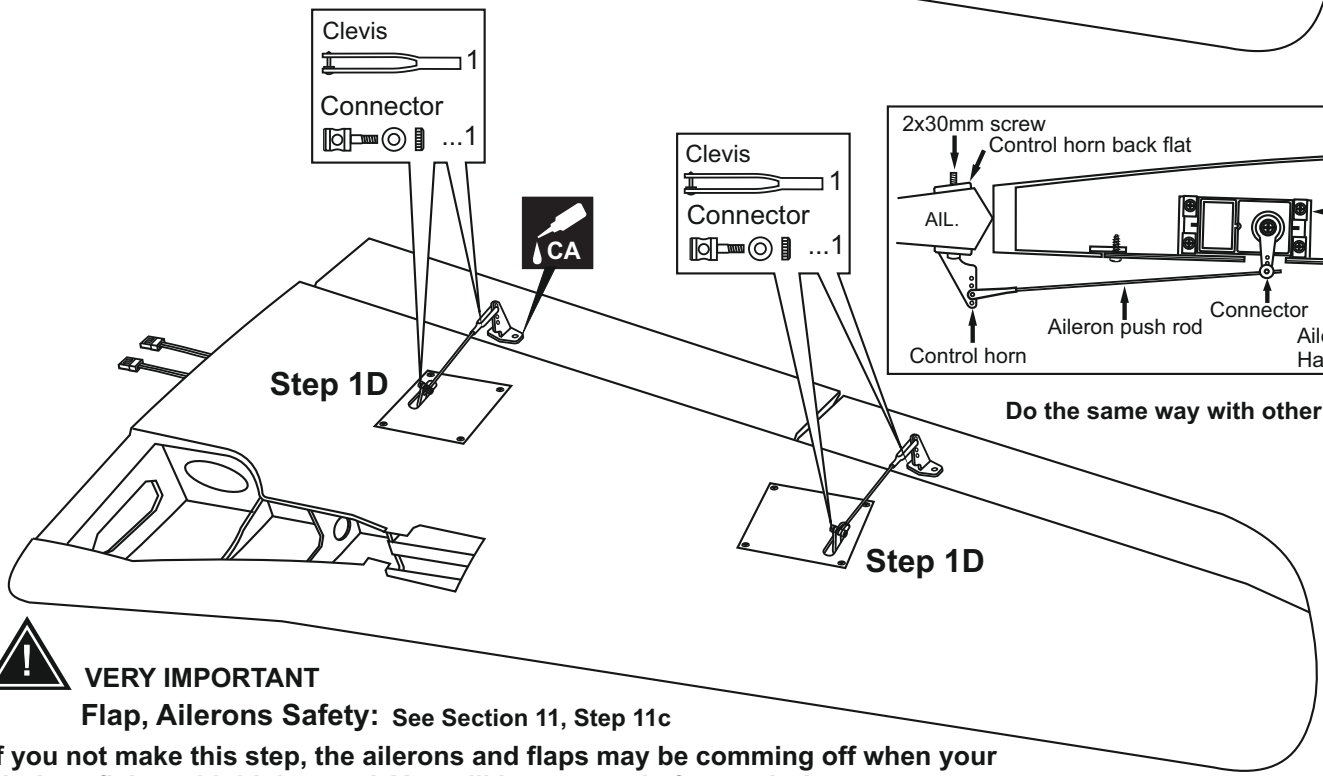


Step 1B

Step 1B

Step 1C

Step 1C



Step 1D

Step 1D

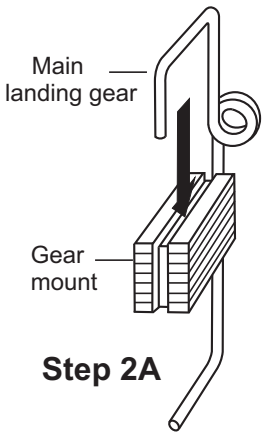
Do the same way with other wing half.

VERY IMPORTANT

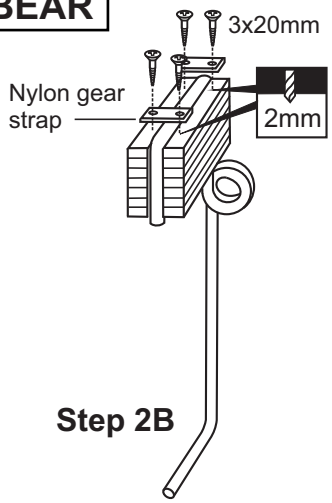
Flap, Ailerons Safety: **See Section 11, Step 11c**

If you not make this step, the ailerons and flaps may be comming off when your airplane flying with high speed. You will lose control of your airplane.

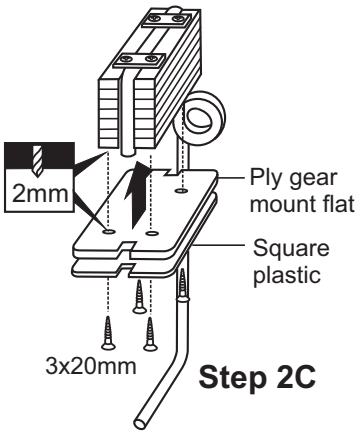
SECTION 2 - FIXED GEAR RARE BEAR



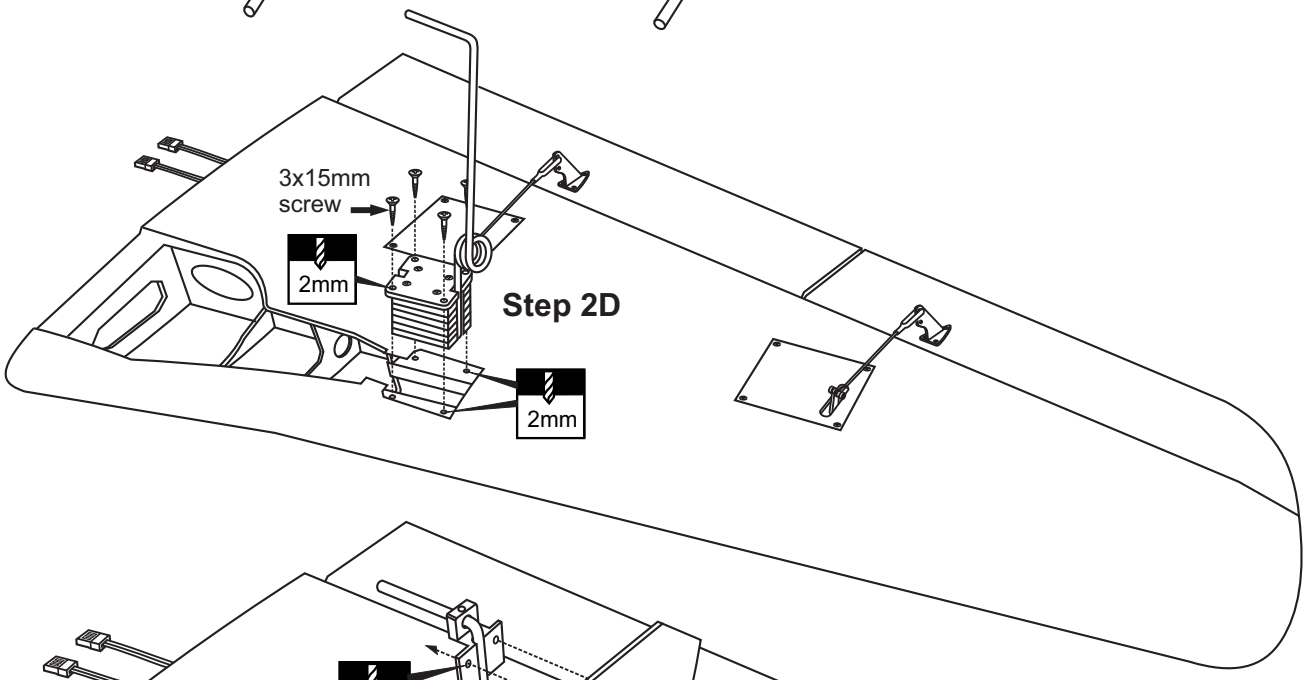
Step 2A



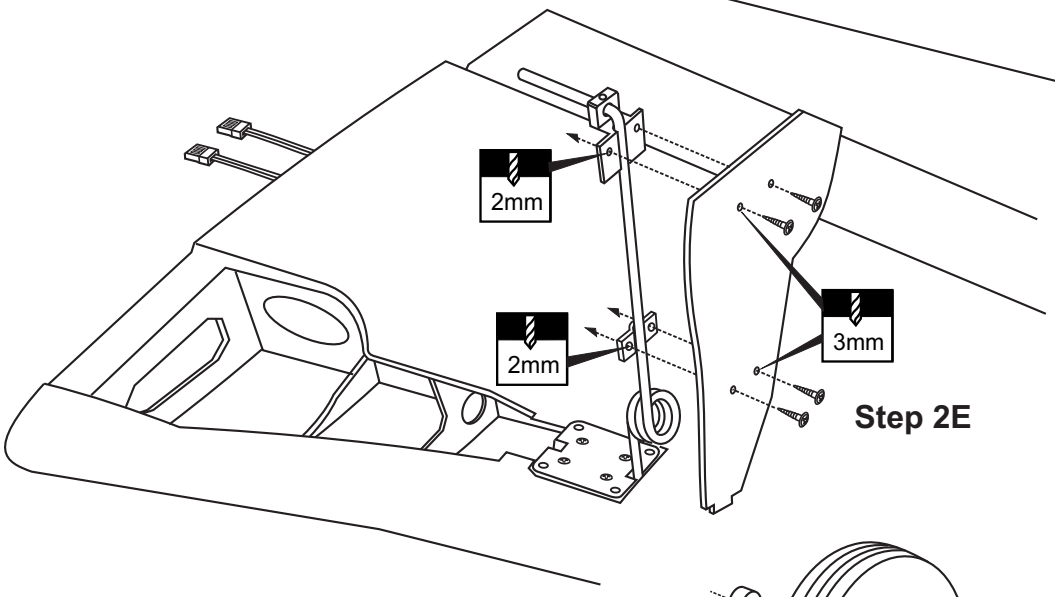
Step 2B



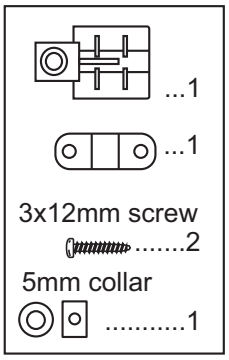
Step 2C

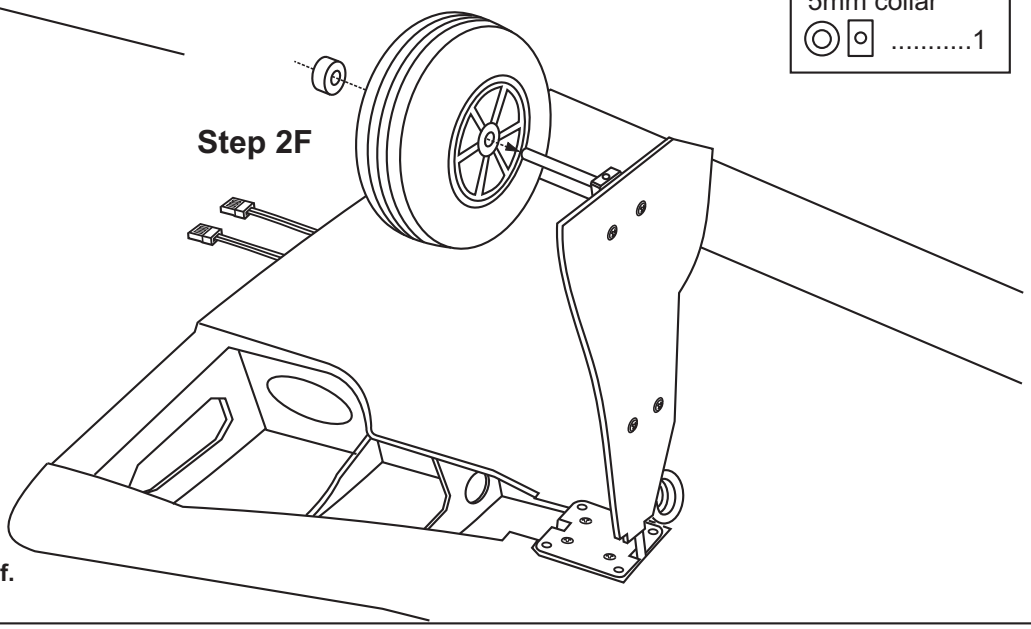


Step 2D



Step 2E



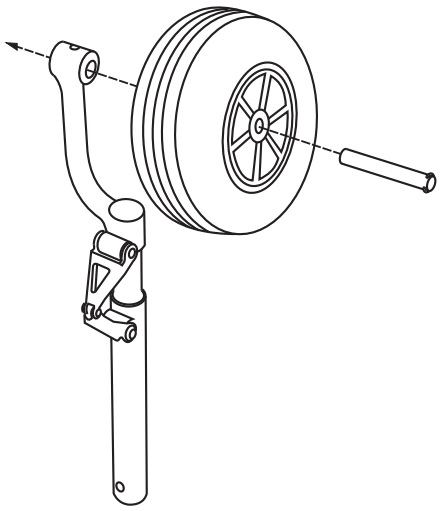


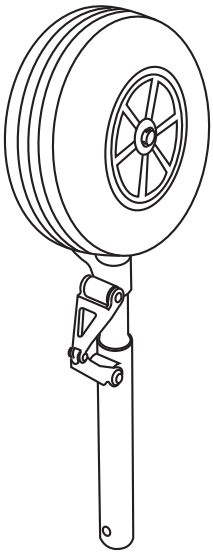
Step 2F

Do the same way with other wing half.

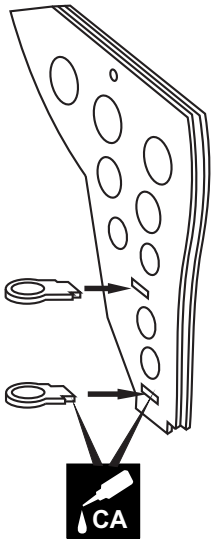
SECTION 3 - STRUTS RARE BEAR

Step 3A

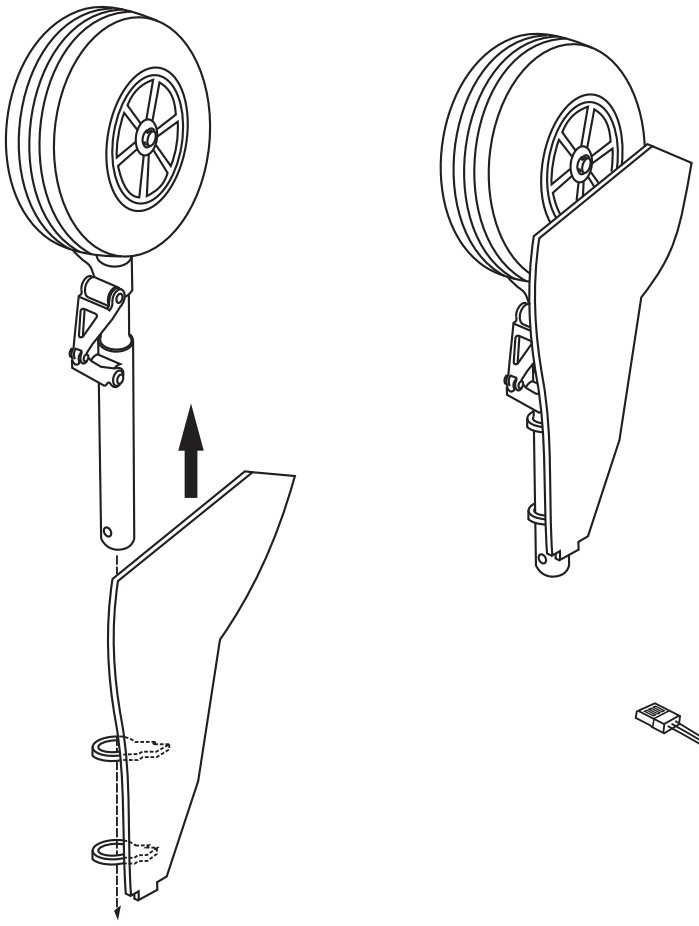




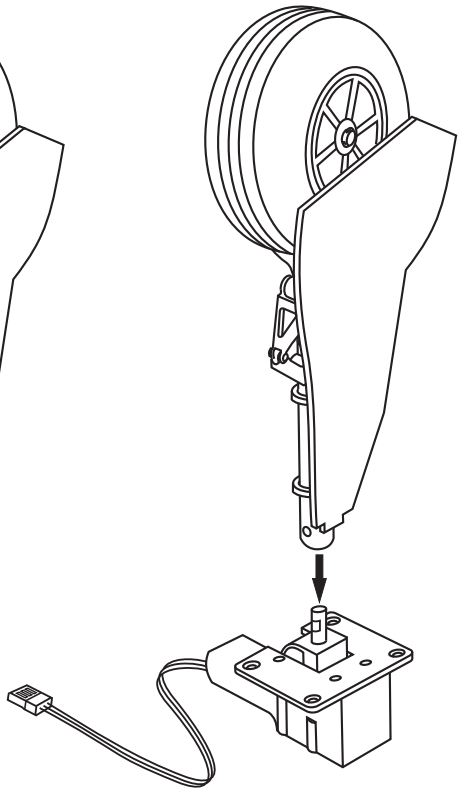
Step 3B

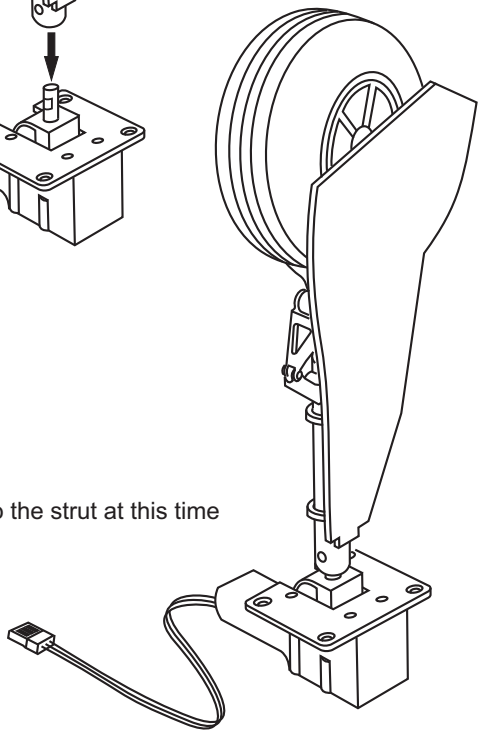


Step 3C



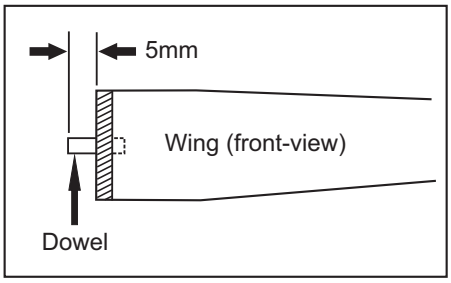
Step 3D



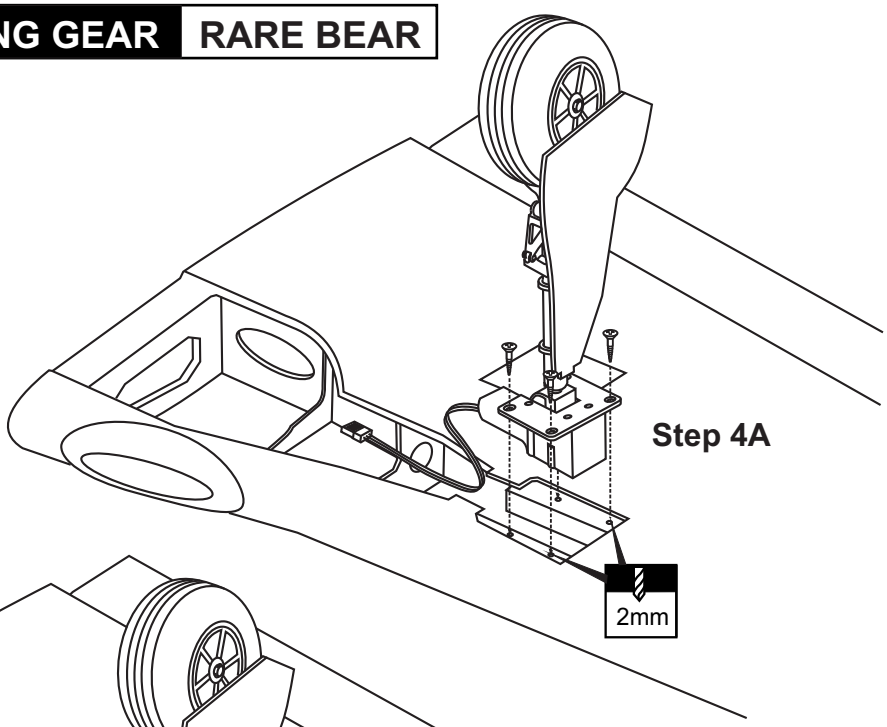


Note: Do not glue the gear door to the strut at this time

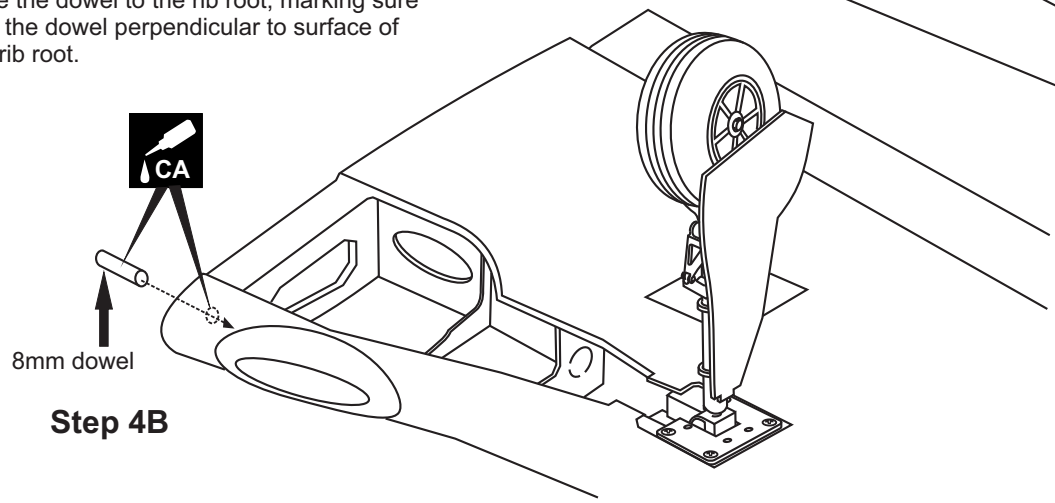
SECTION 4 - RETRACT LANDING GEAR RARE BEAR



Glue the dowel to the rib root, marking sure that the dowel perpendicular to surface of the rib root.

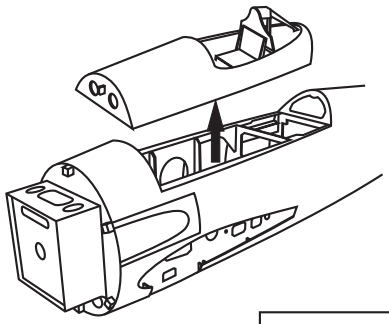


Step 4A

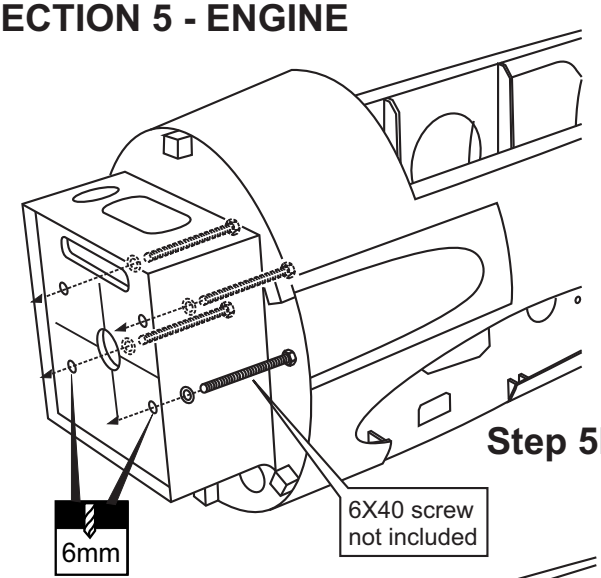


Step 4B

SECTION 5 - ENGINE



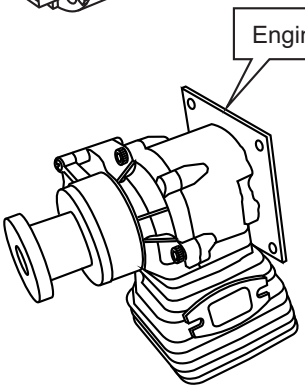
Note: Turn the plastic bolts on the left and right side of the fuselage, full the canopy hatch out of the fuselage first.

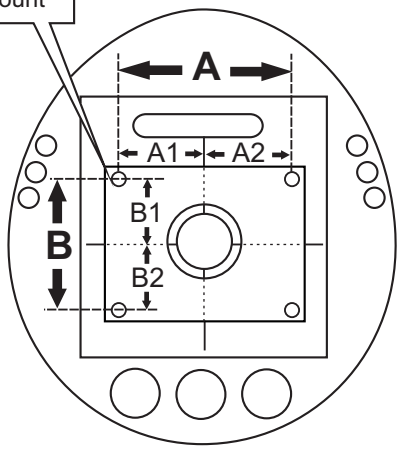


Step 5B

Step 5A

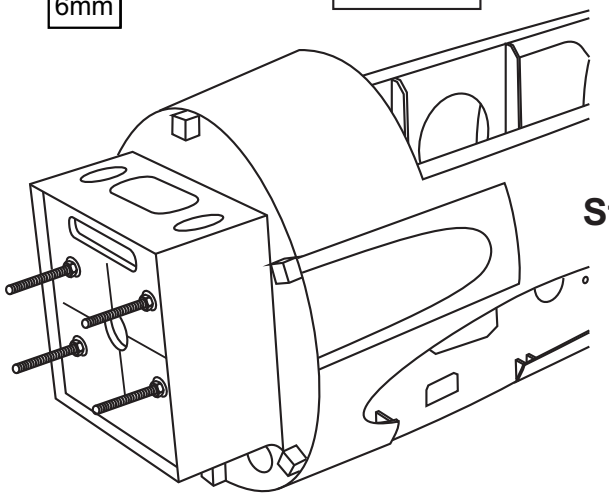
Fuselage - front view





A1=A2 B1=B2

Mark the plywood where the four holes are to be drilled.

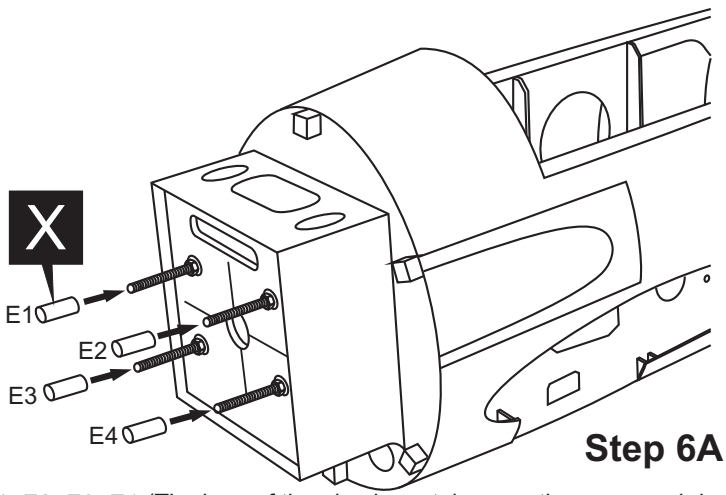


Step 5C

6x80mm screw	4
6mm nut	12
6mm washer	8

Please Note: This plane was design to use for 40cc gasoline-2 stroke engine or 40cc-4 stroke engine. Incase you want to use bigger engine, please reinforce the firewall and other connection by Epoxy

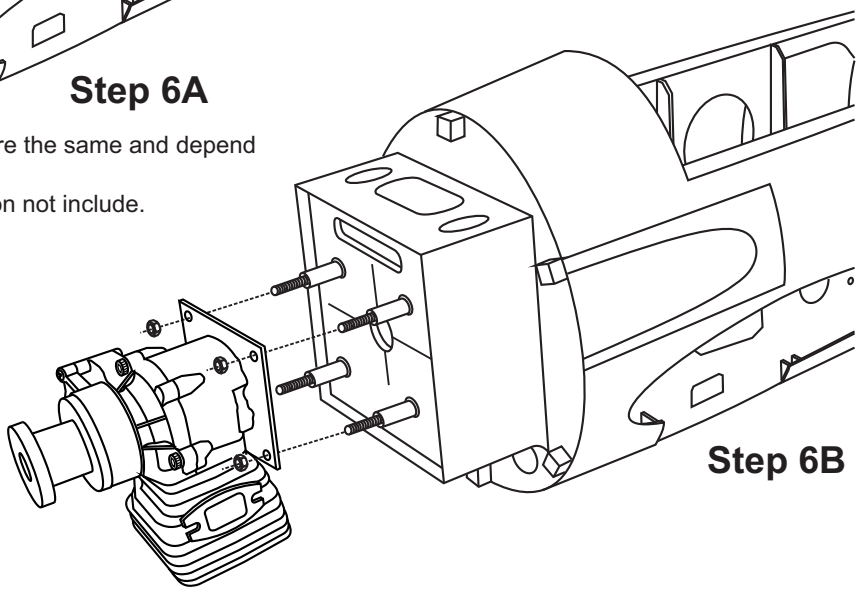
If you attach too large engine, this can destroy the structure of your model and cause an accident.



Step 6A

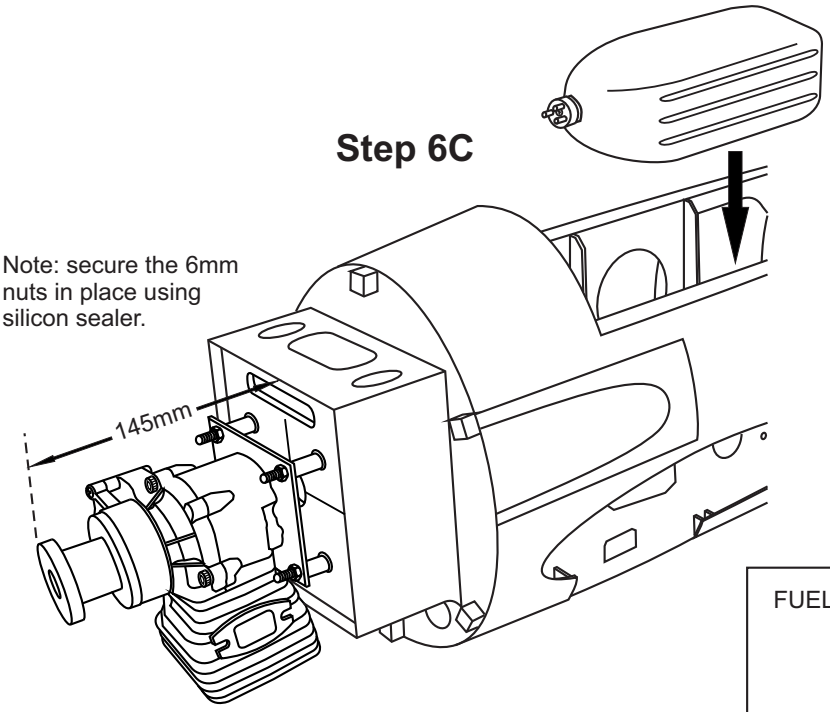
E1=E2=E3=E4 (The long of the aluminum tubes are the same and depend of your engine)

Note: The aluminum tubes for the engine installation not include.



Step 6B

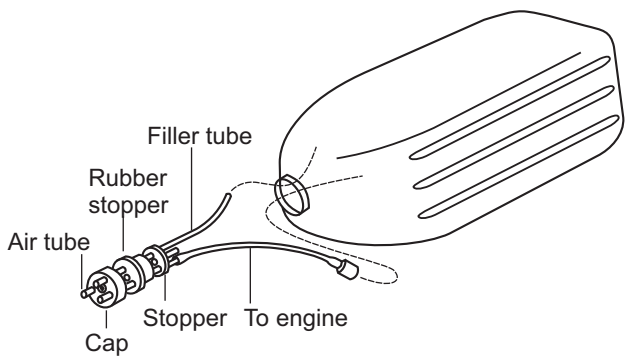
Step 6C



Note: secure the 6mm nuts in place using silicon sealer.

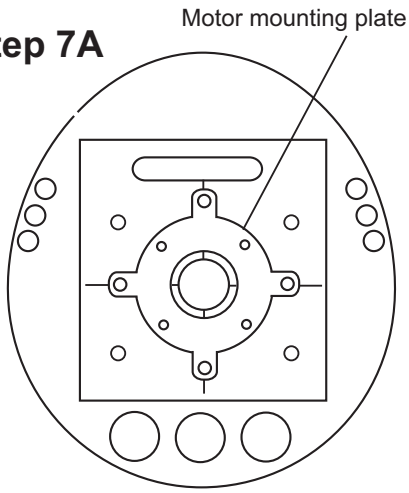
Adjuting the distance from the fire-wall to the hub of engine is **145mm**.

FUEL TANK ASSEMBLY



SECTION 7 - ELECTRIC MOTOR RARE BEAR

Step 7A



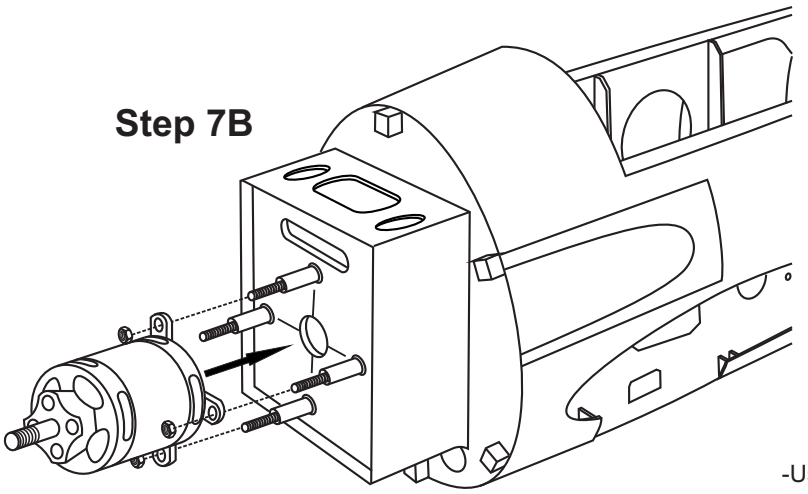
Fuselage - front view

-Using a aluminum motor mounting plate as a template, mark the plywood motor mounting plate where the four holes are to be drilled.

-Remove the aluminum motor mounting plate and drill a 7/32”(5mm) hole through the plywood at each of the four marks marked .

Note: The aluminum motor mounting included with electric motor set.

Step 7B



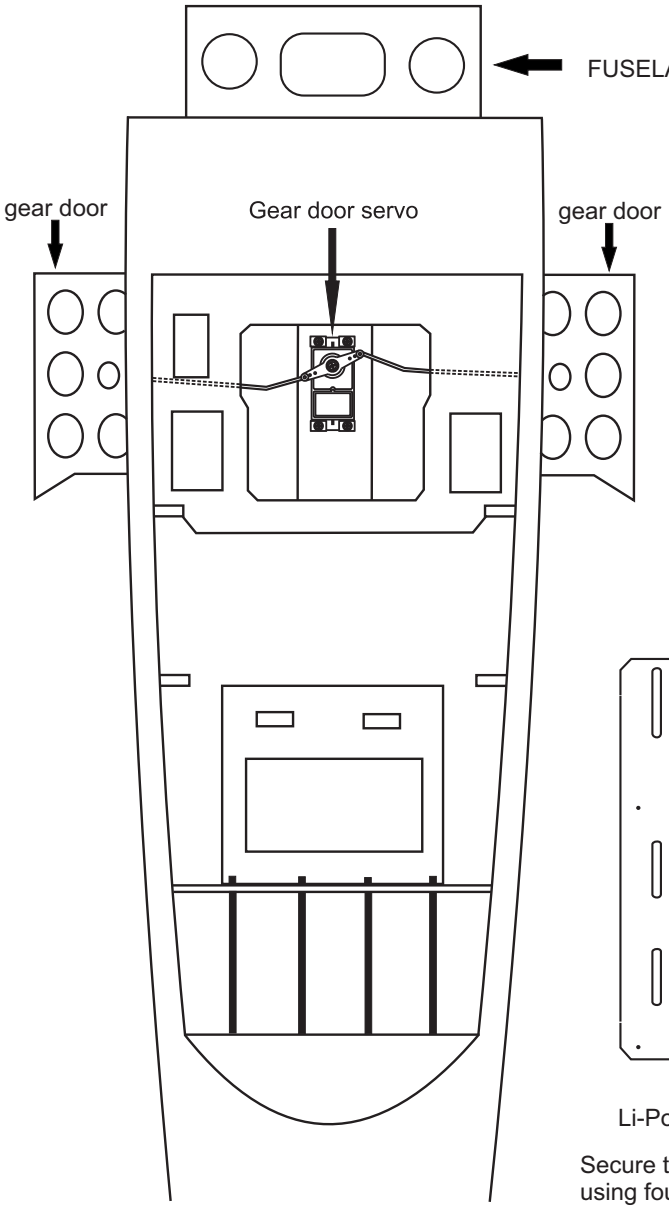
6x80mm screw	4
6mm nut	12
6mm washer	8

Adjuting the distance from the fire-wall to the hub of motor is **145mm**.

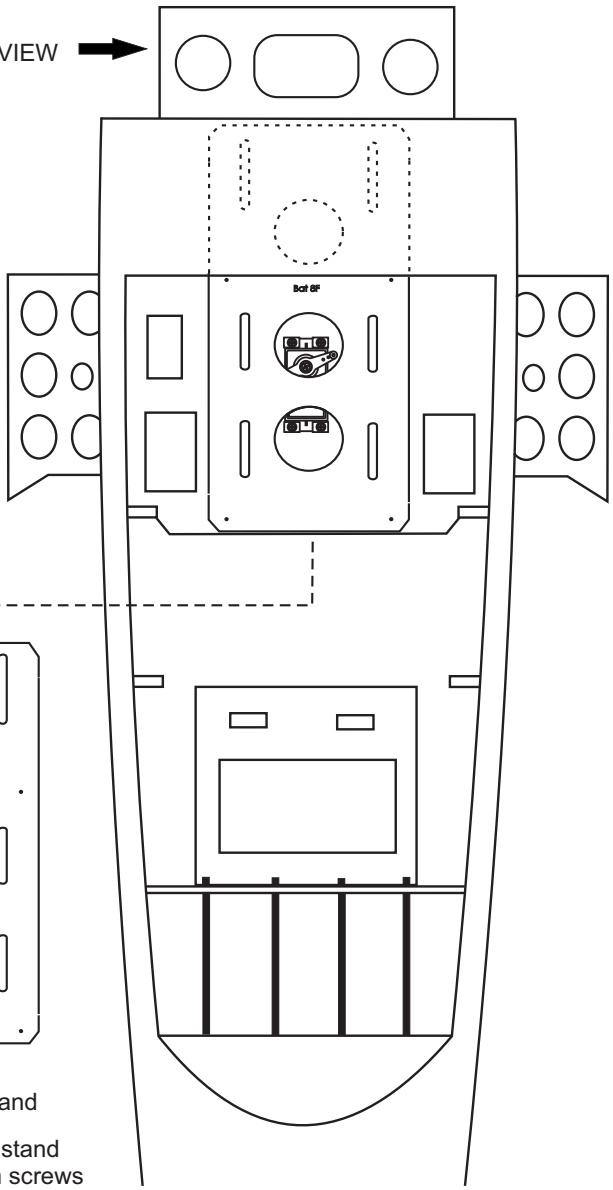
The long of the aluminum tubes are same and depend of your motor.

Note: The aluminum tubes for the motor installation not include.

Step 7C: gear door servo



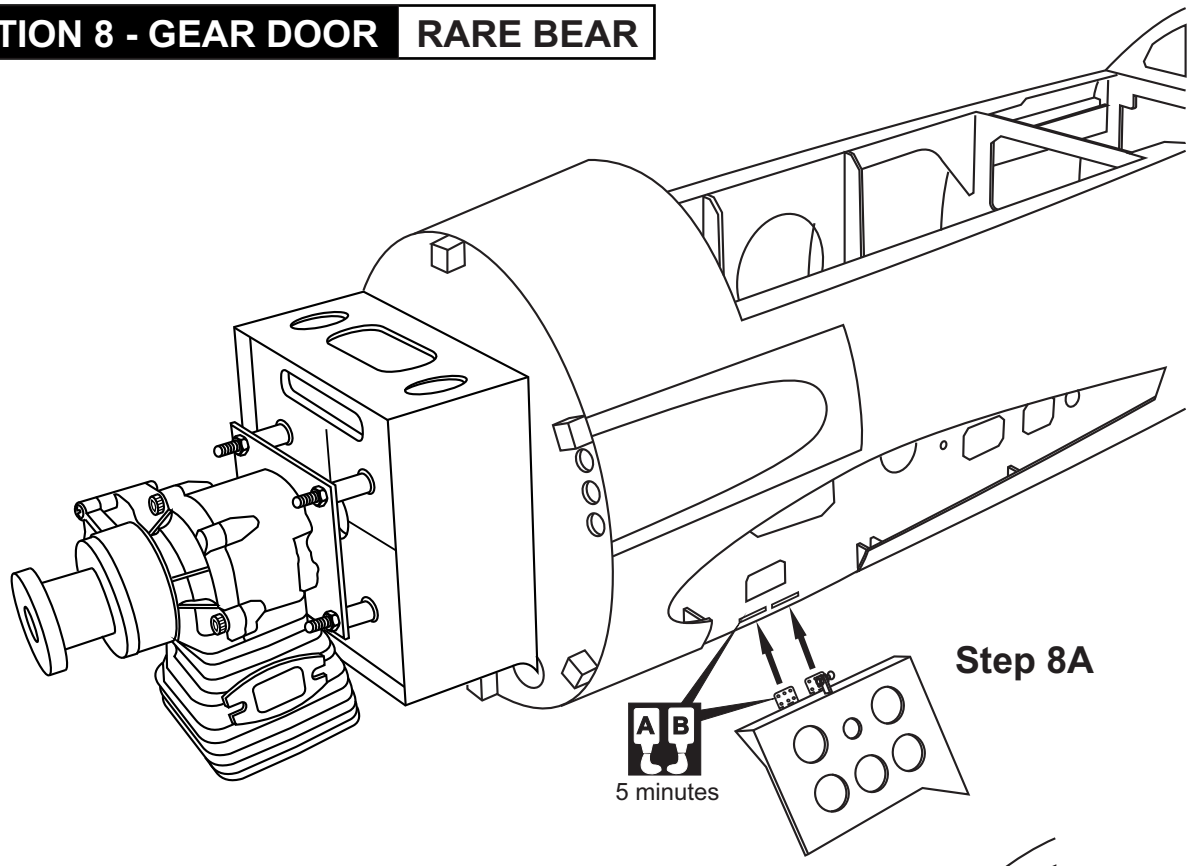
Step 7D: Battery stand



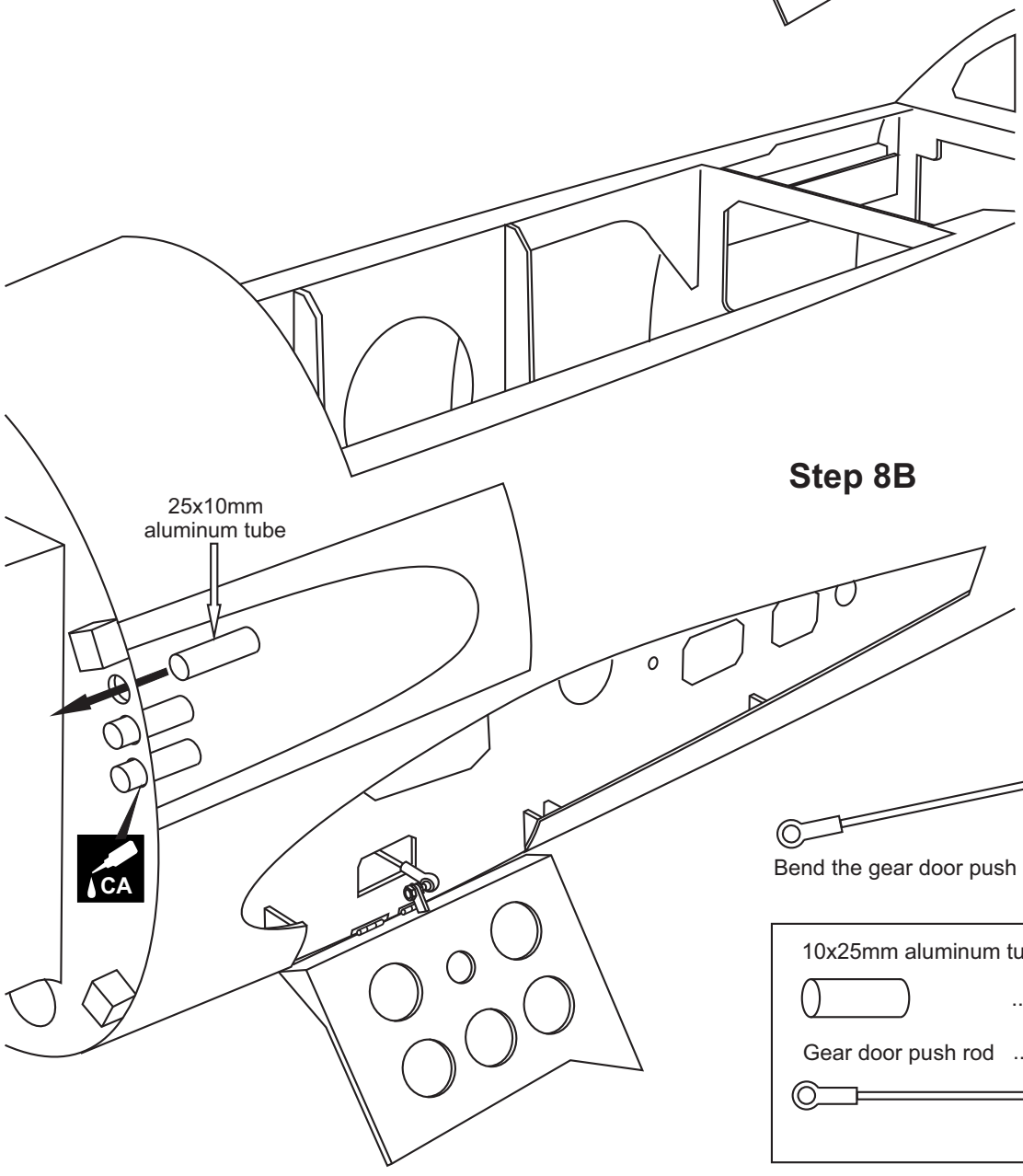
Li-Po battery stand

Secure the battery stand using four 3x10mm screws

SECTION 8 - GEAR DOOR RARE BEAR



Step 8A



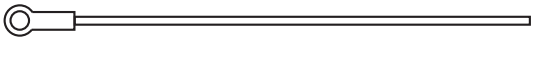
Step 8B

Bend the gear door push rod for smooth work.

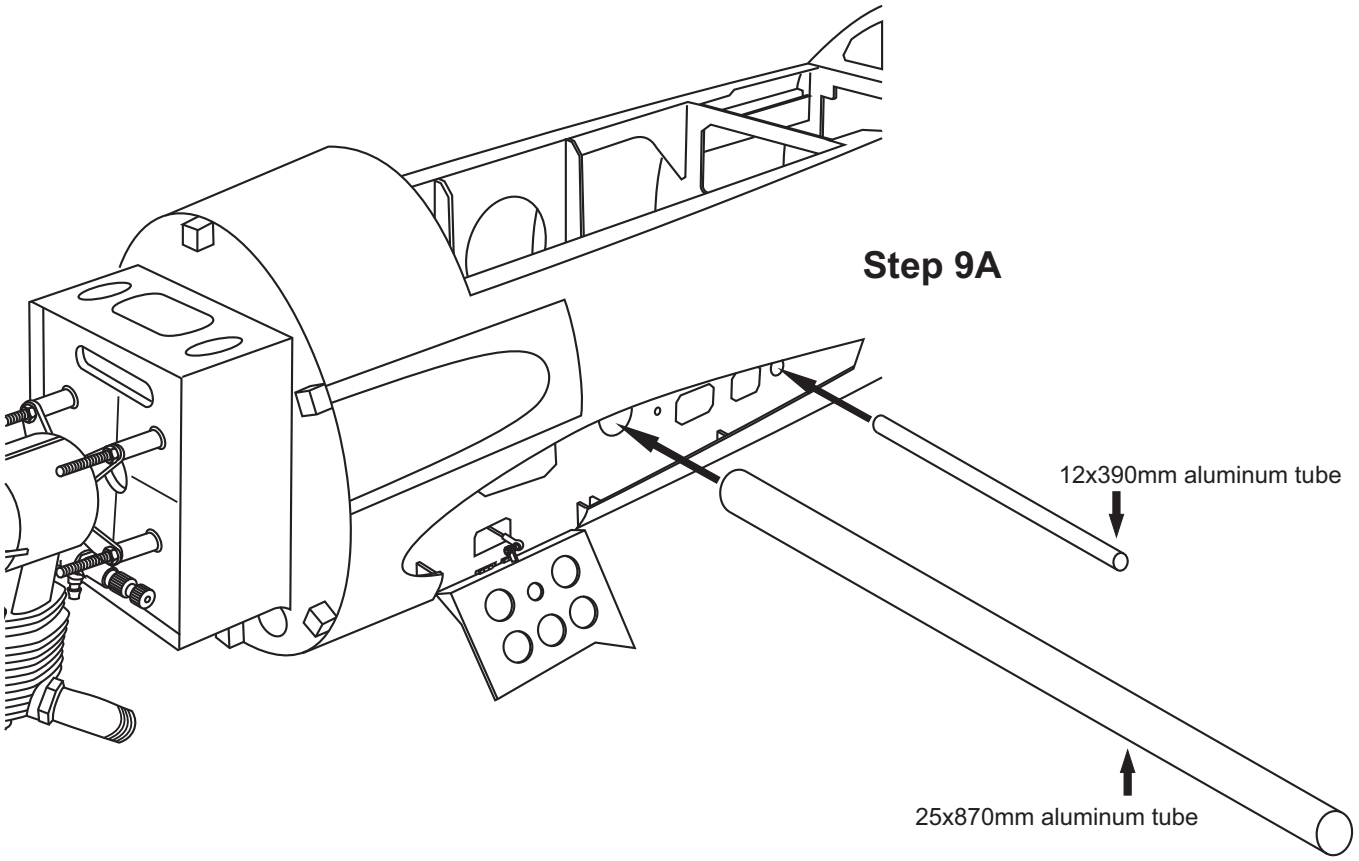
10x25mm aluminum tube

.....3 (for each side)

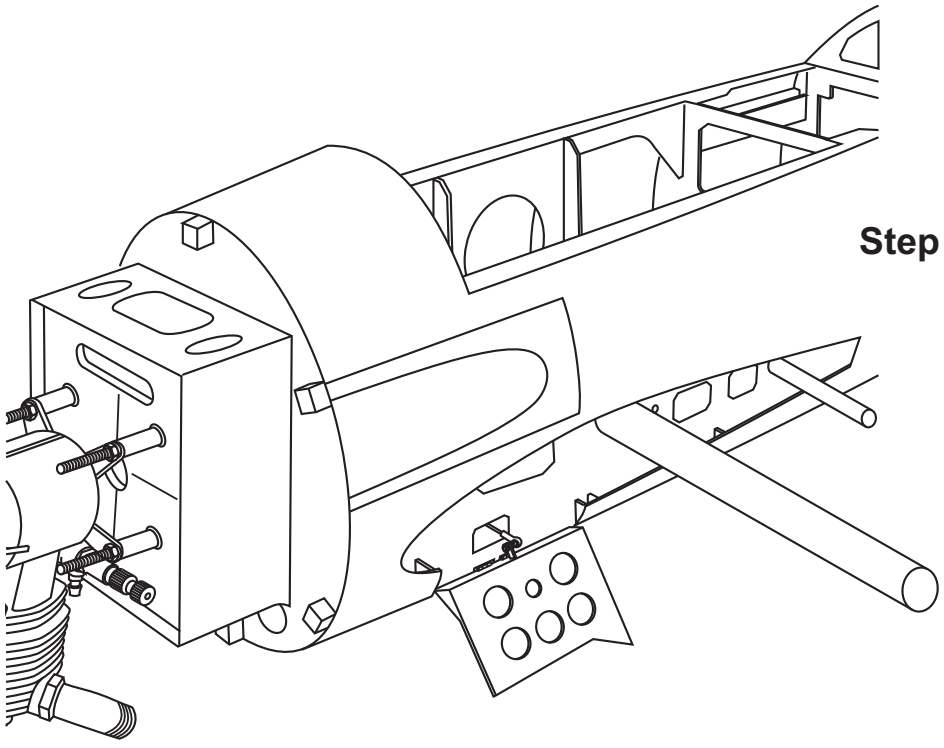
Gear door push rod .....1 (for each side)



Do the same way with other side



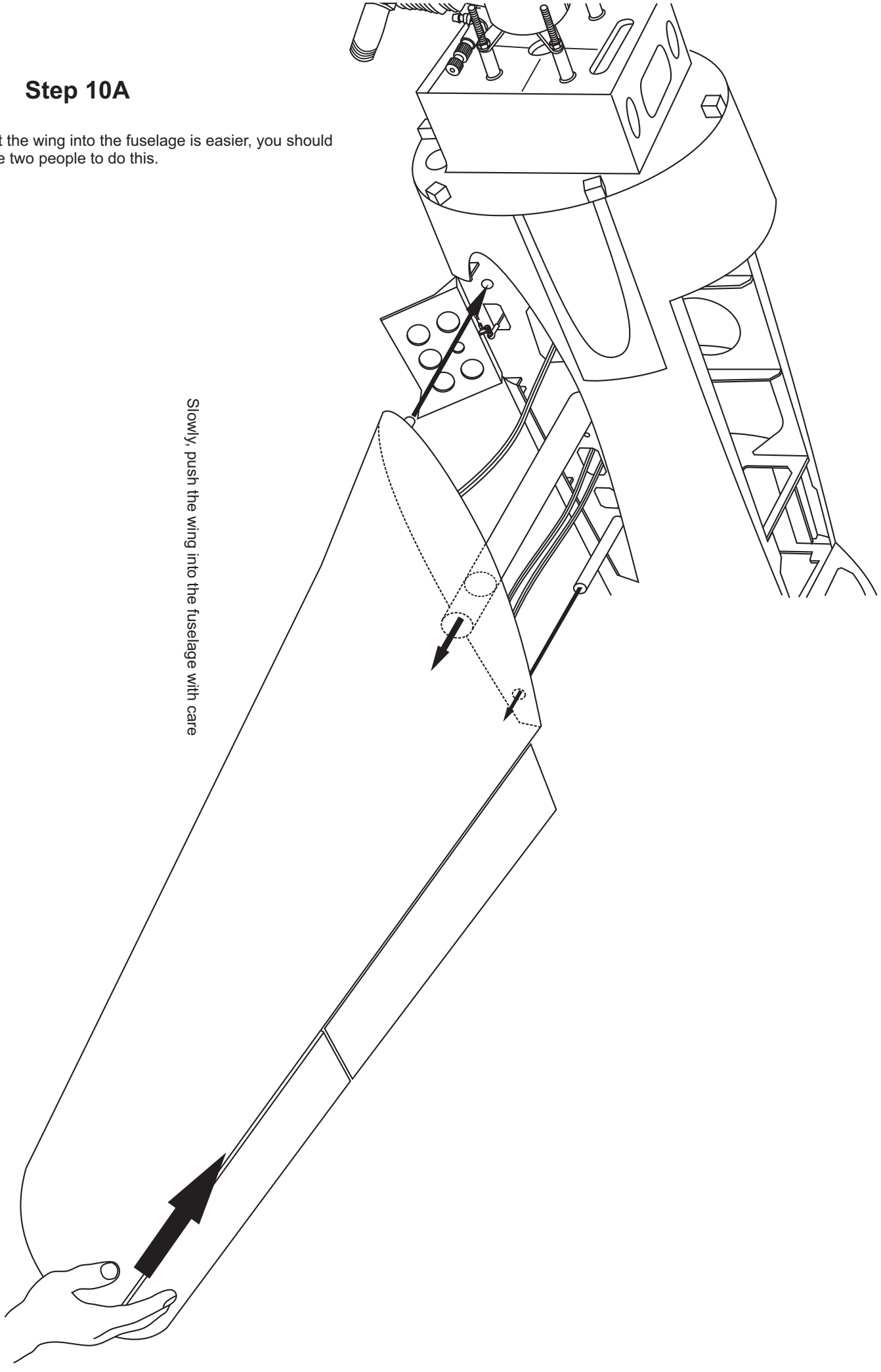
Step 9A



Step 9B

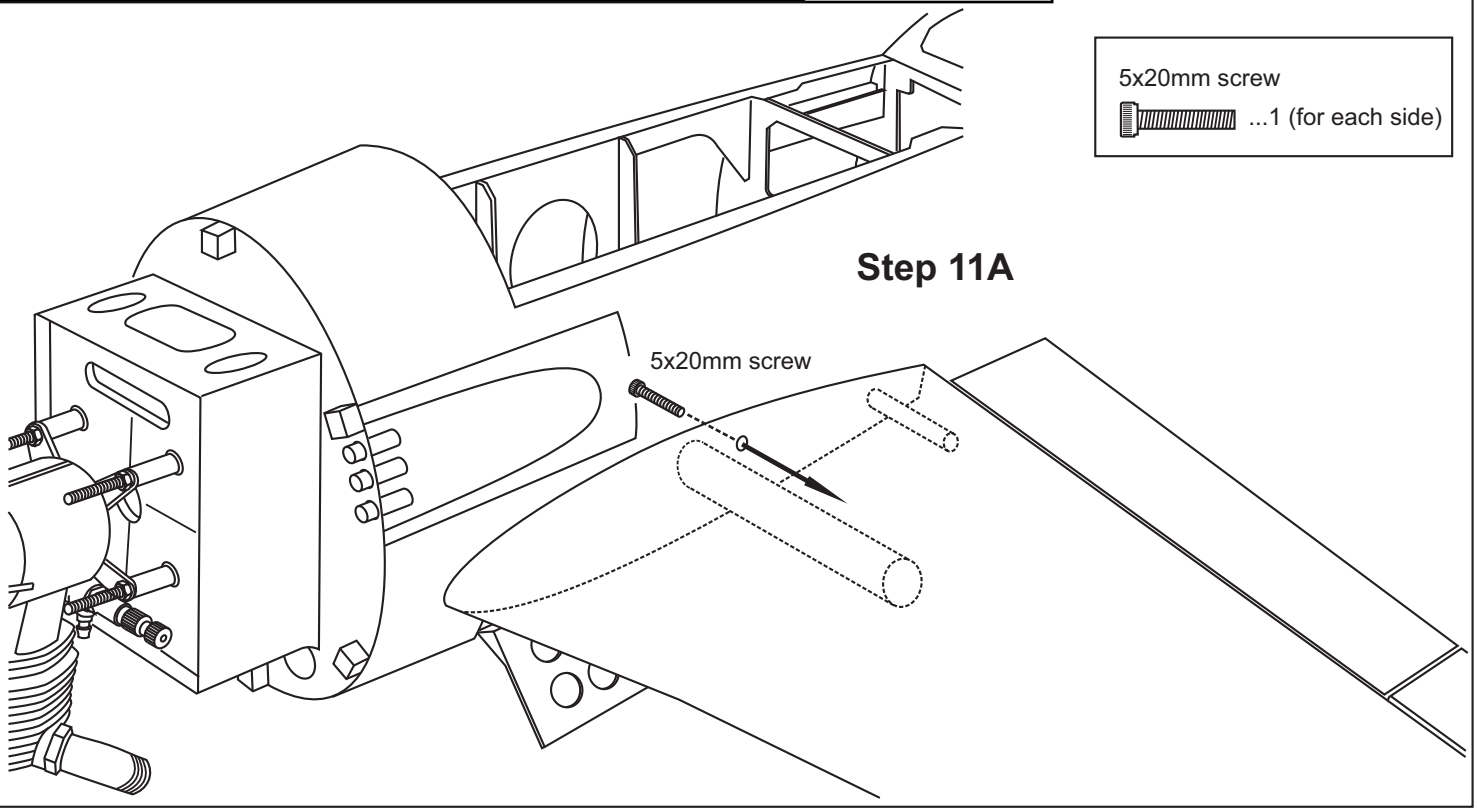
Step 10A

Note: To fit the wing into the fuselage is easier, you should have two people to do this.

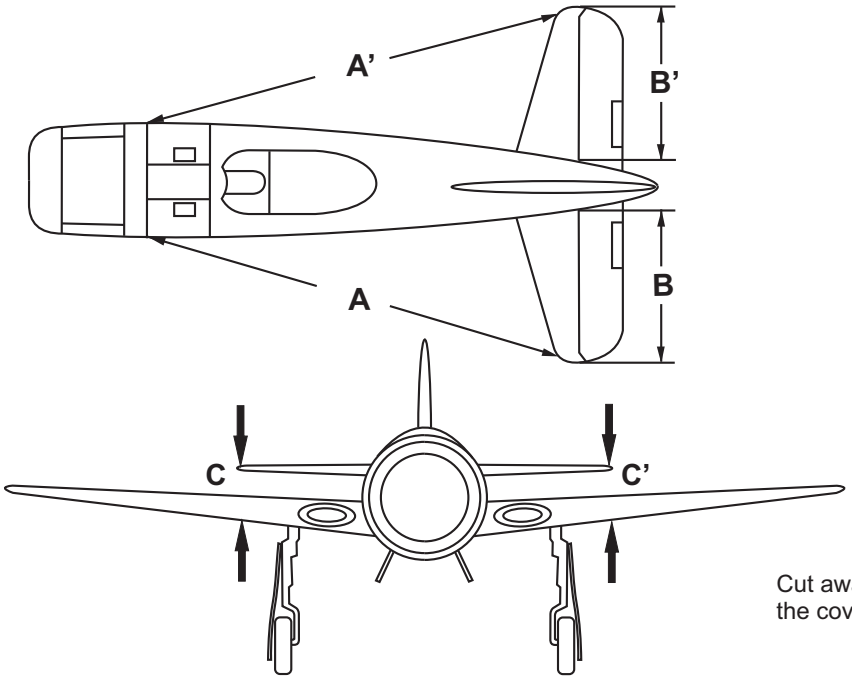


SECTION 11 - JOINING THE WING continued RARE BEAR

5x20mm screw ...1 (for each side)

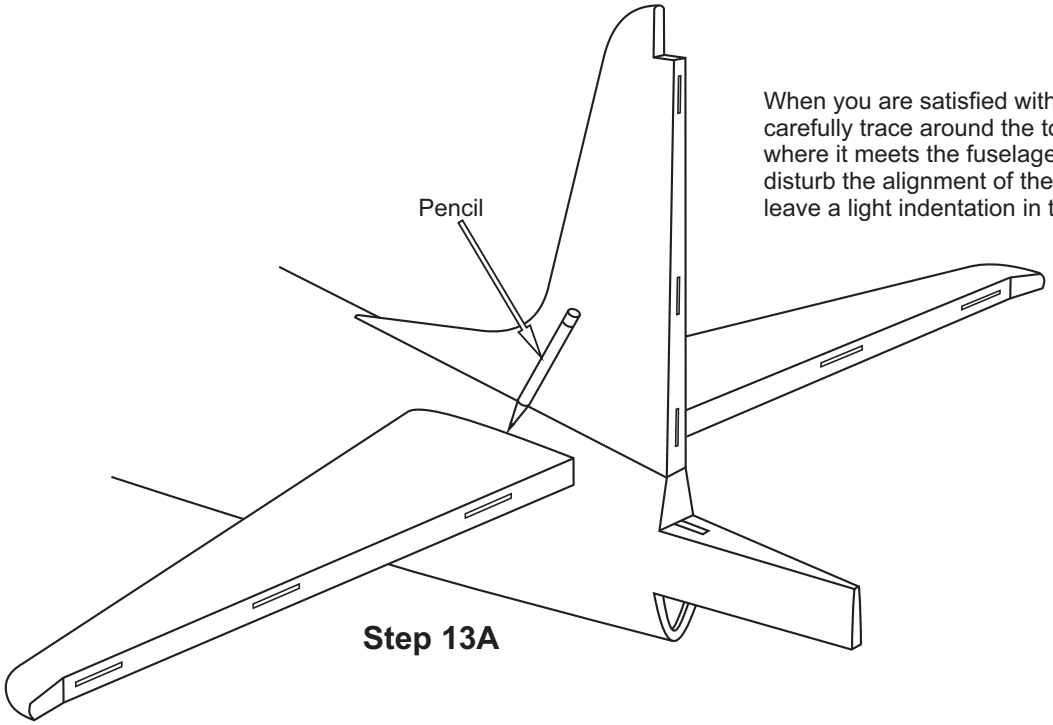


SECTION 12 - HORIZONTAL STABILIZER RARE BEAR



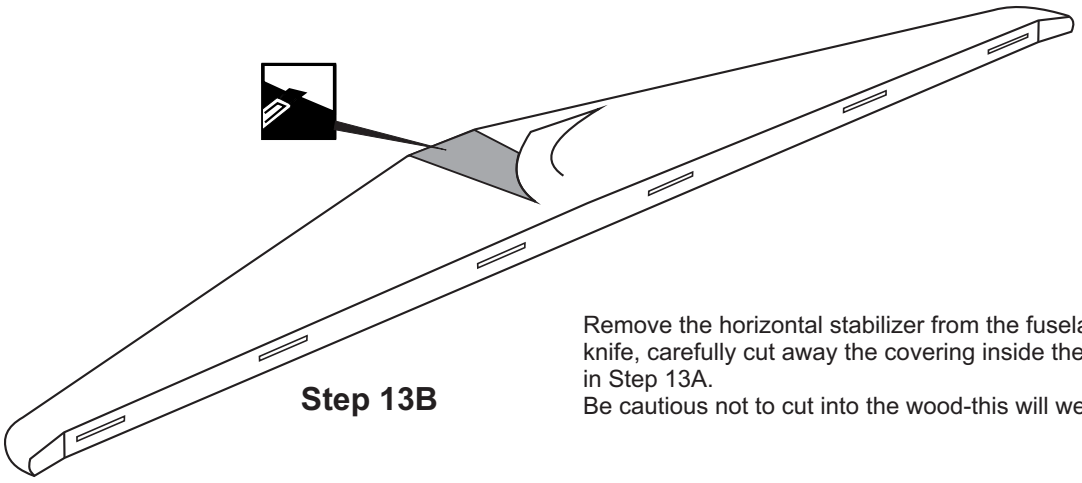
Trial fit the horizontal stabilizer in place on the fuselage. Check the alignment of the horizontal stabilizer. The distance must be equal on both sides **(A=A' and B=B' and C=C')**. If not, adjust the stabilizer until the measurements are the same.

*** WARNING: When removing any covering from the airframe, please ensure that you secure the cut edge with CA or similar cement. This will ensure the covering remain tight.**



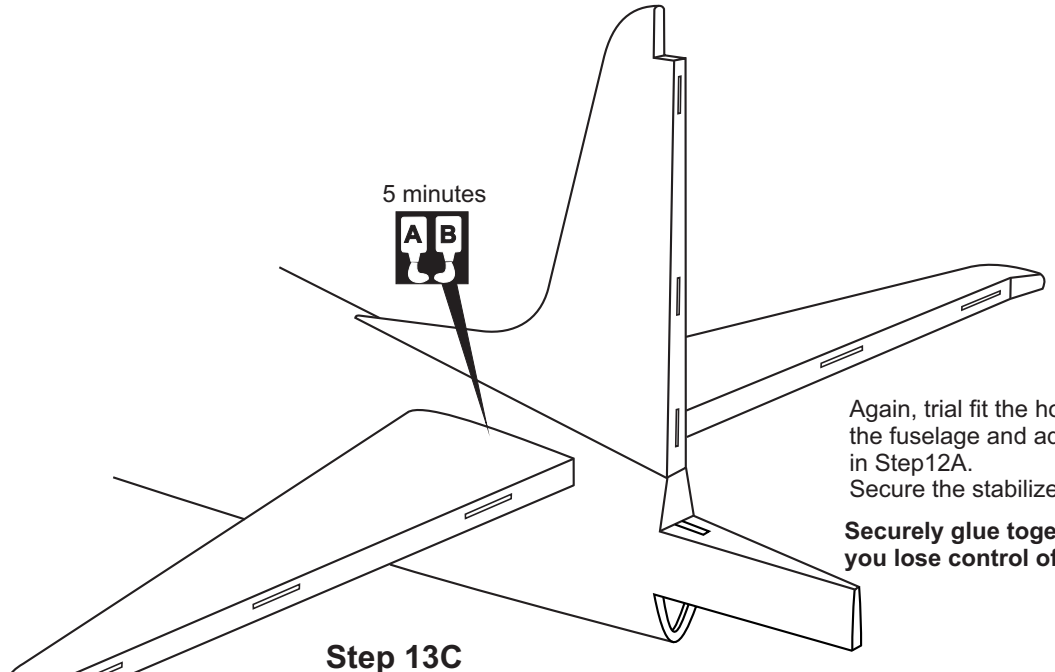
When you are satisfied with the alignment , use a pencil to carefully trace around the top and bottom of the stabilizer where it meets the fuselage. Note, it is important not to disturb the alignment of the stabilizer. The pencil should leave a light indentation in the covering.

Step 13A



Remove the horizontal stabilizer from the fuselage. Using a sharp hobby knife, carefully cut away the covering inside the lines which were marked in Step 13A.
Be cautious not to cut into the wood-this will weaken the structure.

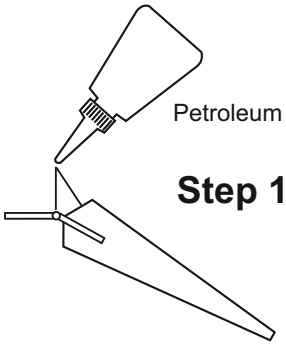
Step 13B



Again, trial fit the horizontal stabilizer in place on the fuselage and adjust the alignment as described in Step12A.
Secure the stabilizer in place using the 5 minutes Epoxy.

Securely glue together. If coming off during flight, you lose control of your air plane.

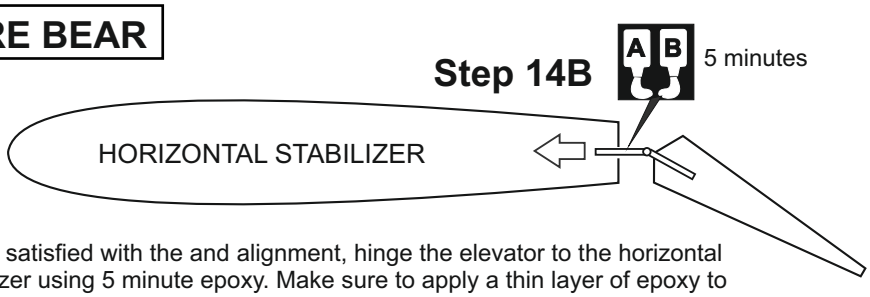
Step 13C



Step 14A

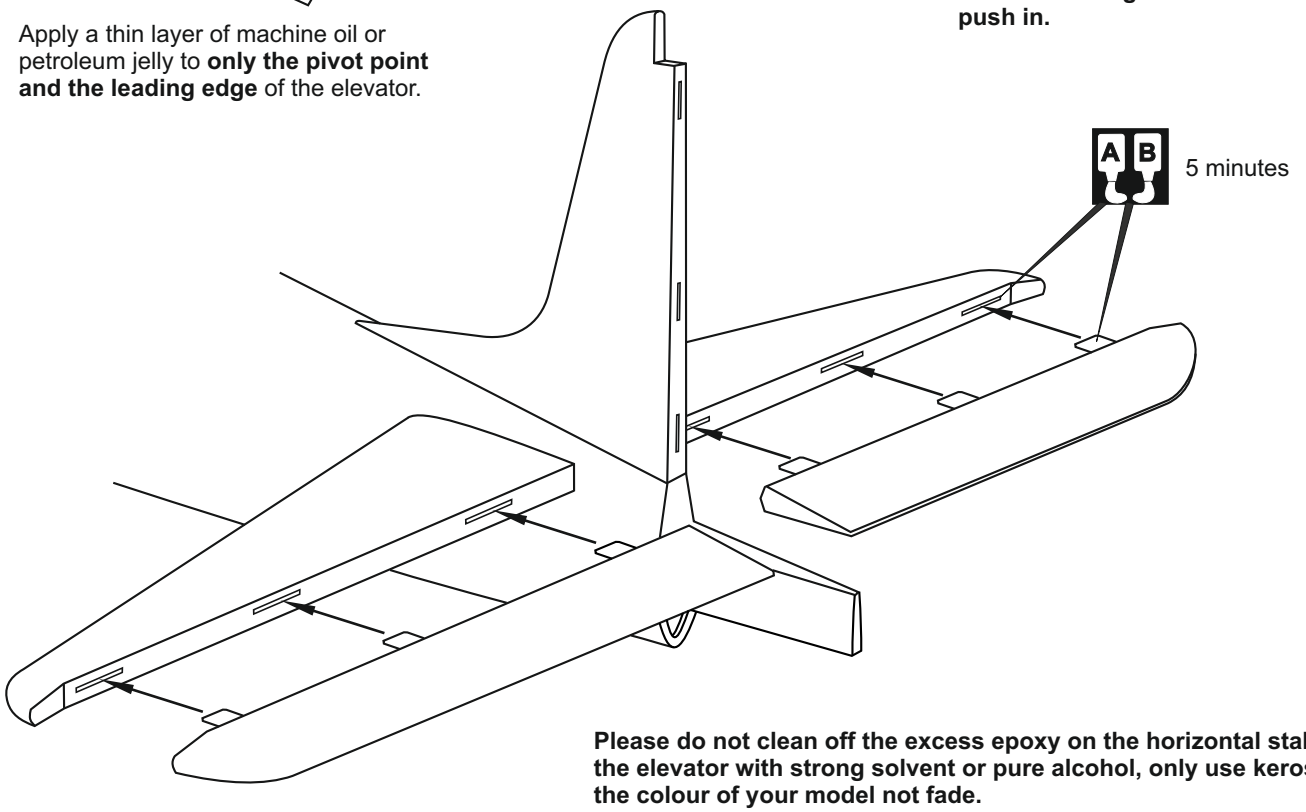
Apply a thin layer of machine oil or petroleum jelly to **only the pivot point and the leading edge** of the elevator.

Step 14B



When satisfied with the and alignment, hinge the elevator 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 inside the hinge slots. Repeat the previous procedures to hinge the second elevator to the other side of the horizontal stabilizer.

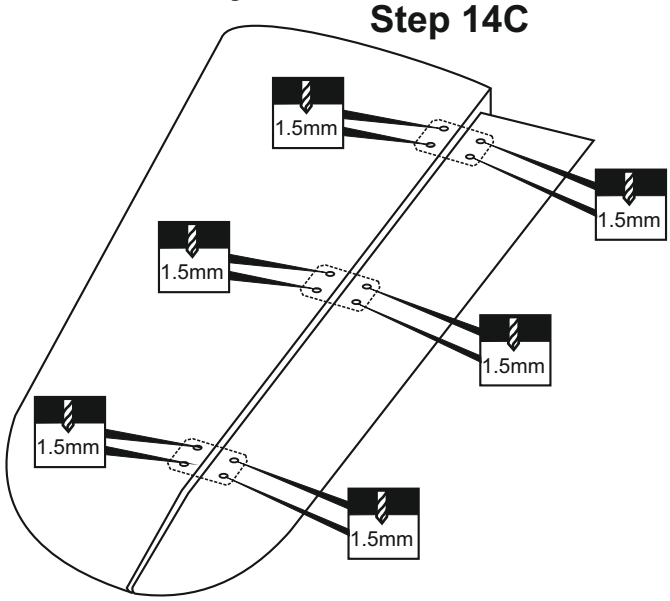
NOTE: You may need to open up the slots so that the hinges are not too difficult to push in.



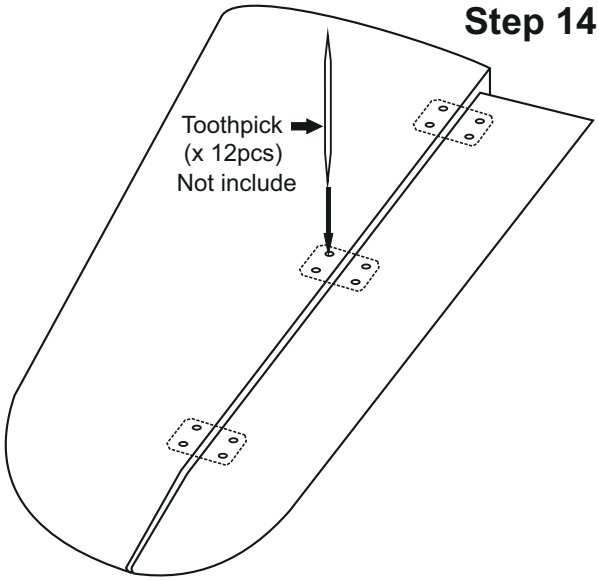
Please do not clean off the excess epoxy on the horizontal stabilizer and the elevator with strong solvent or pure alcohol, only use kerosene to keep the colour of your model not fade.

Elevator Safety.

Step 14C



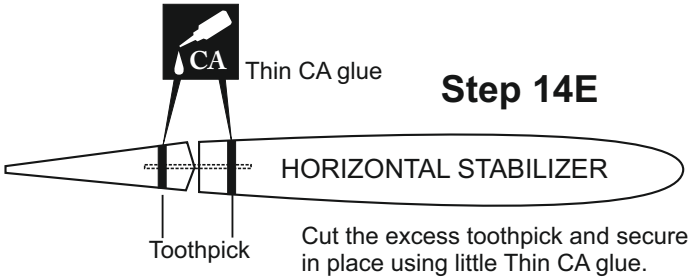
Step 14D



VERY IMPORTANT

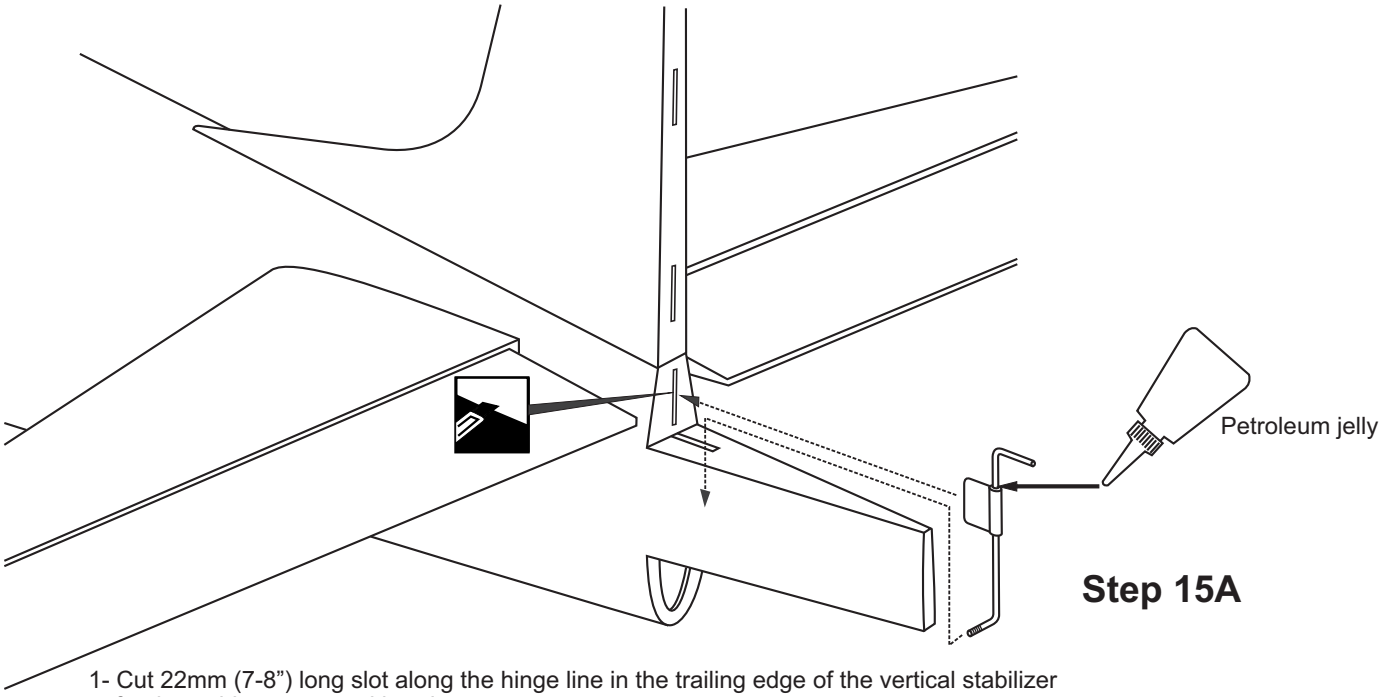
If you not make this step, the elevator may be comming off when your airplane flying with high speed. You will lose control of your airplane.

Step 14E



Cut the excess toothpick and secure it in place using little Thin CA glue.

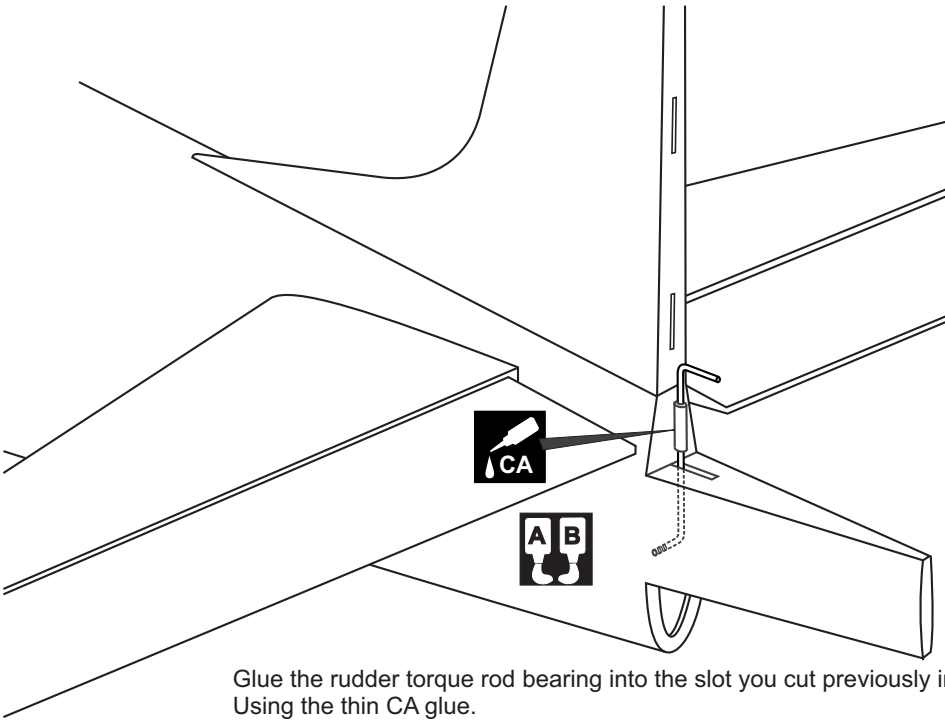
SECTION 15 - RUDDER TORQUE ROD BEARING RARE BEAR



Step 15A

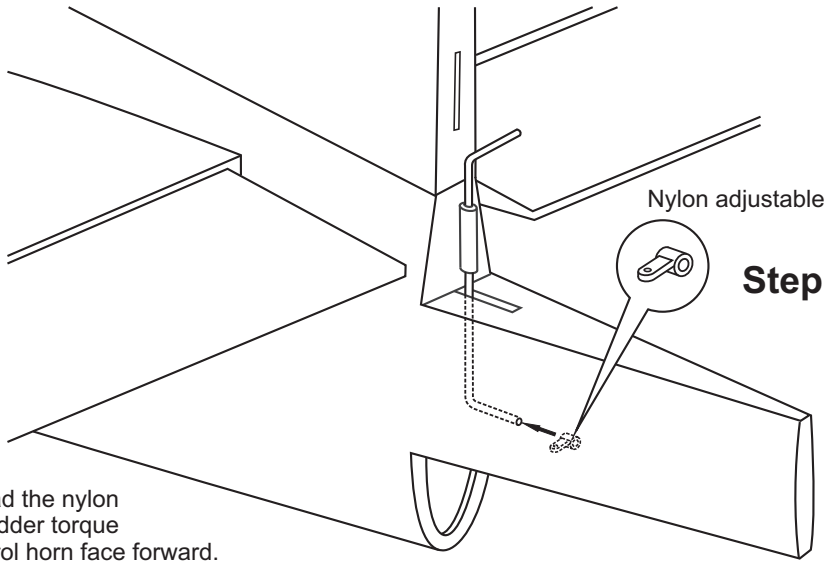
1- Cut 22mm (7-8”) long slot along the hinge line in the trailing edge of the vertical stabilizer for the rudder torque rod bearing.

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



Step 15B

Glue the rudder torque rod bearing into the slot you cut previously in the vertical stabilizer Using the thin CA glue.



Step 15C

Turn the rudder torque rod bearing, Thread the nylon adjustable control horn onto the end of rudder torque rod, making sure that the adjustable control horn face forward.

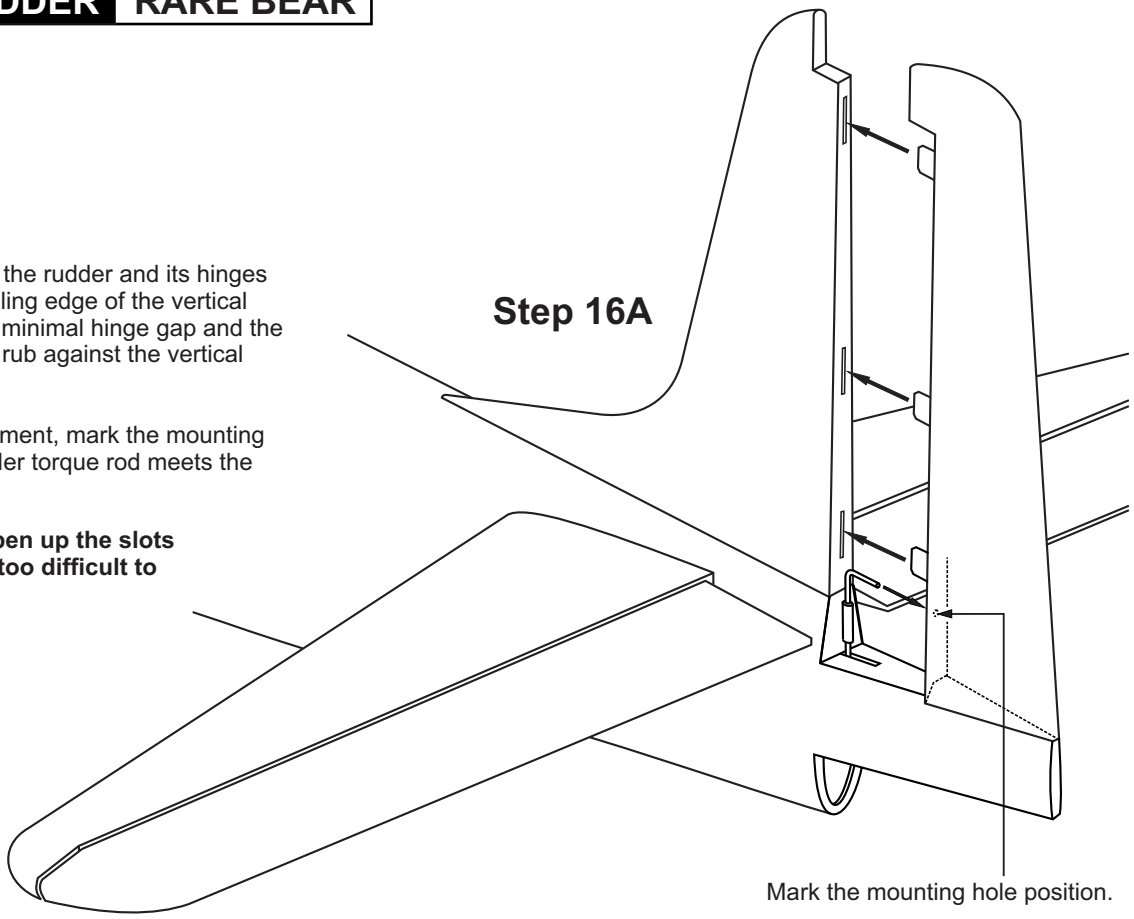
SECTION 16 - RUDDER RARE BEAR

Step 16A

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.

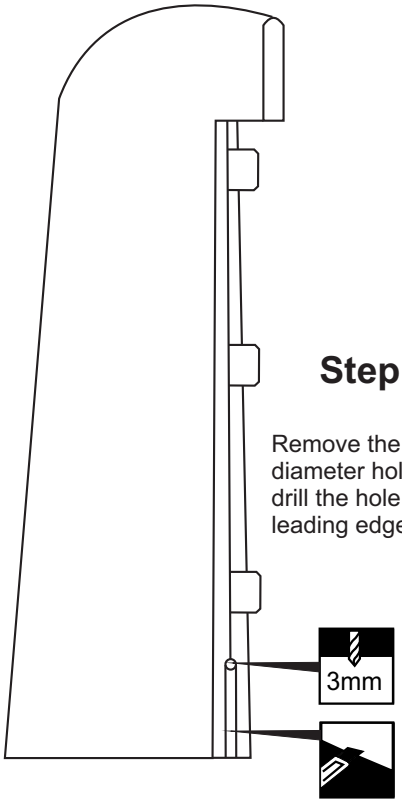
NOTE: You may need to open up the slots so that the hinges are not too difficult to push in.



Mark the mounting hole position.

Step 16B

Remove the rudderand drill 1/8” (3mm) diameter hole, making sure that you drill the hole perpendicular to the leading edge of the rudder.



Cut the rudder torque rod mounting slot.

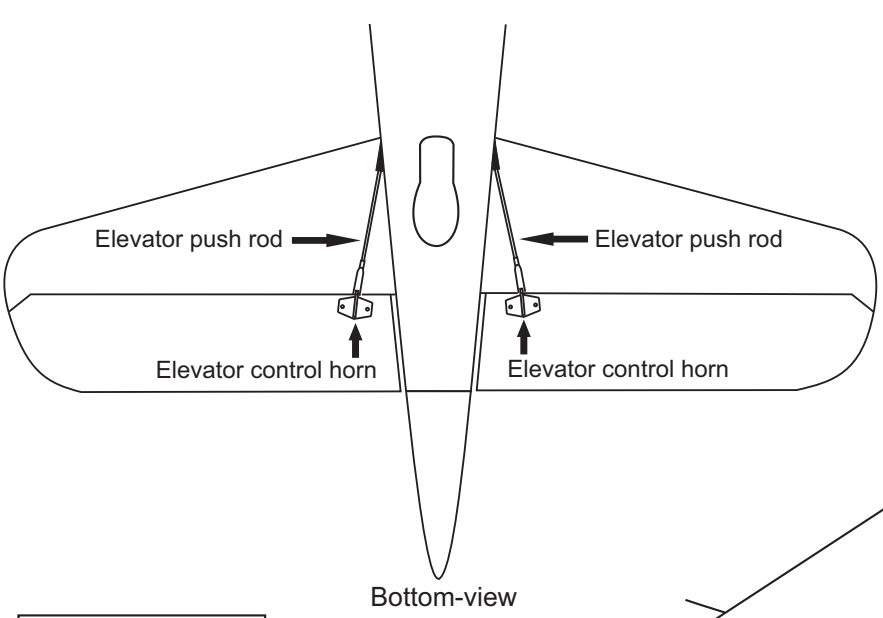
Step 16C

Again, push the rudder and its hinges into the hinge slots, secure it place using 5 minutes Epoxy.

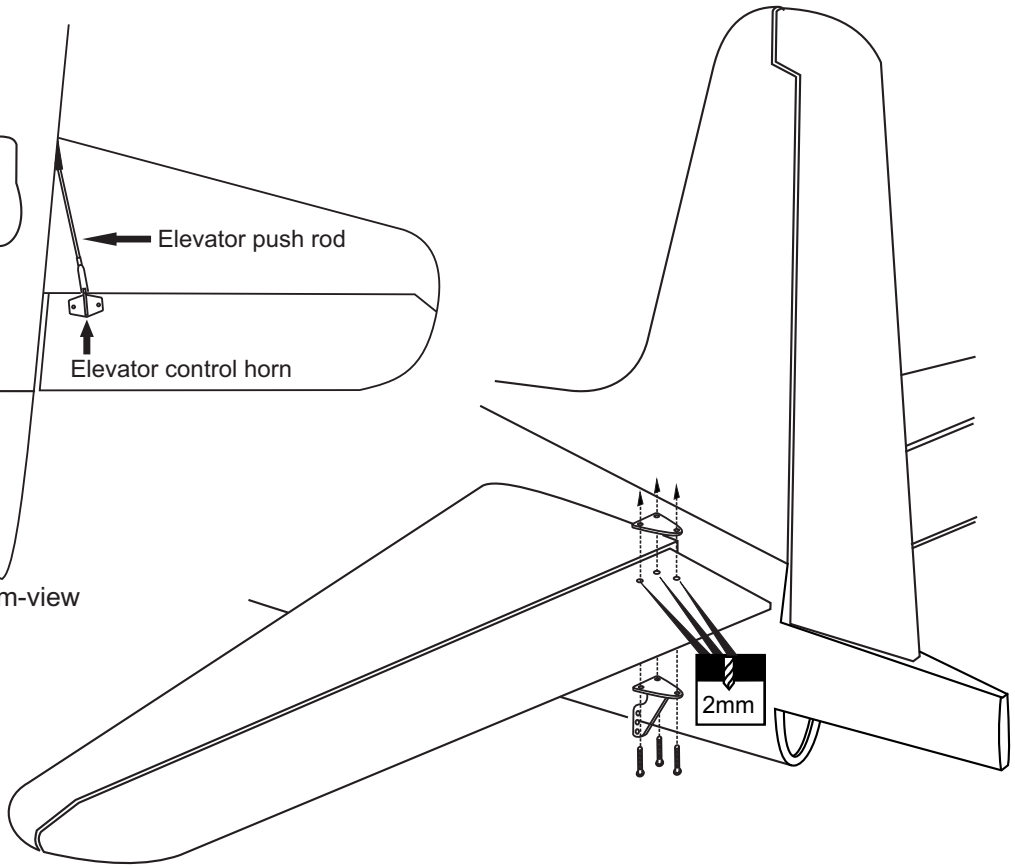
5 min.

Rudder torque rod mounting slot

SECTION 17 - ELEVATOR CONTROL HORN RARE BEAR



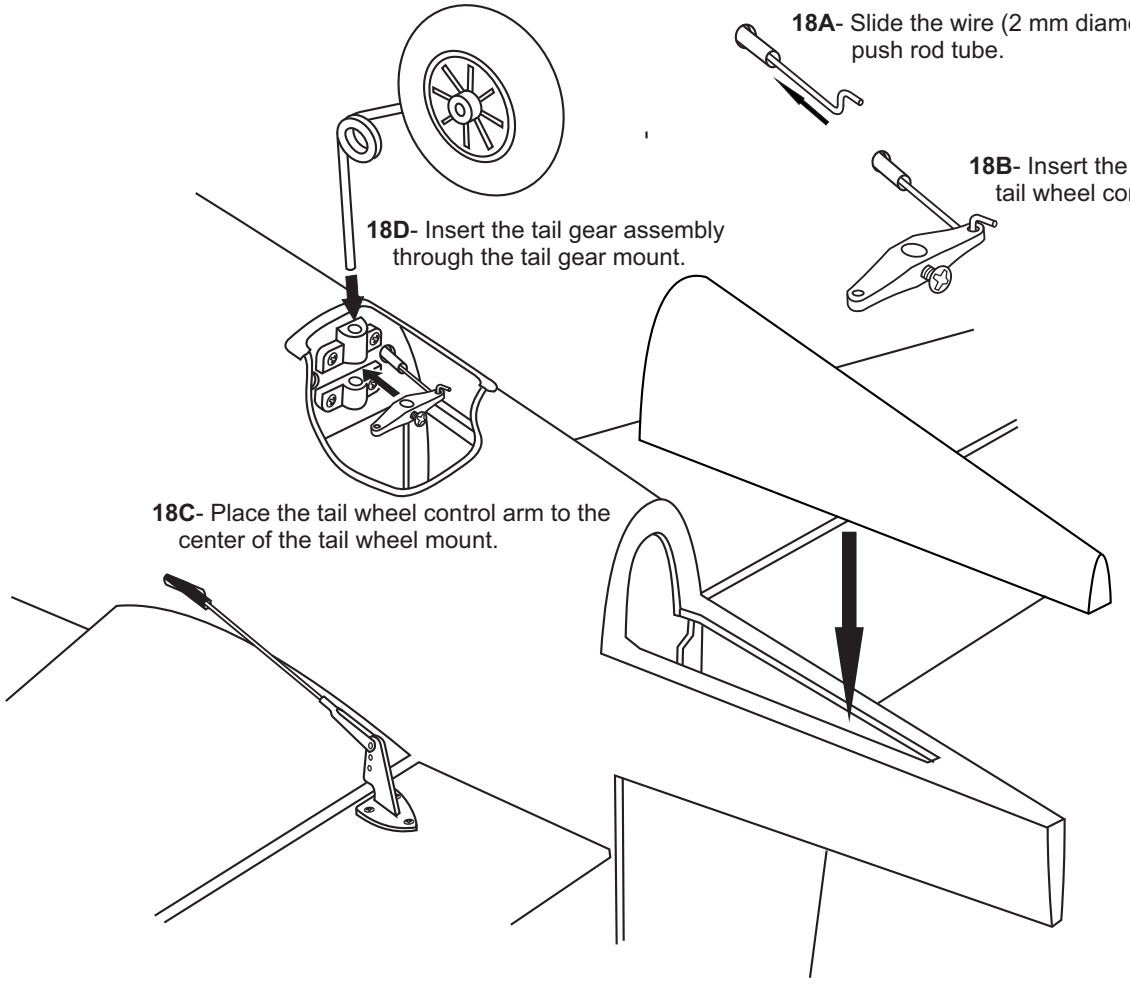
Bottom-view



Plastic control horn 2

2x20mm screw 6

SECTION 18 - TAIL WHEEL RARE BEAR



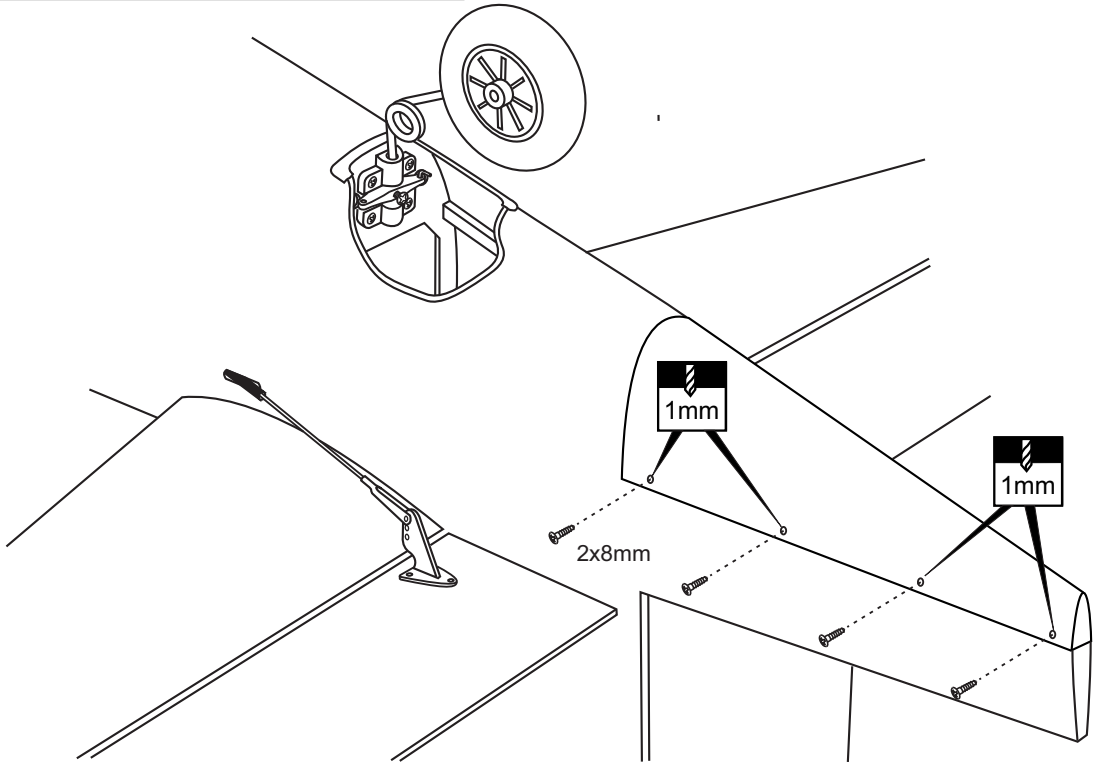
18A- Slide the wire (2 mm diameter), straight end first, into the push rod tube.

18B- Insert the Z-bend into the hole on the tail wheel control arm.

18D- Insert the tail gear assembly through the tail gear mount.

18C- Place the tail wheel control arm to the center of the tail wheel mount.

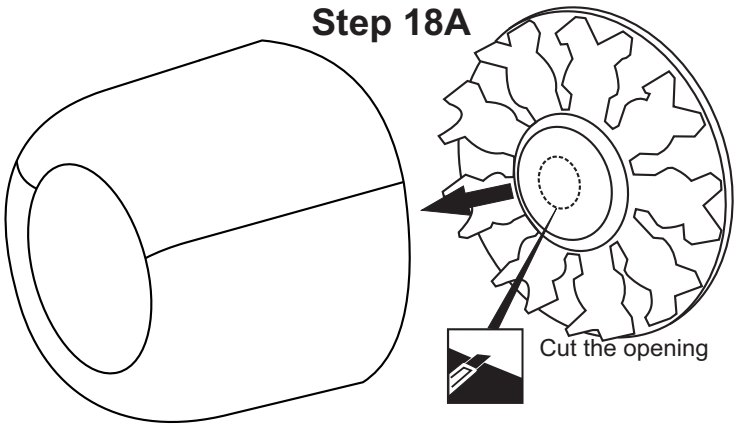
SECTION 19 - TAIL COVER RARE BEAR



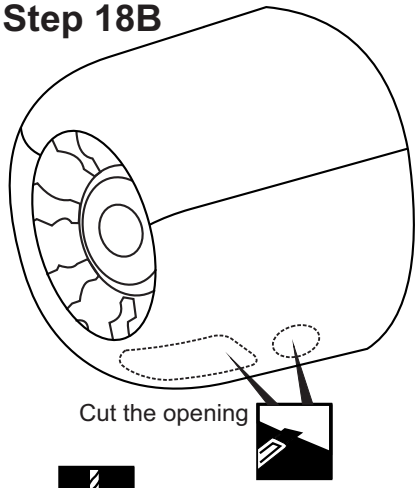
2x6mm screw 8

SECTION 20 - COWLING RARE BEAR

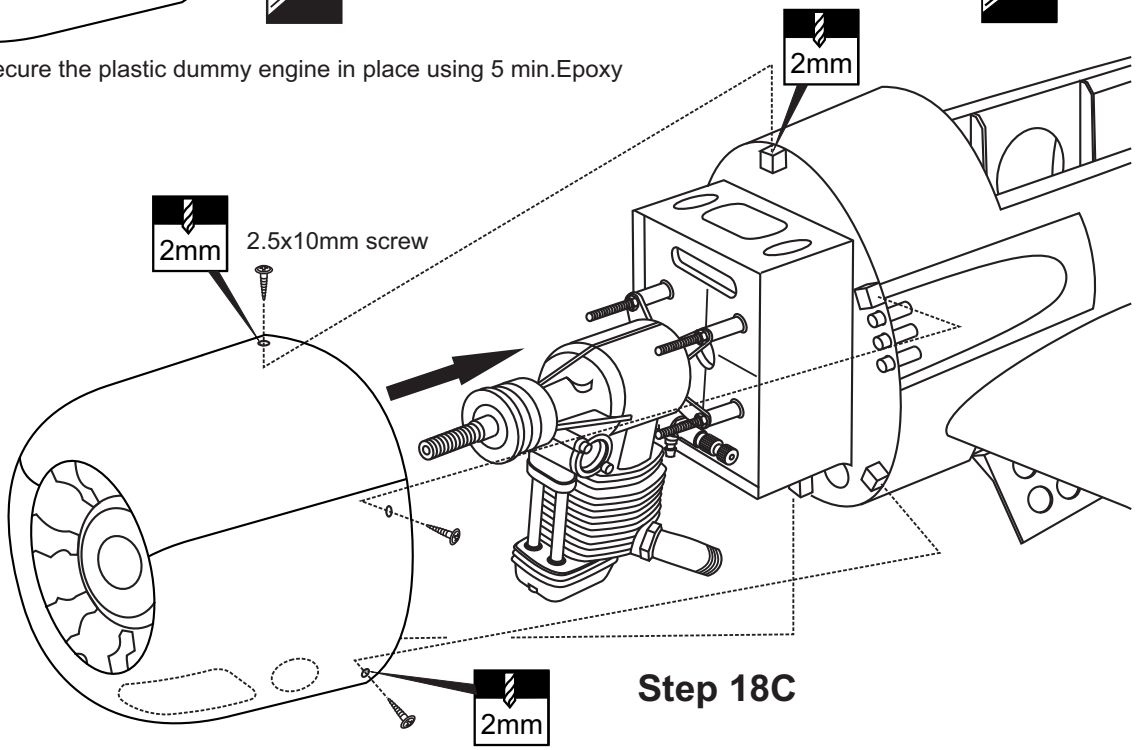
Step 18A



Step 18B



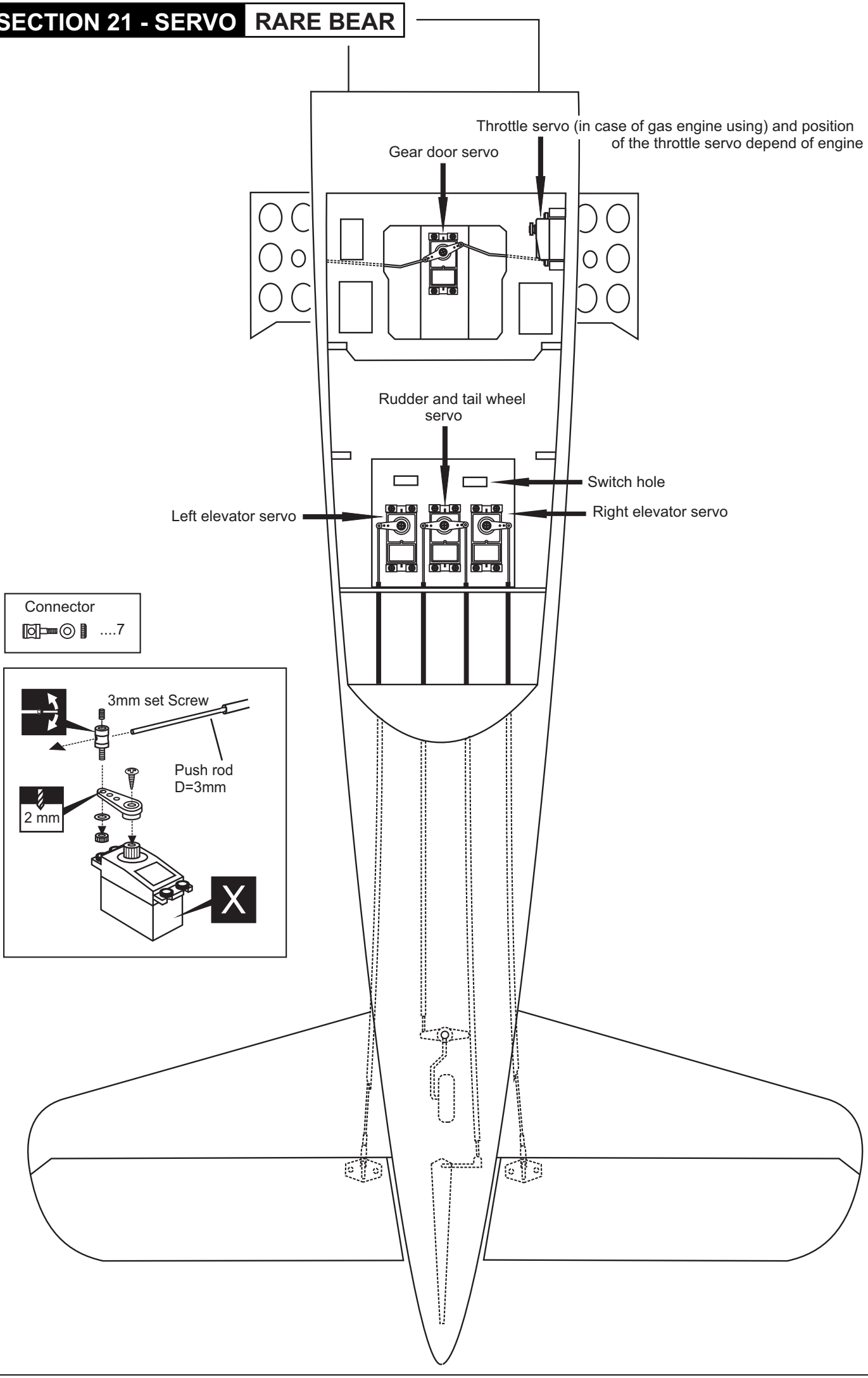
Secure the plastic dummy engine in place using 5 min.Epoxy



Step 18C

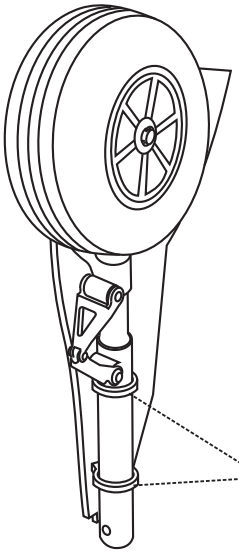
2.5x10mm screw 6

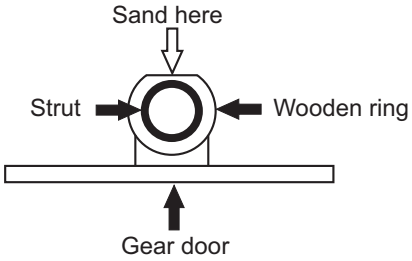
SECTION 21 - SERVO RARE BEAR



SECTION 22 - STRUTS RARE BEAR

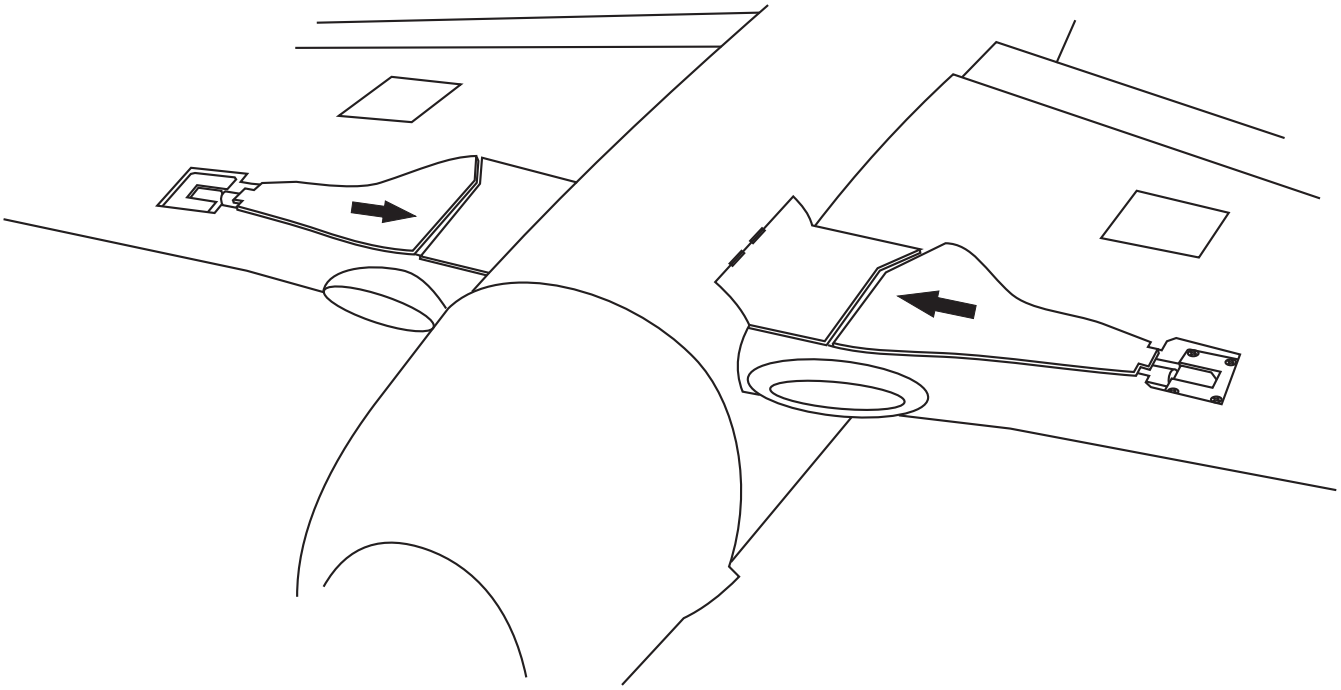
Important: When you “on” the retract swicth, if the retract gear does not retracted completely, you immediately “off” the retract switch. If the retract gear does not extend, use your finger to push the retract gear to the completely retrated position, it will extend.
Then use the hobby knife to remove the place where the retract gear is entangled.





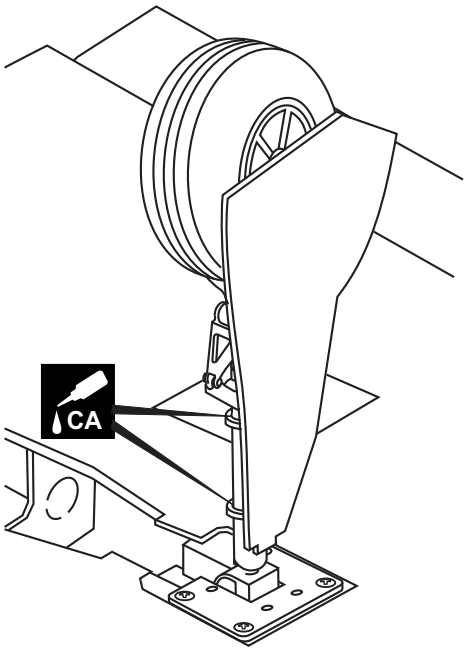
Lightly sand the wooden rings to be sure that the struts locks in retracted position.

Sand here

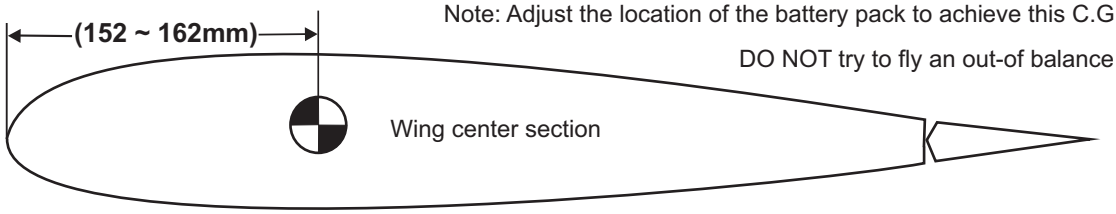


With the retract in the retracted position, carefully move the gear door on the strut until the gear door nearest with the gear door on the fuselage, mark on the struts.

With the retract in the extended position, Glue the rings of gear door to the struts with thin CA glue.

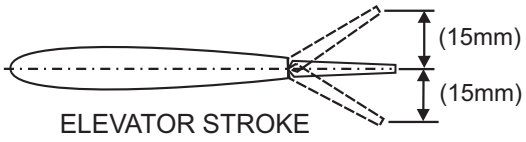


SECTION 23 - BALANCE AND CONTROL SURFACE RARE BEAR

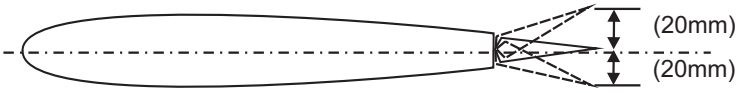


Note: Adjust the location of the battery pack to achieve this C.G location.

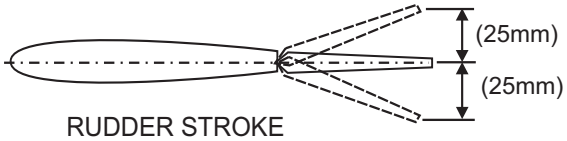
DO NOT try to fly an out-of balance model!



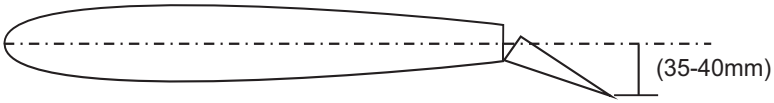
ELEVATOR STROKE



AILERON STROKE



RUDDER STROKE



FLAP STROKE

Adjust the travel of the control surfaces to achieve the values stated in the diagrams.
These value will be suitable for average flight requirements. Adjust the values to suit your particular needs.

SECTION 24 - DECAL RARE BEAR

IMPORTANT: Please do not clean your model with strong solvent or pure alcohol, only use kerosene to keep the colour of your model not fade.