

Radio control model / Flugmodell
U.S NAVY FIGHTER
F6F HELLCAT



VQ No: VQA120

ALL BALSA, PLYWOOD CONSTRUCTION AND ALMOST READY TO FLY

Instruction manual / Montageanleitung

SPECIFICATIONS

Wingspan:.....1535mm
Length:.....1130mm
Electric Motor:.....See next pager
Glow Engine:......46 2-T / .70 4-T
RTF Weight: 3.5Kg (will vary with equipment use)
Radio:.....8 Channel / 8-9 Servos
Function: Ailerons-Elevator-Rudder-Throttle
Flaps-Optional Retractable Landing Gear.

TECHNISCHE DATEN

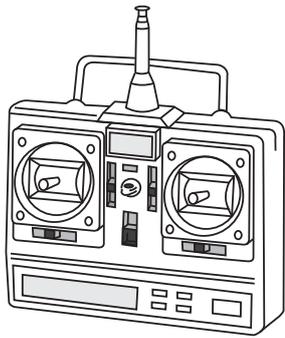
Spannweite:.....1535mm
Länge:.....1130mm
Elektroantrieb.....(siehe nächste Seite)
Verbrennerantrieb:.....7.45cc - 11.5cc
Fluggewicht:.....3.5Kg
Fernsteuerung.....8 Kanal / 8-9 Servos



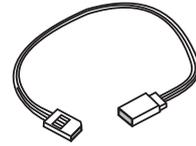
WARNING! This radio controlled model is NOT a toy. If modified or flown carelessly it could go out of control and cause serious human injury or property damage. Before flying your airplane, ensure the air field is spacious enough. Always fly it outdoors in safe areas and seek professional advice if you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

ACHTUNG! Dieses ferngesteuerte Modell ist KEIN Spielzeug! Es ist für fortgeschrittene Modellfluggpiloten 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.

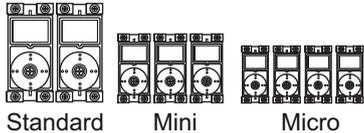
REQUIRED FOR OPERATION (Purchase separately)



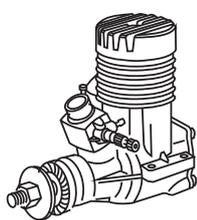
10.5x6 for .40 - 2 cycle engine
 11x6 for .46 - 2 cycle engine
 12x6 for .60 - 4 cycle engine
 12x7 for .70 - 4 cycle engine
 13x7 - 13x8 for electric motor



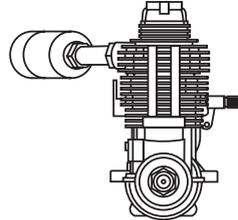
Extension cord for aileron servos: 50cm(x2)
 Extension cord for flap servos: 50cm(x4)
 Extension cord for retract servos: 30cm(x2)
 Extension cord for Rx battery pack: 20cm(x1)



Standard Mini Micro
 Minimum 7 channel radio
 Elevator : 1 standard servo
 Rudder: 1 standard servo
 Aileron: 2 mini servo
 Flaps: 4 micro servo
 Throttle: 1 mini servo (for glow engine only)



.46 ~ .50 - 2 cycle



.60 ~ .70 - 4 cycle



700-800W Brushless Motor



Silicone tube



Spinner hub

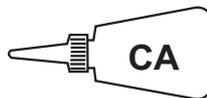


5 cell 4500mAh LiPo battery

GLUE (Purchase separately)



Silicon sealer



Cyanoacrylate Glue (thin type)



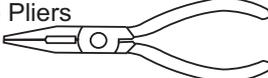
Epoxy Glue
 (30 minute type)

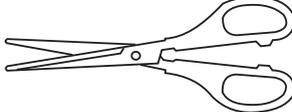
TOLLS REQUIRED (Purchase separately)

Hobby knife 

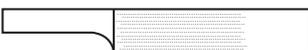
Phillip screw driver 

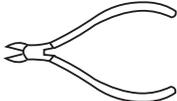
Hex Wrench 

Needle nose Pliers 

Scissors 

Awl 

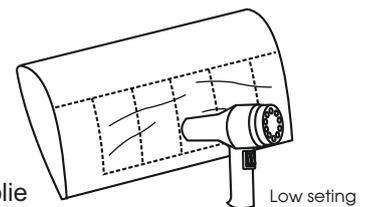
Sander 

Wire Cutters 

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

If exposed to direct sunlight and/or heat, wrinkles 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 Warmluftgebläse (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 zusammgebaut	 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.

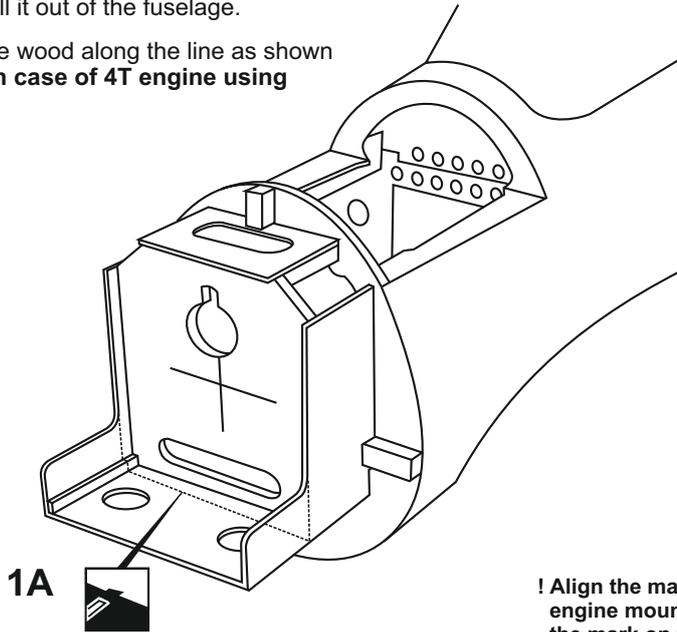
CONVERSION TABLE

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"	

1- ENGINE MOUNT

Push left (or right) the magnetic fuel tank hatch and full it out of the fuselage.

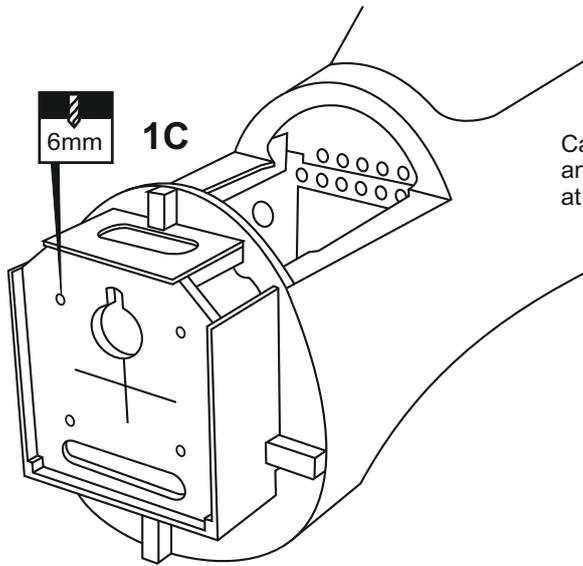
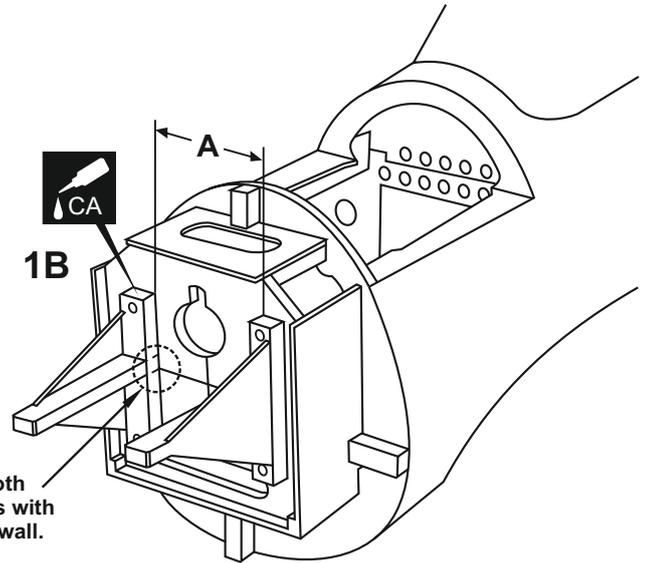
Cut the wood along the line as shown (1A) in case of 4T engine using



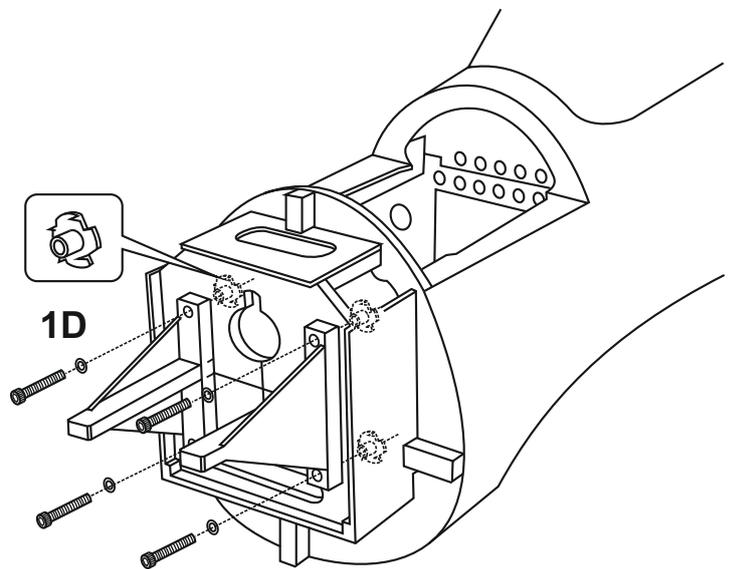
Attach the engine mount beams onto the fire-wall so the distance between of two engine mount beams is "A", and B=B' as show. Secure the engine mount beams onto the fire-wall with litter CA glue (1B)

! Align the mark on both engine mount beams with the mark on the fuselage

Using a pencil or felt tipped pen, mark the fire wall where the four holes are to be drilled(1B)

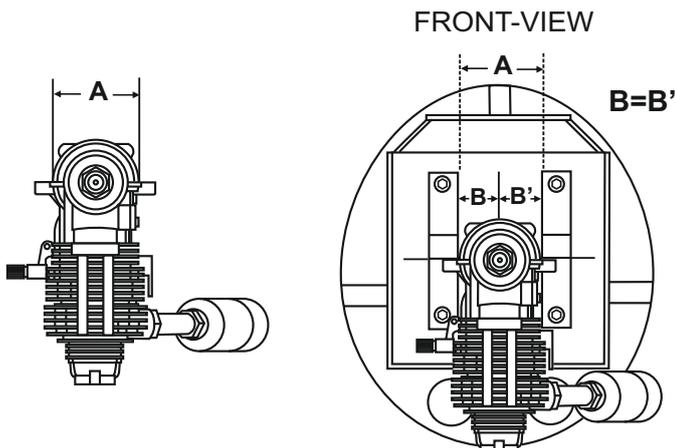


Carefully remove the engine mount beams and drill a 6mm hole through the fire-wall at each of the four marks made above (1C)



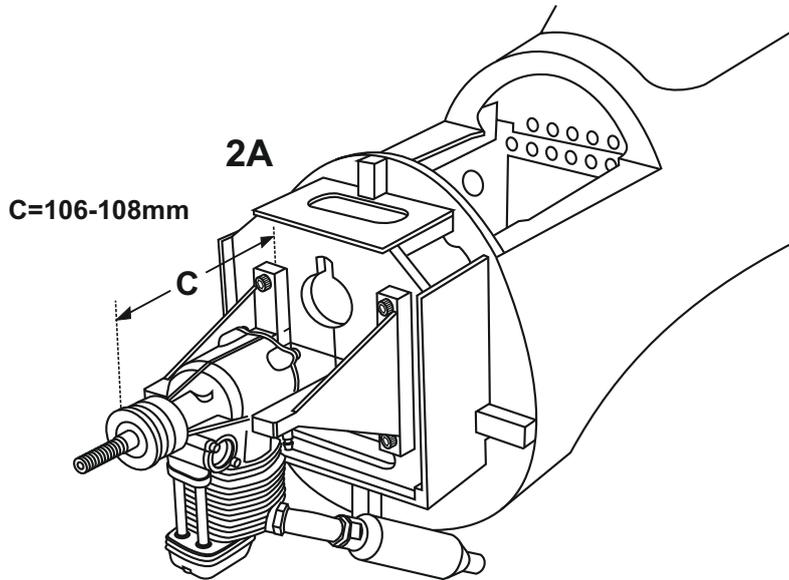
Insert the blind-nut onto each of the four holes make above (1D).

Reposition the engine mount beams on to the fire-wall and secure them with four 4x25mm screw (1D)



4x25mm screw - washer		.....	4
Blind-nut		.....	4

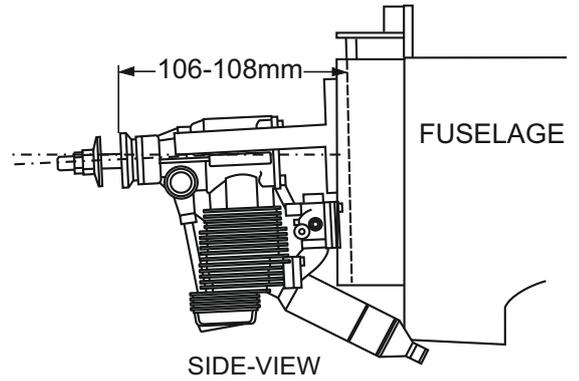
2- ENGINE



C=106-108mm

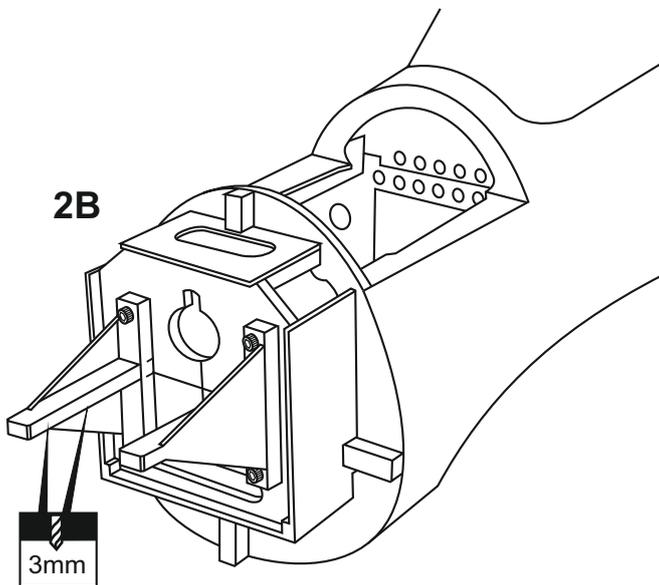
2A

! Engine thrust on balk head is already adjust at factory



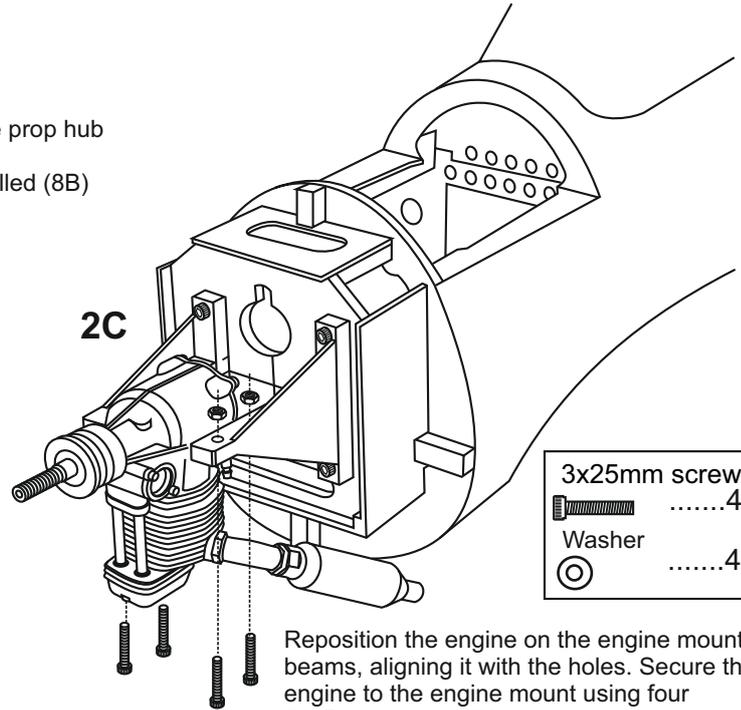
SIDE-VIEW

Position the engine to the engine mounts so the distance from the prop hub to the fire-wall is 106-108mm.
Mark the engine mounting plate where the four holes are to be drilled (8B)



2B

2C



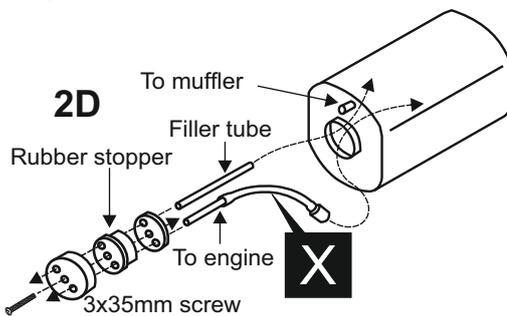
3x25mm screw	.....4
Washer	.....4

Reposition the engine on the engine mount beams, aligning it with the holes. Secure the engine to the engine mount using four 3x25mm screws (2C)

Note: Apply Silicon sealer to each of the 3x25mm screw and nut.

Remove the engine and drill a 3mm holes through the beam at each of the four marks made above (8C)

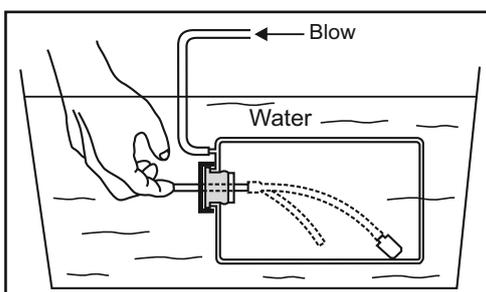
Marking sure that you drill the hole perpendicular to the beam of the engine mount.



2D

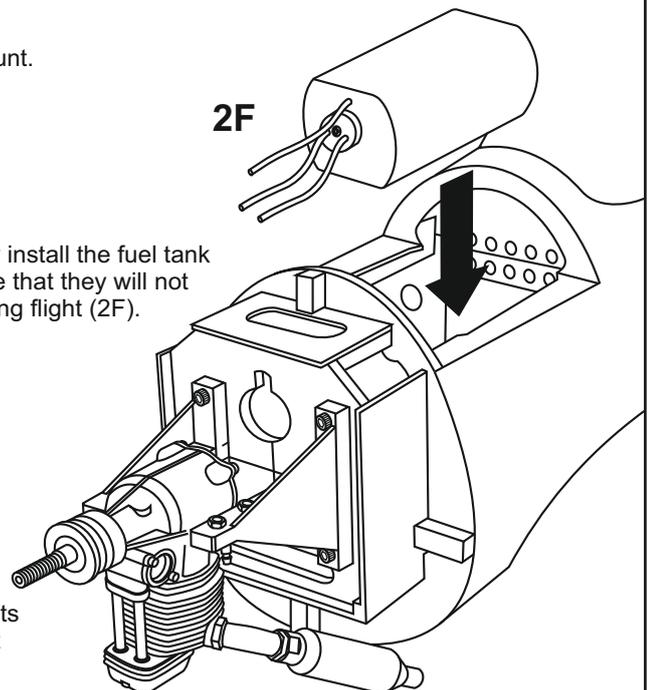
2F

Carefully install the fuel tank to ensure that they will not shift during flight (2F).

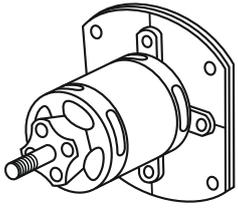


2E

Checking for leaks - block the vents and blow into the feed - if in doubt submersing the tank in a blow of water will show up any problems.

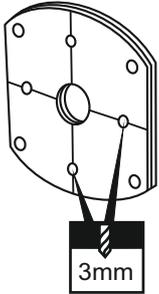


3- ELECTRIC MOTOR



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

3A

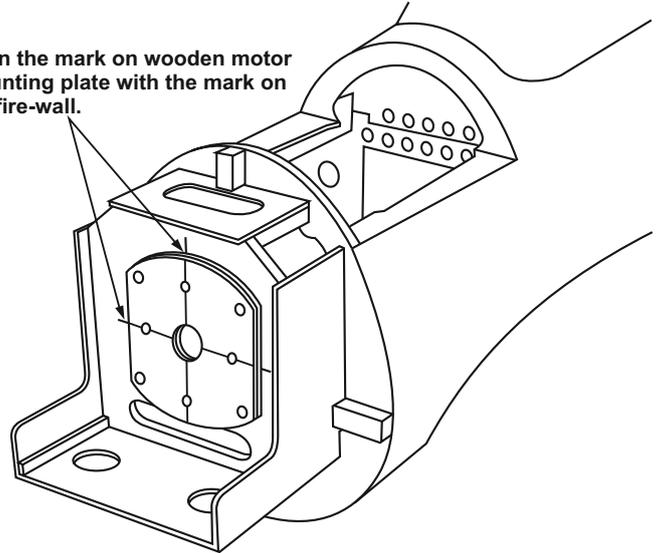


Remove the aluminum motor mounting plate and drill a 1/8" (3mm) hole through the plywood at each of the four marks marked.

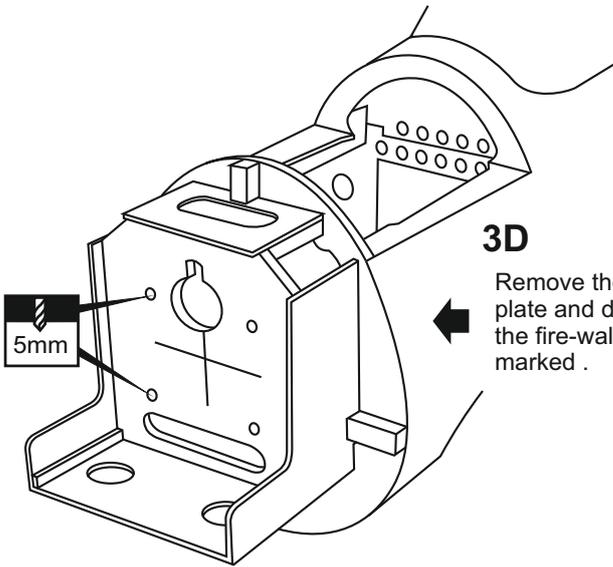
3B

3mm

! Align the mark on wooden motor mounting plate with the mark on the fire-wall.



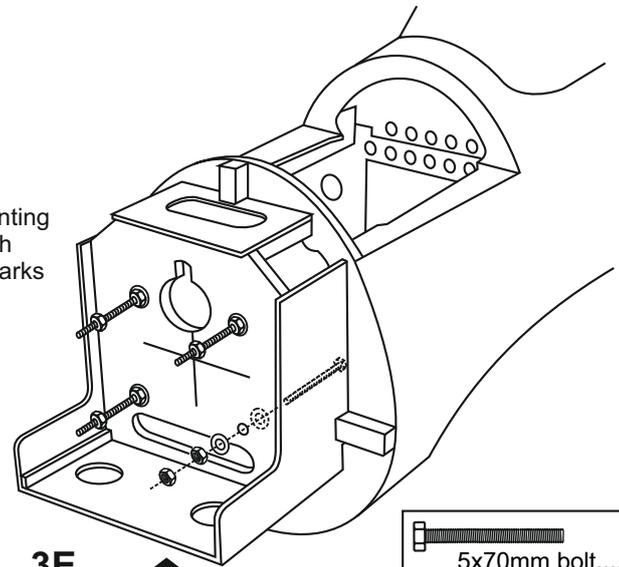
3C Using a wooden motor mounting plate as a template, mark the fire-wall where the four holes are to be drilled.



3D

Remove the wooden motor mounting plate and drill a 5mm hole through the fire-wall at each of the four marks marked.

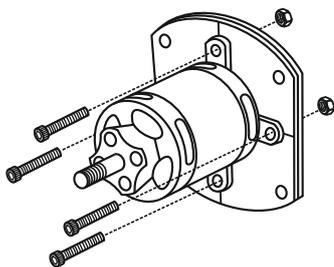
5mm



3E

Attach the four 5x70mm bolts and nuts to the fire-wall as shown.

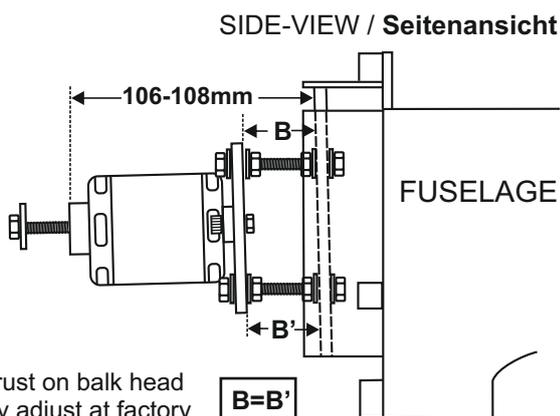
-  5x70mm bolt....4
-  5mm nut.....12
-  5mm washer...16



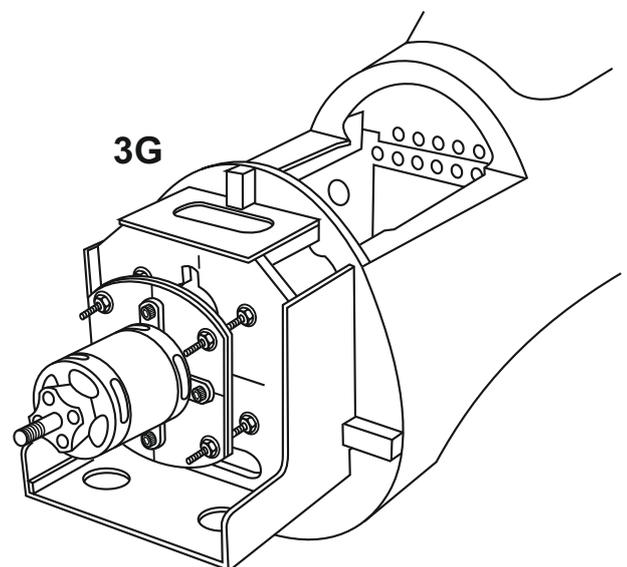
3F

Secure the Motor to the wooden motor mounting plate using the four 3mm bolts.

-  3mm bolt / nut...4

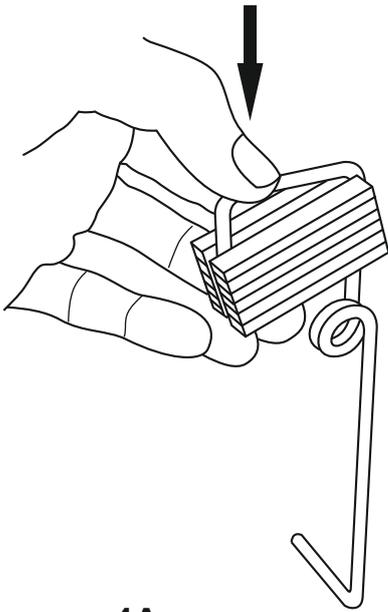


! Motor thrust on balk head is already adjust at factory



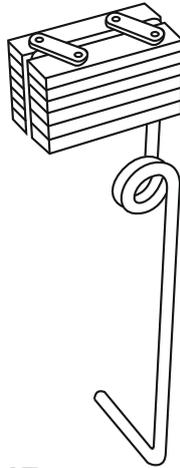
3G

4- FIXED GEAR



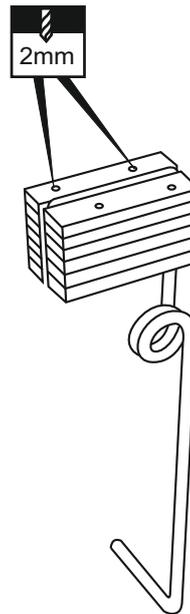
4A

Slide the landing gear onto the plywood gear mount and push the landing gear as shown.



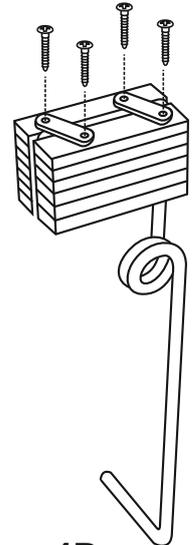
4B

Using the nylon gear strap as a template, mark the plywood gear mount where the four holes to be drill.



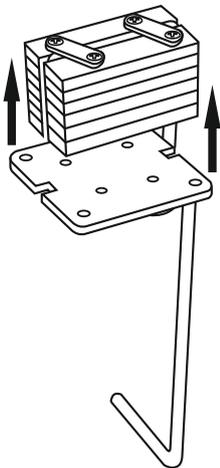
4C

Remove the nylon gear strap and drill a 2mm hole at each of the four marks marked.



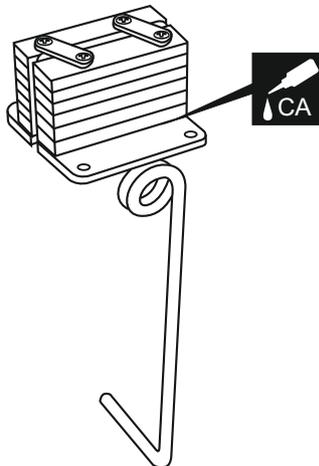
4D

Reposition the nylon gear strap and secure them in place using four 3x12mm screws.



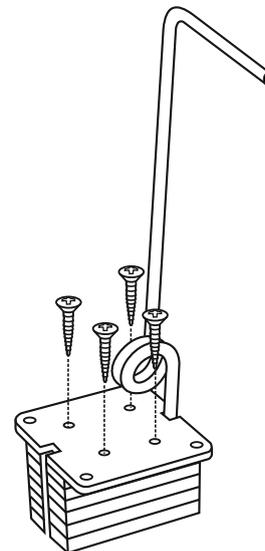
4E

Attach the ply gear mount plate to the plywood gear mount



4F

Secure the ply gear mount plate in place using CA glue.



4G

Drill a 2mm holes through the ply gear mount plate. Secure the ply gear mount using four 3x20mm screws.

3x12mm screw

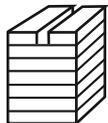
.....8

3x20mm screw

.....8

Nylon gear strap

.....4



Plywood Gear mount
x 2

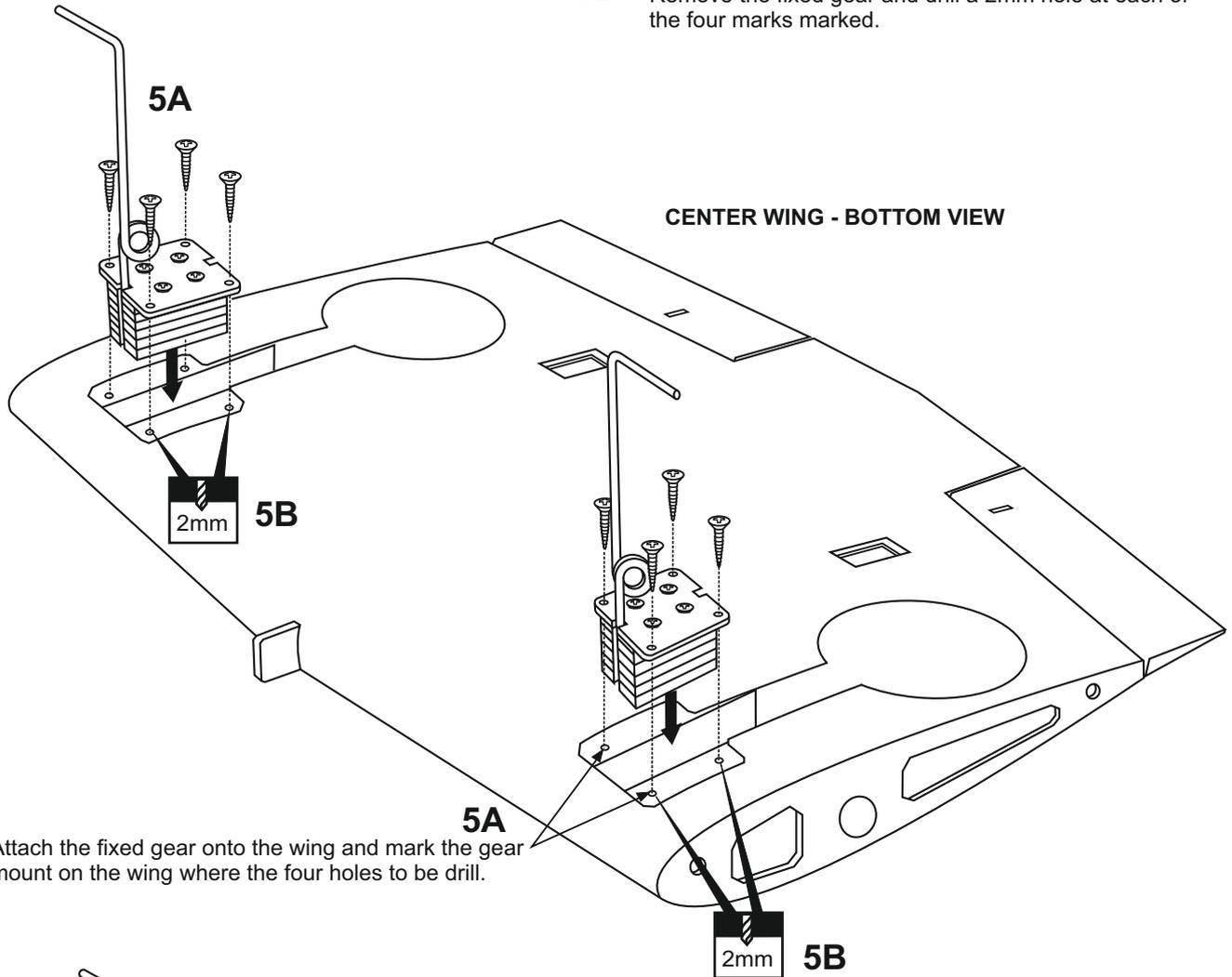


Ply gear mount
plate x 2

5- FIXED GEAR Continued

5A Attach the fixed gear onto the wing and mark the gear mount on the wing where the four holes to be drill.

5B Remove the fixed gear and drill a 2mm hole at each of the four marks marked.



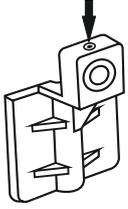
5C Reposition the fixed gear onto the wing, secure the fixed gear using eight 3x20 screws.

3x20mm screw



6- FIXED GEAR Continued

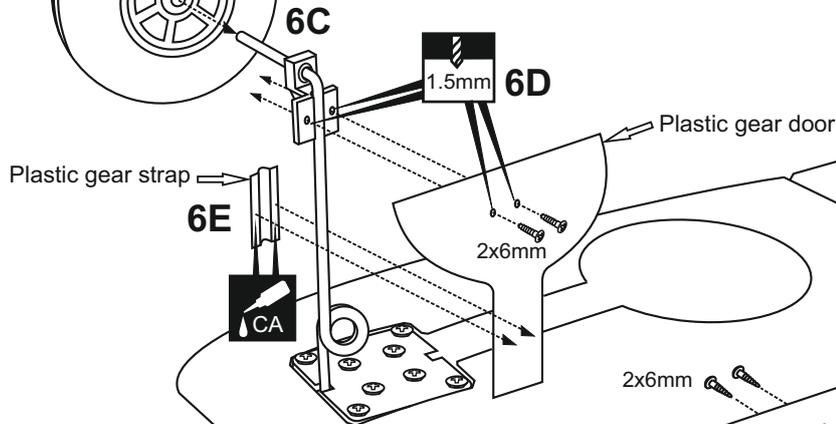
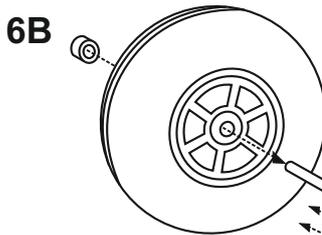
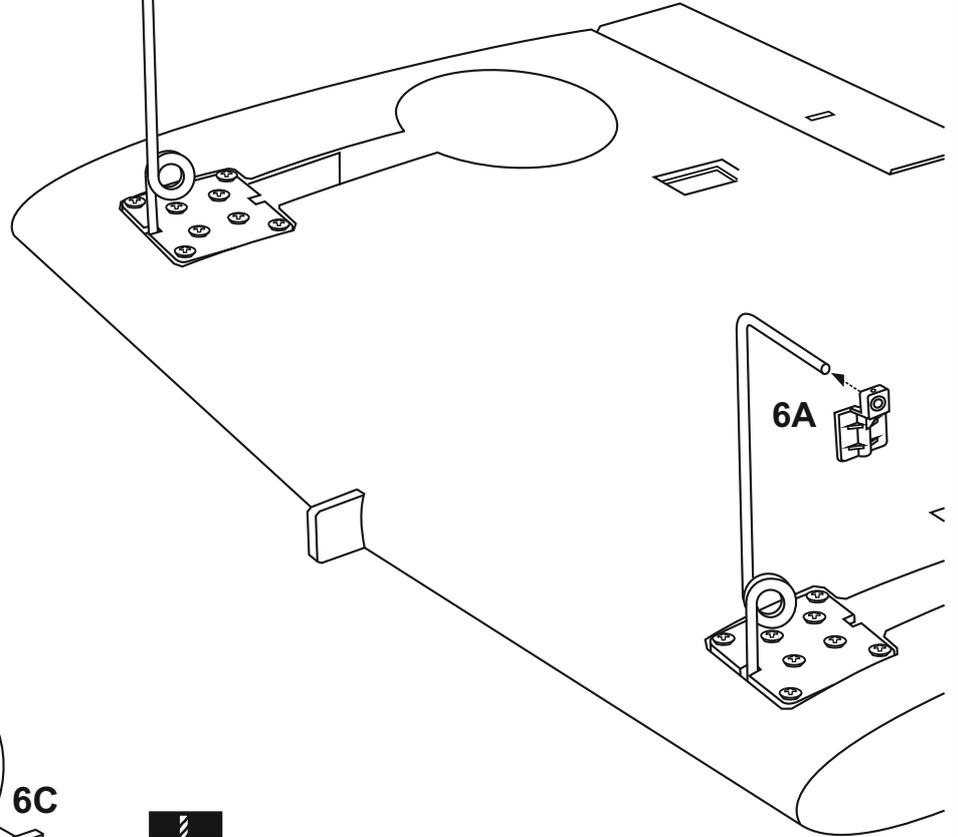
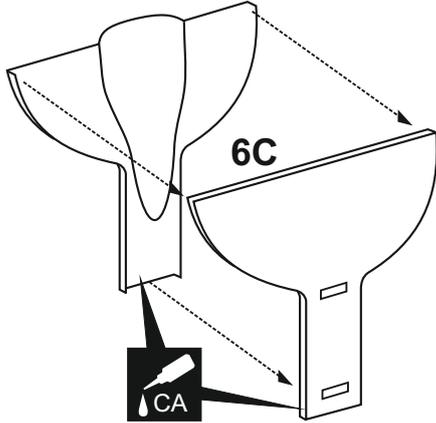
Secure the plastic gear door mount in place using the 3mm screw set.



6A Slide the two plastic gear door mounts onto each landing gear.

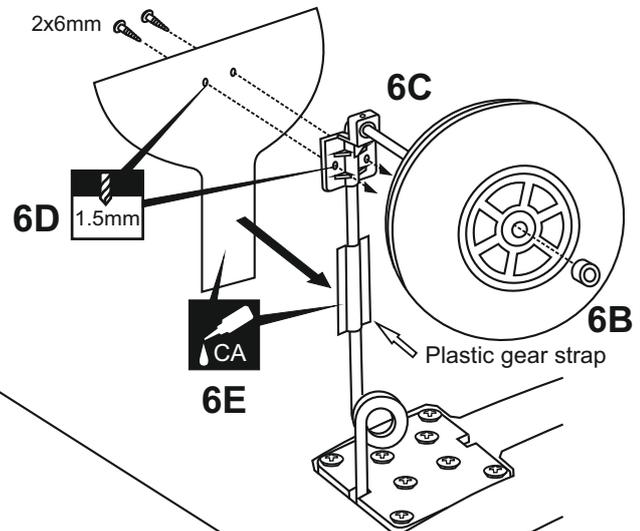
6B Slide the wheels and 4mm collar onto the landing gears.

6C Attach the plastic gear door to the plywood gear door.



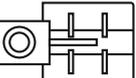
6D Attach the plastic gear door to the plastic gear door mounts, drill the 1.5mm holes through the plastic gear door and the plastic gear door mount as shown.

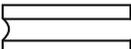
6E Secure the gear doors using the 2x6mm screws and plastic gear straps as shown.



2x6mm screw
4

4mm collar
2

Plastic gear door mount
2

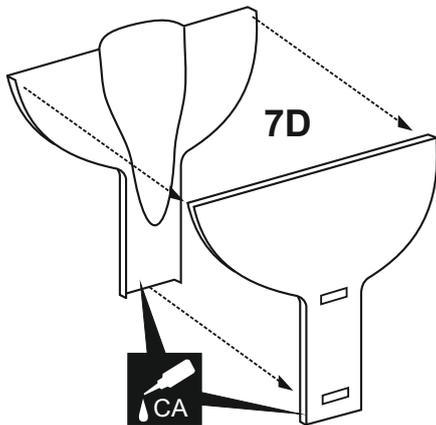
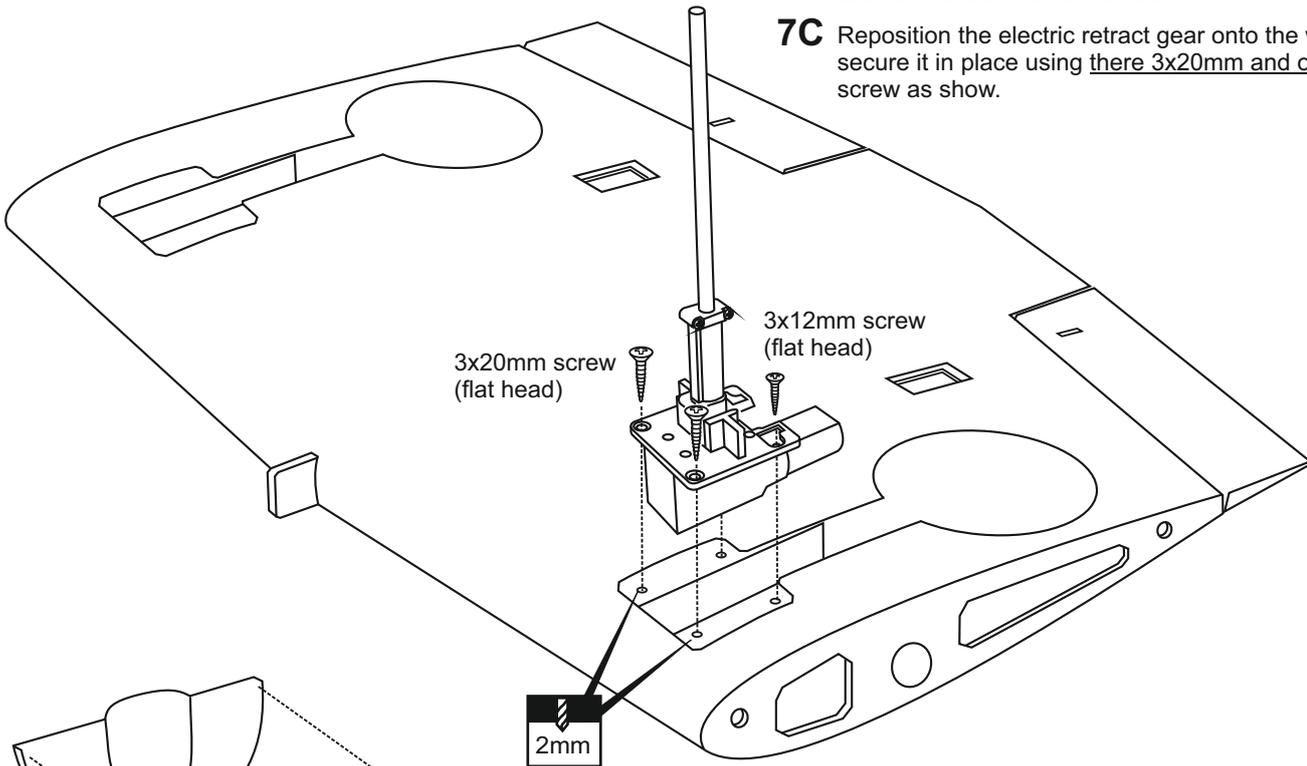
Plastic gear strap
2

7- ELECTRIC RETRACT

7A Attach the electric retract gear onto the wing and mark the gear mount on the wing where the four holes to be drill.

7B Remove the electric retract gear and drill a 2mm hole at each of the four marks marked.

7C Reposition the electric retract gear onto the wing and secure it in place using three 3x20mm and one 3x12mm screw as show.



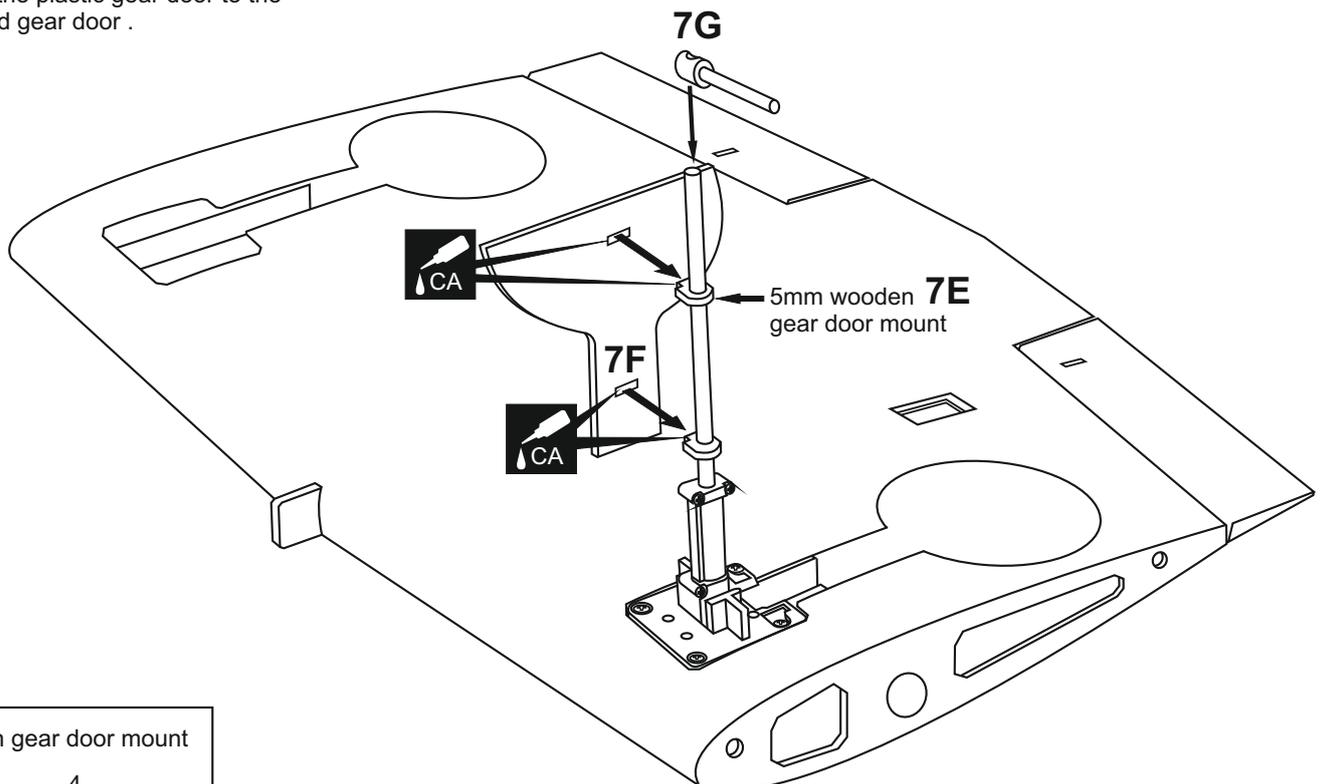
Attach the plastic gear door to the plywood gear door .

7D Attach the plastic gear door to the plywood gear door .

7E Slide the two wooden gear door mounts onto each landing gear. Do not glue at this time.

7F Attach the gear door to the wooden gear door mounts, secure the plastic gear door in place using CA glue.

7G Slide the main wheel axle onto the landing gear



5mm wooden gear door mount

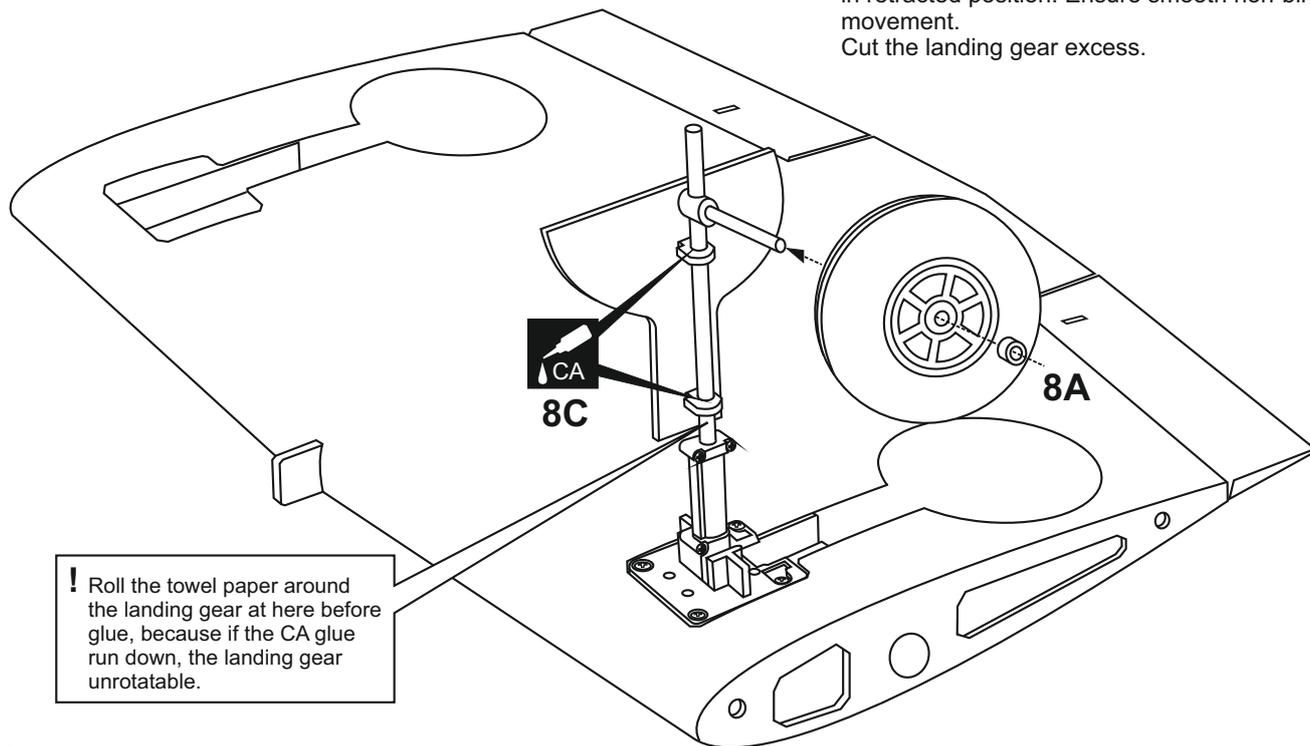


.....4

8- ELECTRIC RETRACT Continued

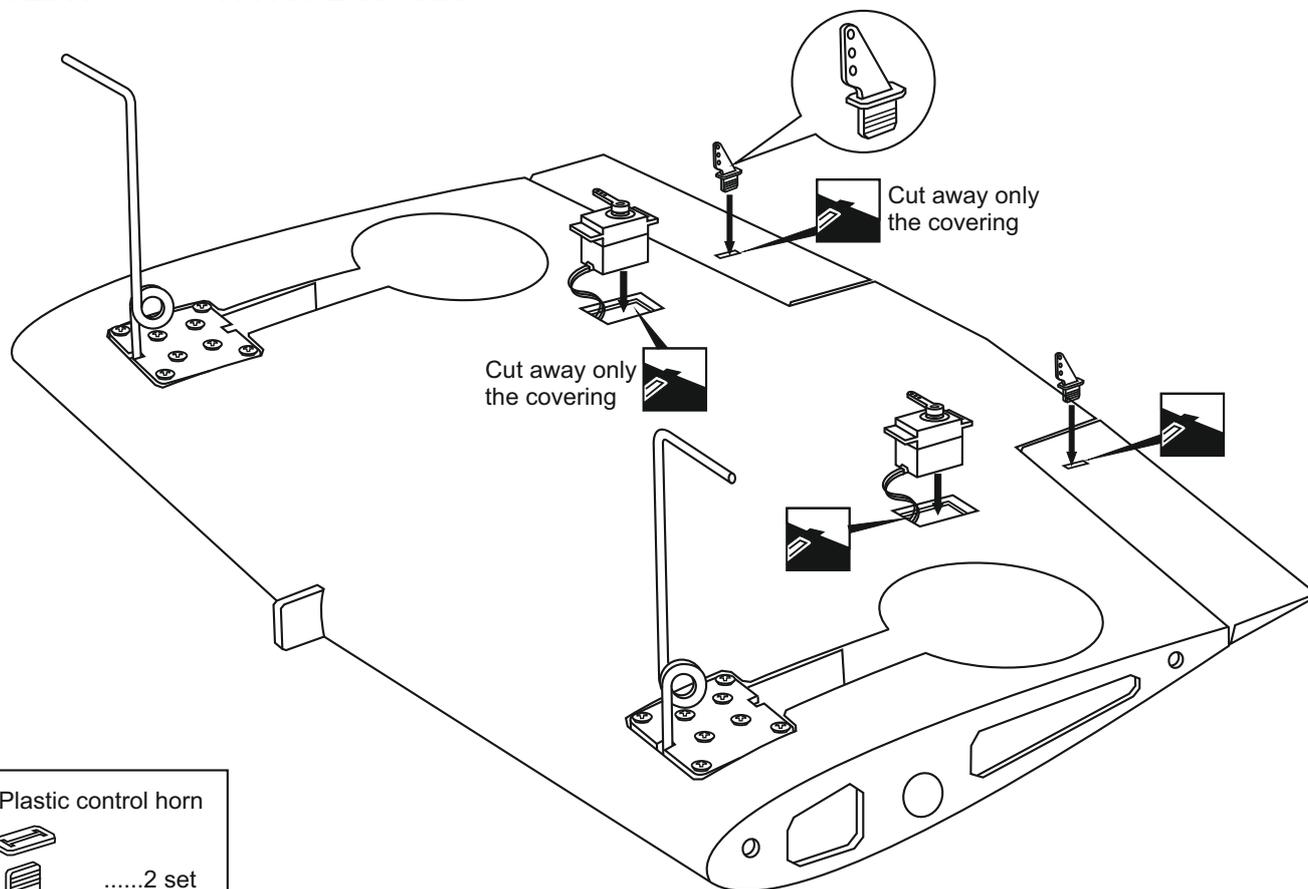
8A Slide the wheel and collar onto the wheel axle.

8B Connect the electric retract with the radio to check the position of the wheel when the electric retract in retracted position. Ensure smooth non-binding movement. Cut the landing gear excess.



8C Secure the wooden gear door mount with the landing gear using CA glue

9- SERVO - CONTROL HORN

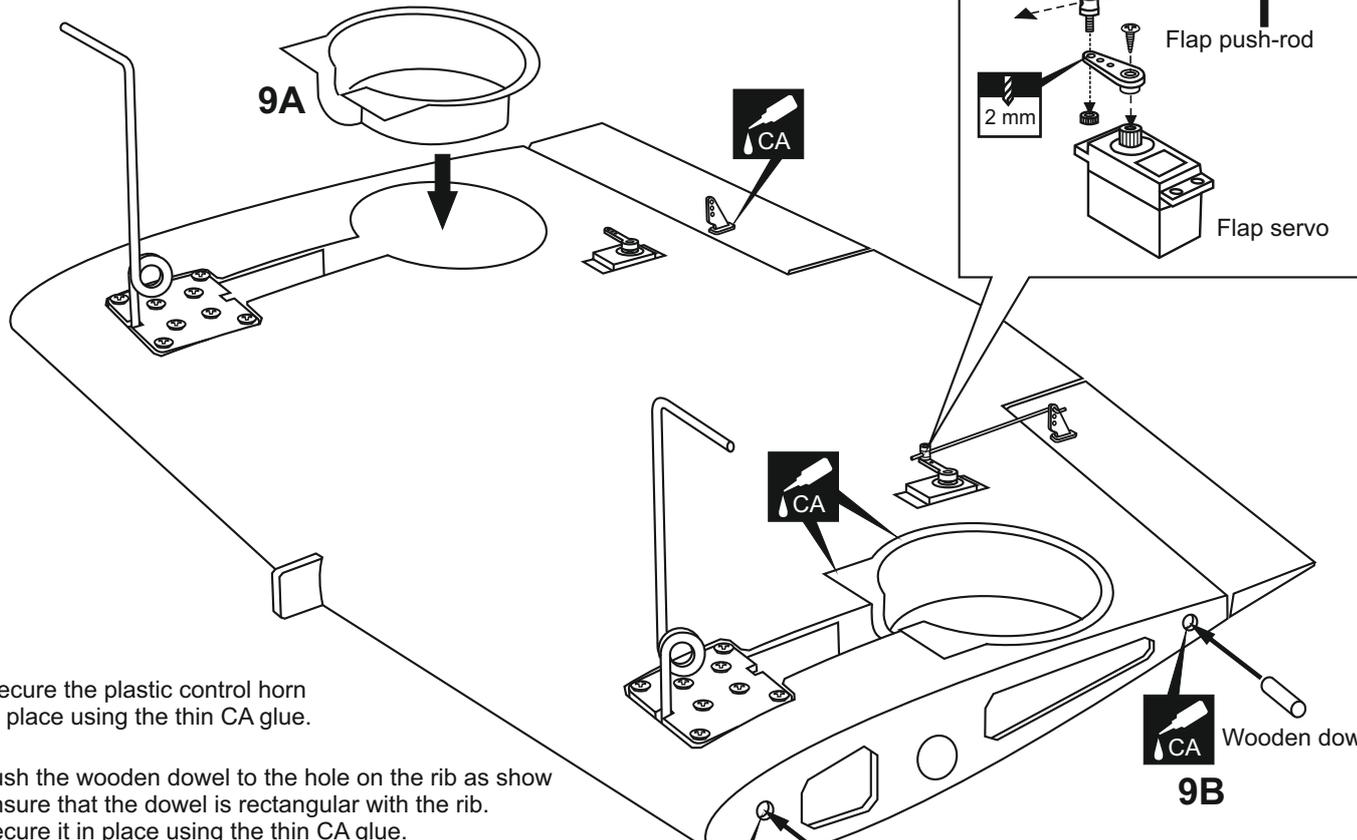


Plastic control horn



.....2 set

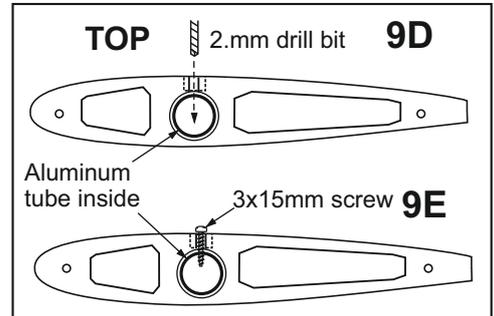
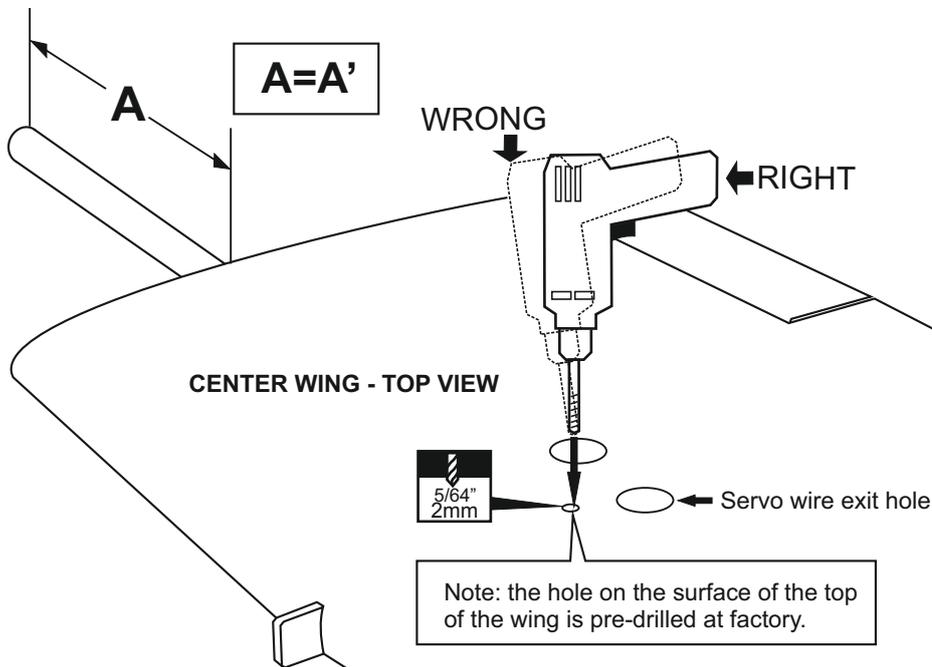
9- SERVO - CONTROL HORN (CENTER WING)



9B Secure the plastic control horn in place using the thin CA glue.

9C Push the wooden dowel to the hole on the rib as show. Ensure that the dowel is rectangular with the rib. Secure it in place using the thin CA glue.

9D Carefully, slide the aluminum tube into the wing, ensure that A = A' as show. Drill the 2mm hole as show.

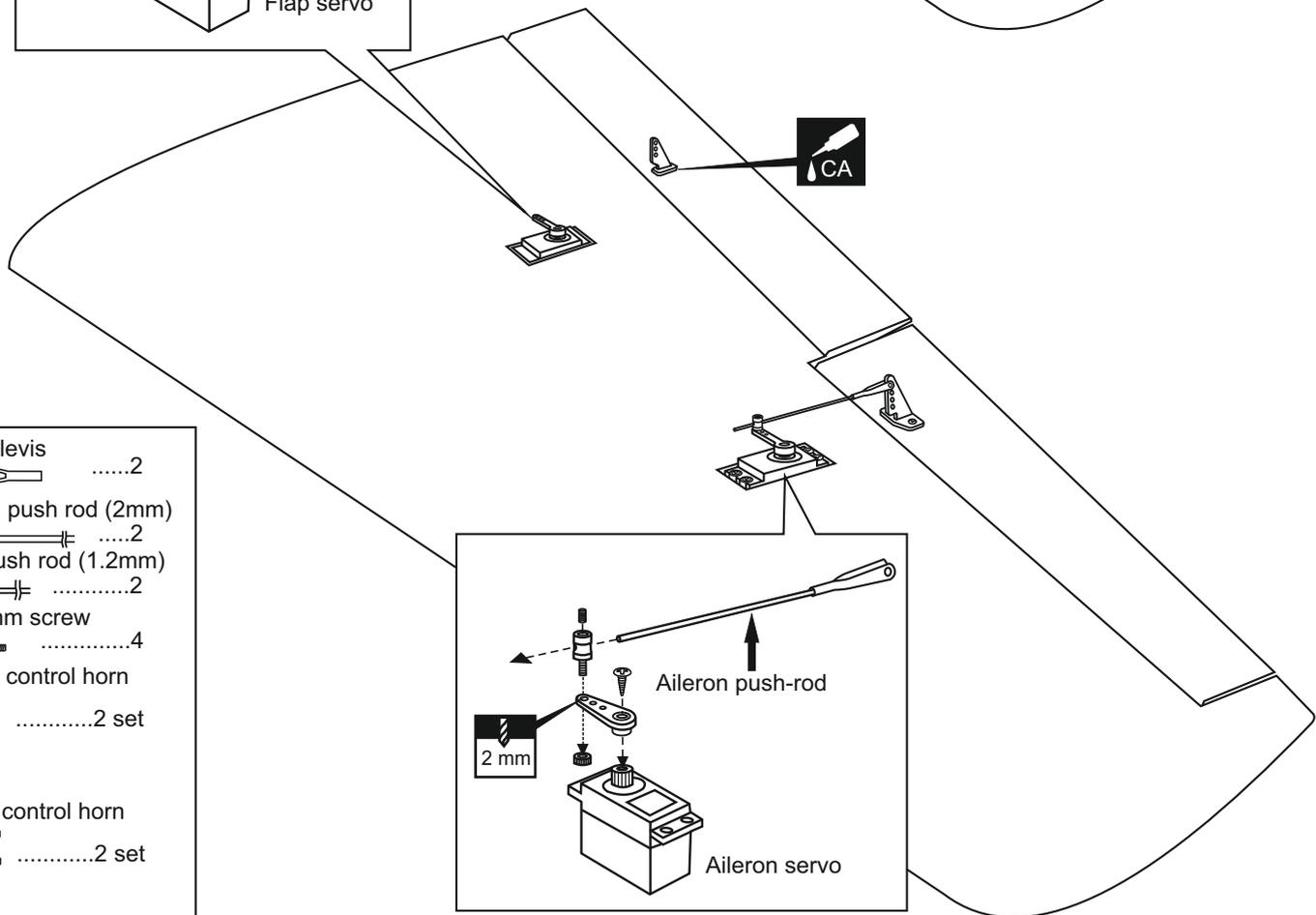
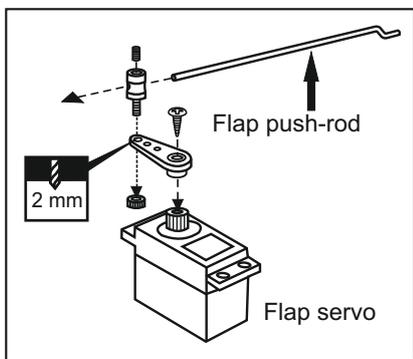
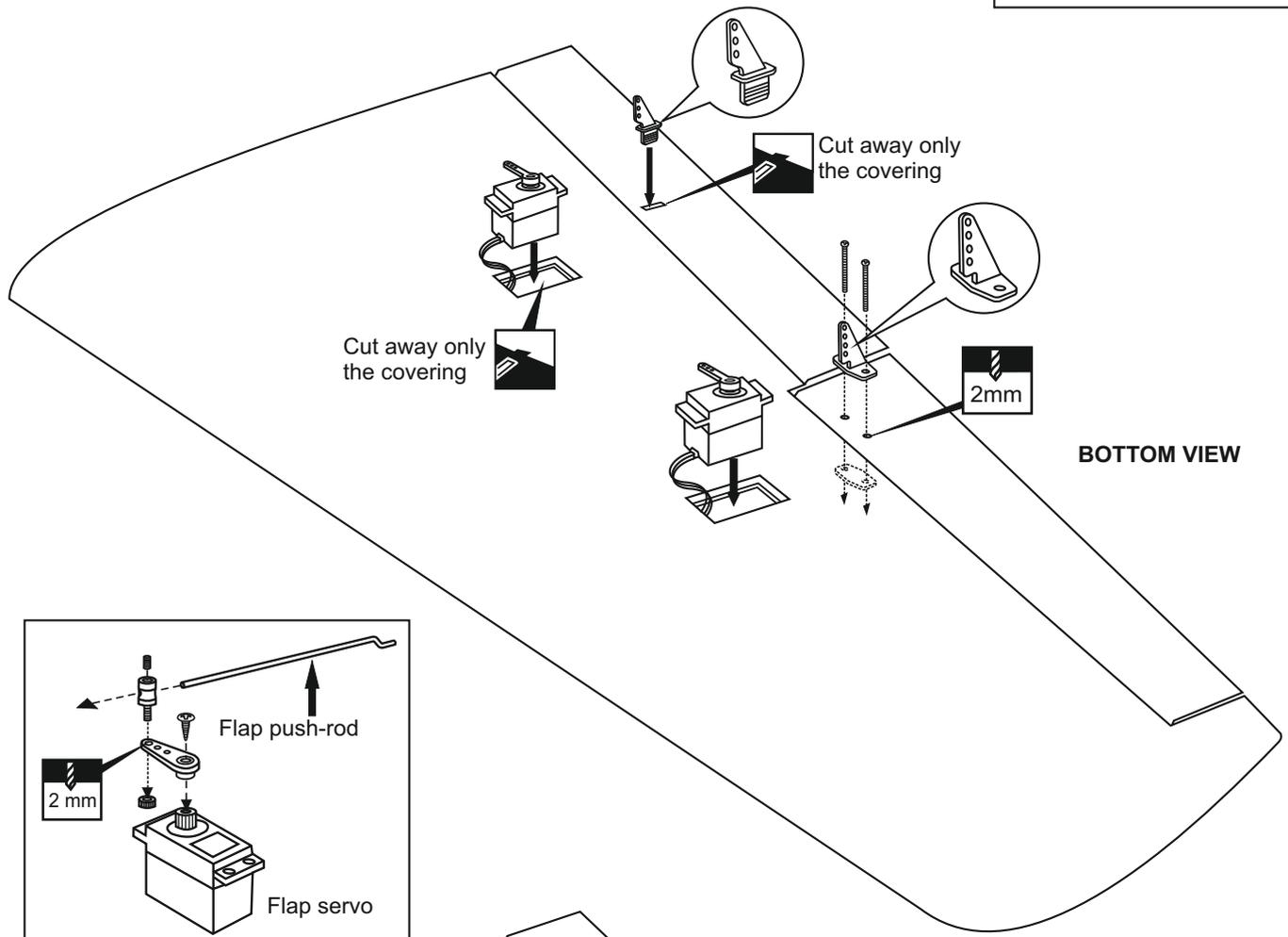


9E Secure the aluminum tube in place using 3x15mm screw.

Flap push rod (1.2mm)	.....2
Connector	.....2
3x15mm screw	.....1

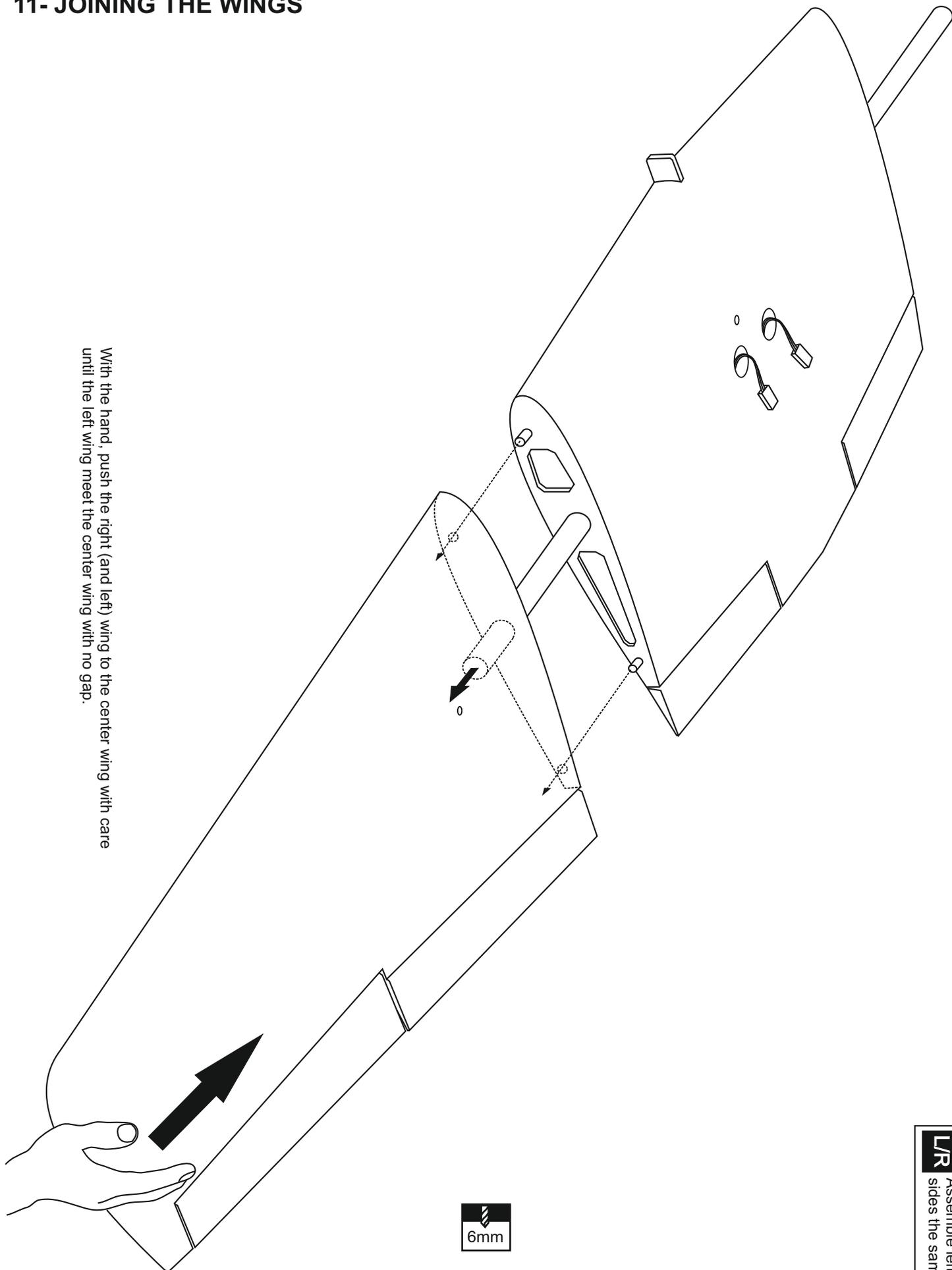
10- SERVO - CONTROL HORN (RIGHT AND LEFT WING)

L/R Assemble left and right wings the same way.



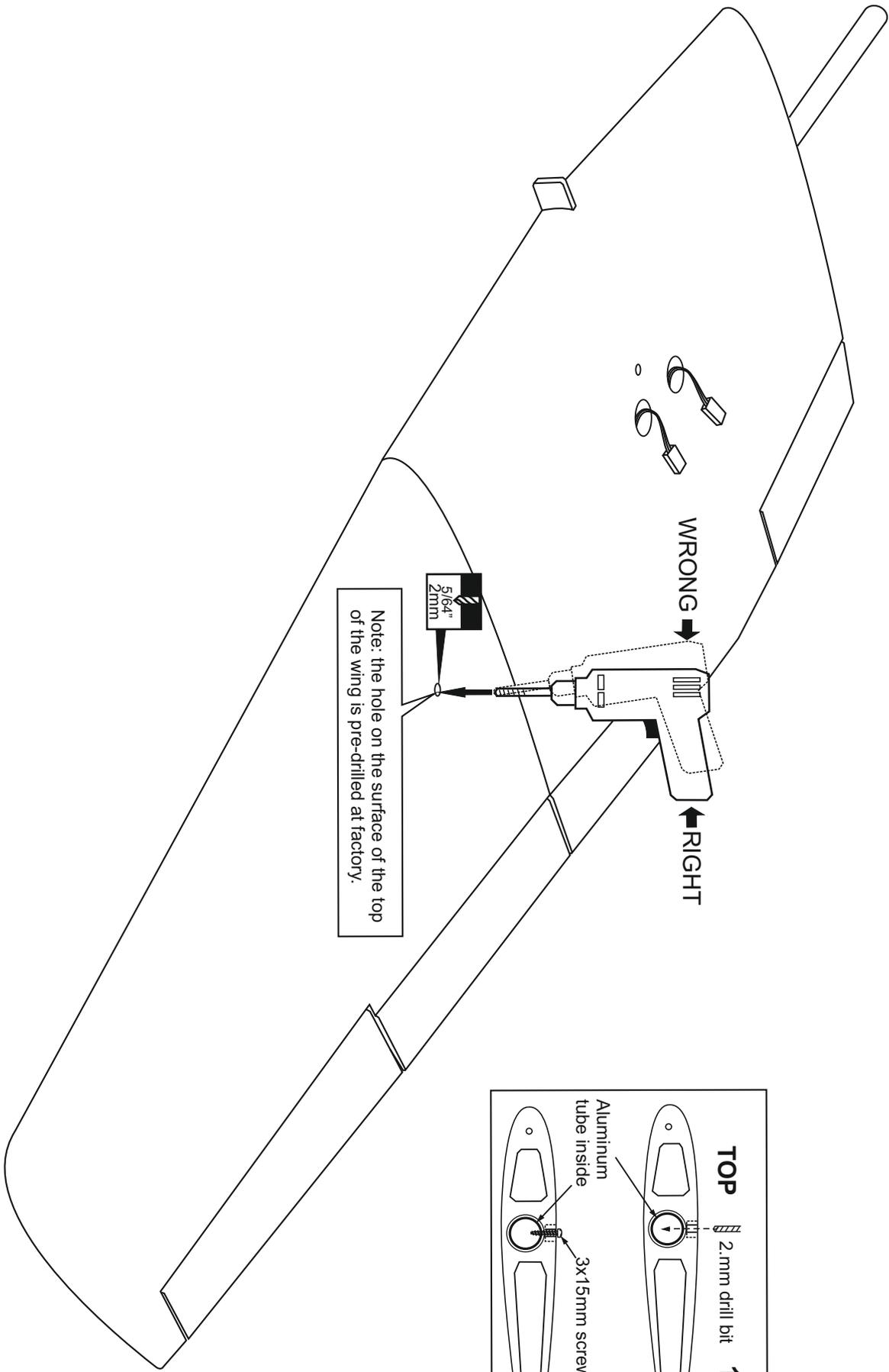
- Steel clevis2
- Aileron push rod (2mm)2
- Flap push rod (1.2mm)2
- 2x20mm screw4
- Plastic control horn2 set
- Plastic control horn2 set
- Connector4

11- JOINING THE WINGS



L/R Assemble left and right sides the same way.

12- JOINING THE WINGS Continued

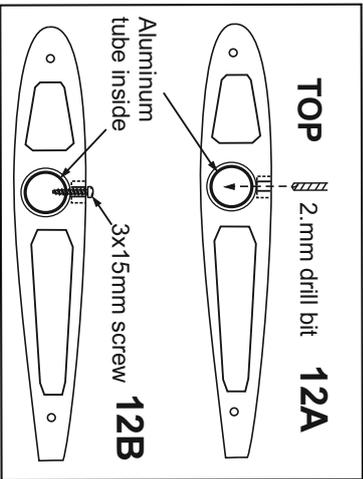


Note: the hole on the surface of the top of the wing is pre-drilled at factory.

- 12A** Drill the 2mm as show.
- 12B** Secure the left wing in place using 3x15mm screw.

L/R Assemble left and right sides the same way.

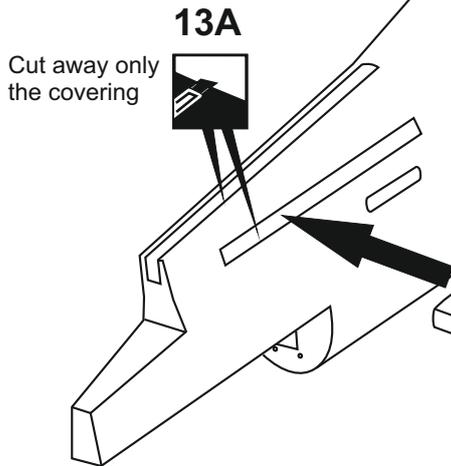
3x15mm screw
 1



13- HORIZONTAL STABILIZER

13A Using a sharp hobby knife, carefully cut away the covering around of all slots for the horizontal stabilizer and vertical fin installation.

Pull the left and right elevator out of the horizontal stabilizer.

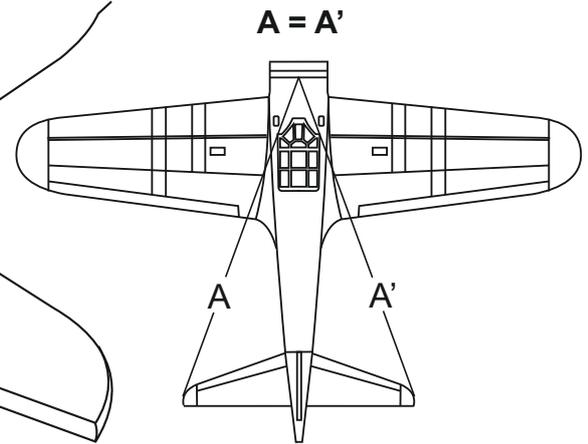
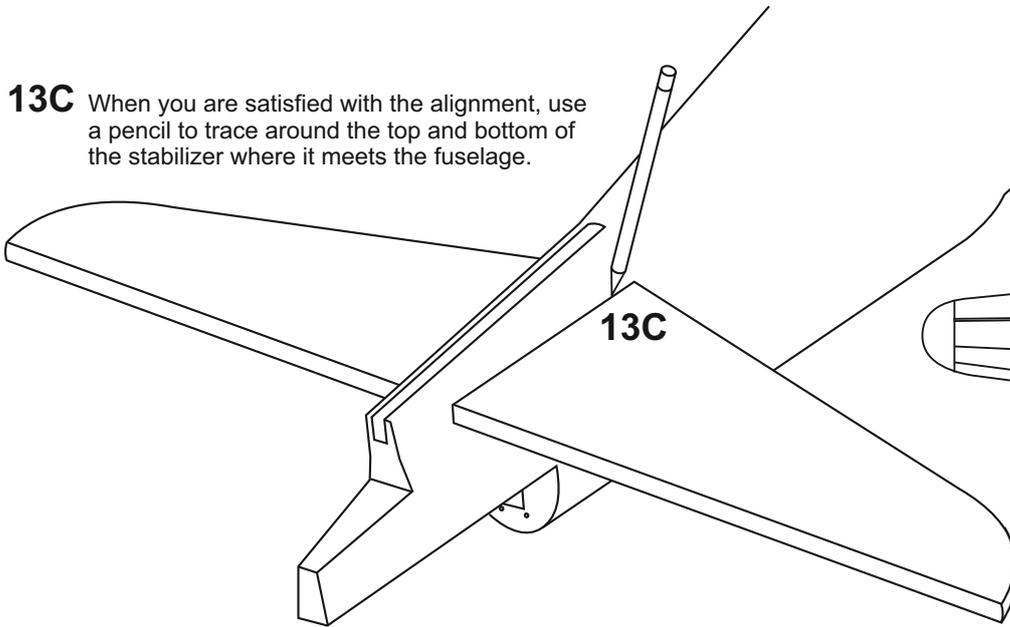


13B Push the horizontal stabilizer into the slot on the fuselage as show. Check the alignment of the horizontal stabilizer by measuring from a fixed point along the center line of the fuselage to the leading edge on each side of the horizontal stabilizer. The distance must be equal on both sides . If not, adjust the stabilizer until the measurements are the same (see picture below: $A=A'$).

13B

Cut away only the covering both sides.

13C When you are satisfied with the alignment, use a pencil to trace around the top and bottom of the stabilizer where it meets the fuselage.



Cut away only the covering both side

13D

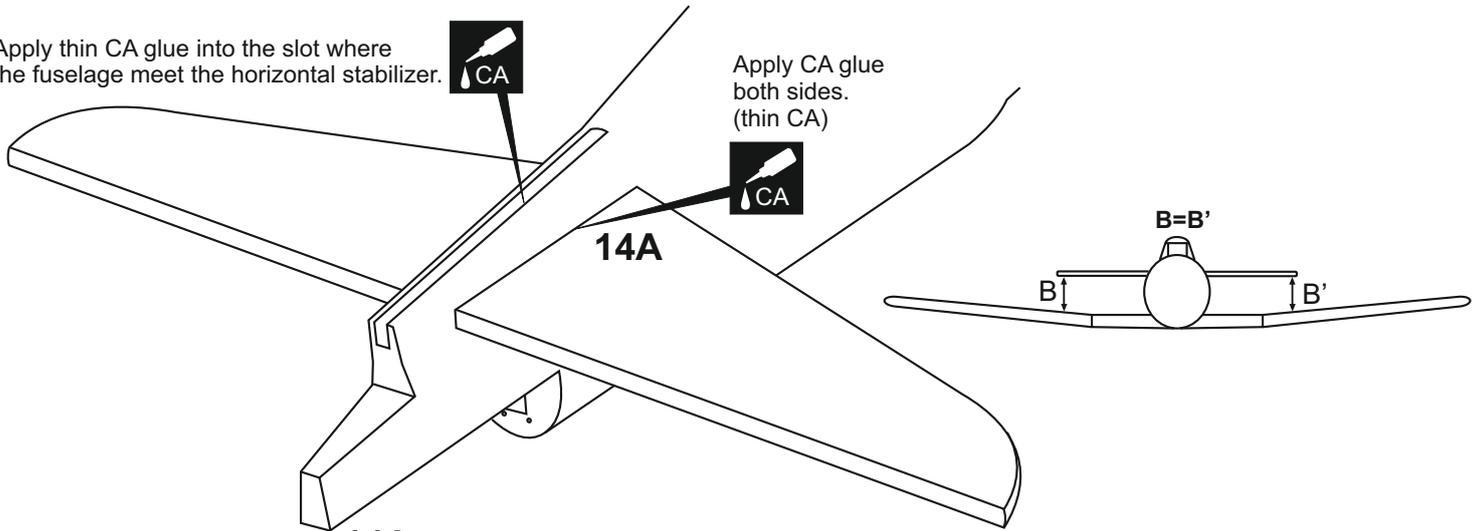
13D Remove the horizontal stabilizer from the fuselage. Using a straight edge and a sharp hobby knife, carefully cut away the covering **inside the lines** which were marked above. Be cautious **not to cut into the wood**-this will weaken the structure.

14- HORIZONTAL AND VERTICAL STABILIZER

Apply thin CA glue into the slot where the fuselage meet the horizontal stabilizer.

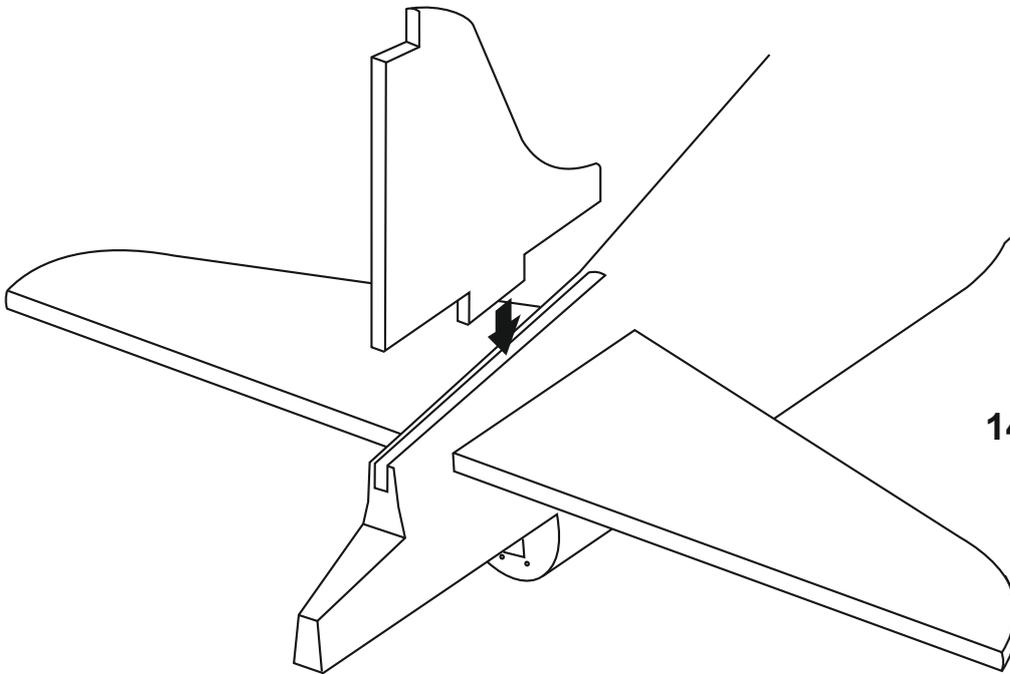


Apply CA glue both sides. (thin CA)



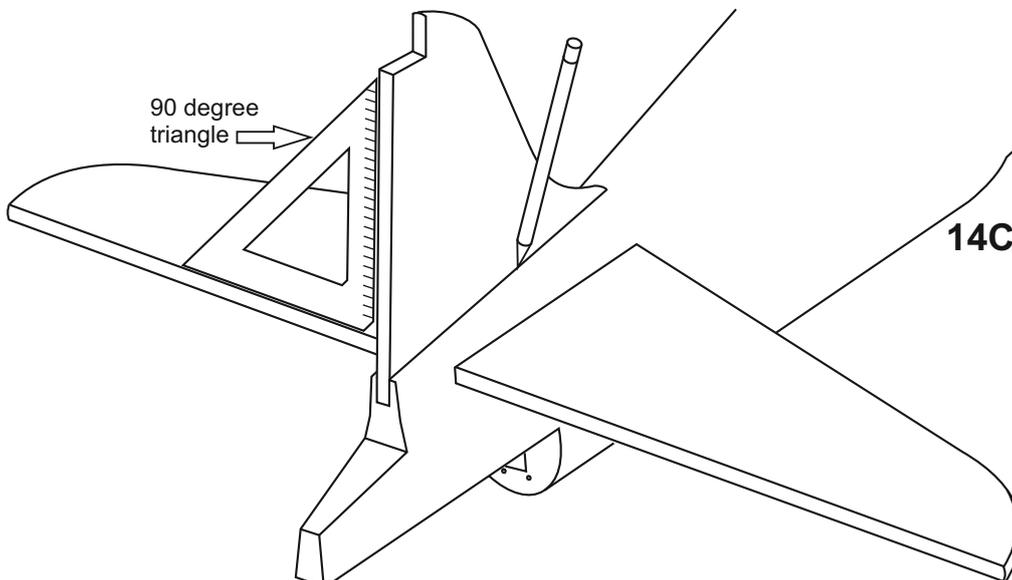
14A Install the horizontal stabilizer onto the fuselage and adjust the alignment as described in step 13B. Note: it is important to ensure that the horizontal stabilizer is also level in regards to the fuselage. Apply the thin CA along the area where the covering was removed in the previous step and to the fuselage where the horizontal stabilizer mounts.

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



Pull the rudder out of the vertical fin.

14B Carefully, push the vertical fin into the slot on the fuselage as shown (12A).

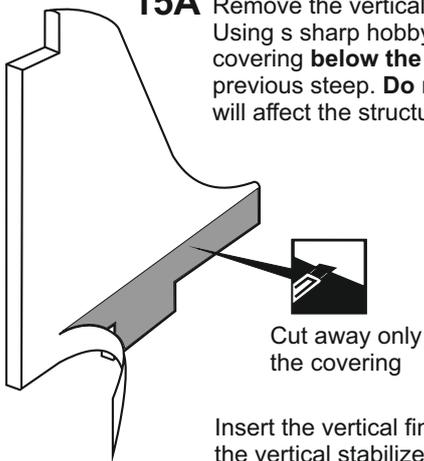


14C Trial fit the vertical fin in position. Using a 90 degree triangle, ensure that the vertical stabilizer is perpendicular to the horizontal stabilizer (12B).

Using a pencil, trace around the vertical stabilizer where it meets the fuselage. Remove the vertical stabilizer from the fuselage.

15- VERTICAL STABILIZER

15A Remove the vertical stabilizer from the fuselage. Using a sharp hobby knife, carefully cut away the covering **below the lines** which were drawn in the previous step. **Do not cut into the woods** as this will affect the structural integrity of the stabilizer (**12C**).

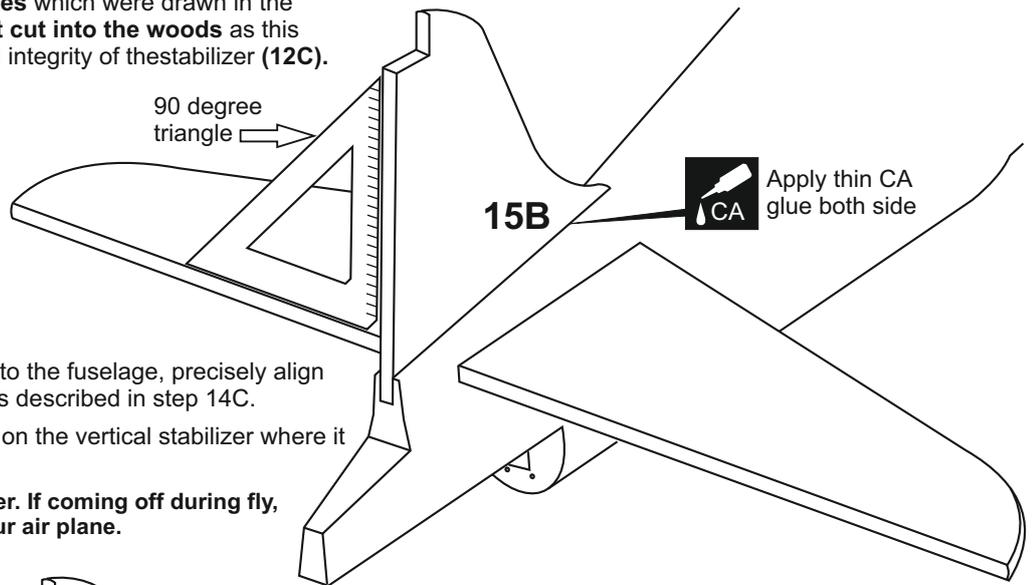


Cut away only the covering

Insert the vertical fin into the fuselage, precisely align the vertical stabilizer as described in step 14C.

15B Apply the thin CA glue on the vertical stabilizer where it contacts the fuselage.

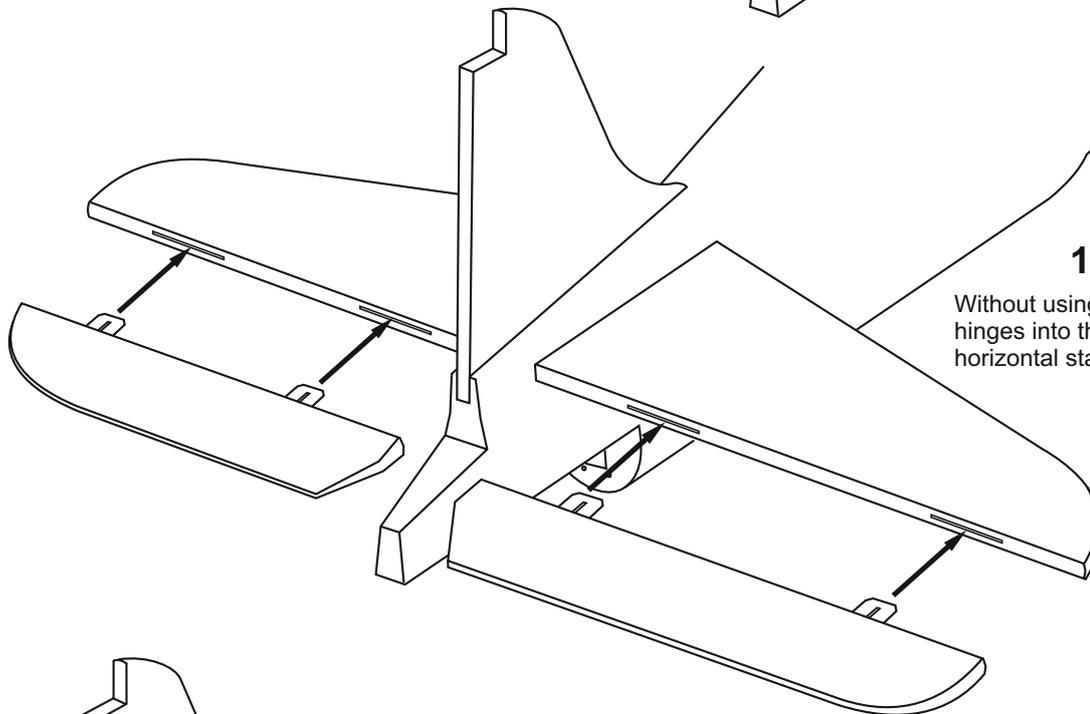
! Securely glue together. If coming off during fly, you lose control of your air plane.



90 degree triangle

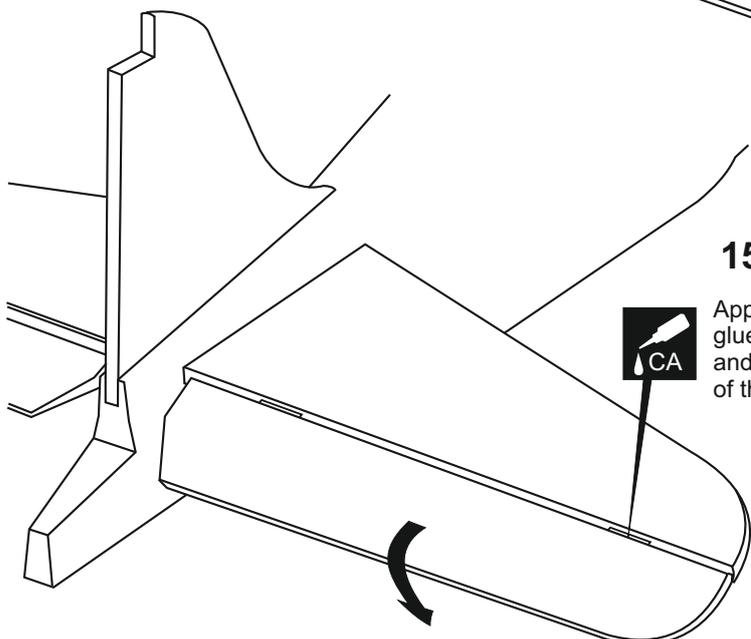
15B

Apply thin CA glue both side



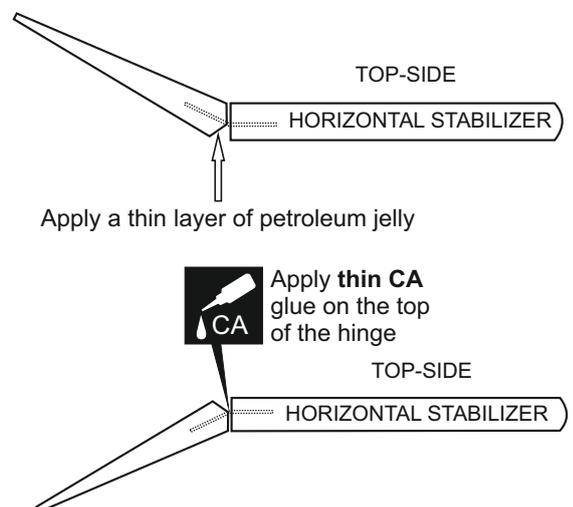
15C

Without using glue yet, push the elevator and its hinges into the hinge slots in trailing edge of the horizontal stabilizer (**13A**).



15D

Apply thin CA glue on the top and bottom of the hinge



TOP-SIDE

HORIZONTAL STABILIZER

Apply a thin layer of petroleum jelly

Apply thin CA glue on the top of the hinge

TOP-SIDE

HORIZONTAL STABILIZER

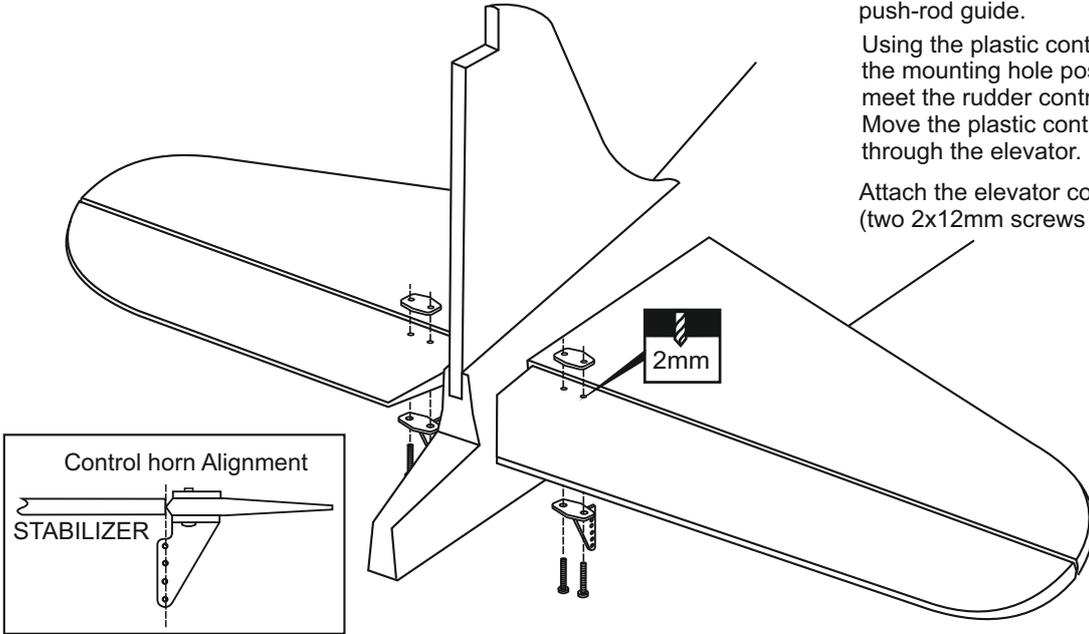
Do the same way with the bottom side of elevator and with the second elevator and rudder.

16- ELEVATOR CONTROL HORN

Push the elevator push-rod with clevis into the black nylon push-rod guide.

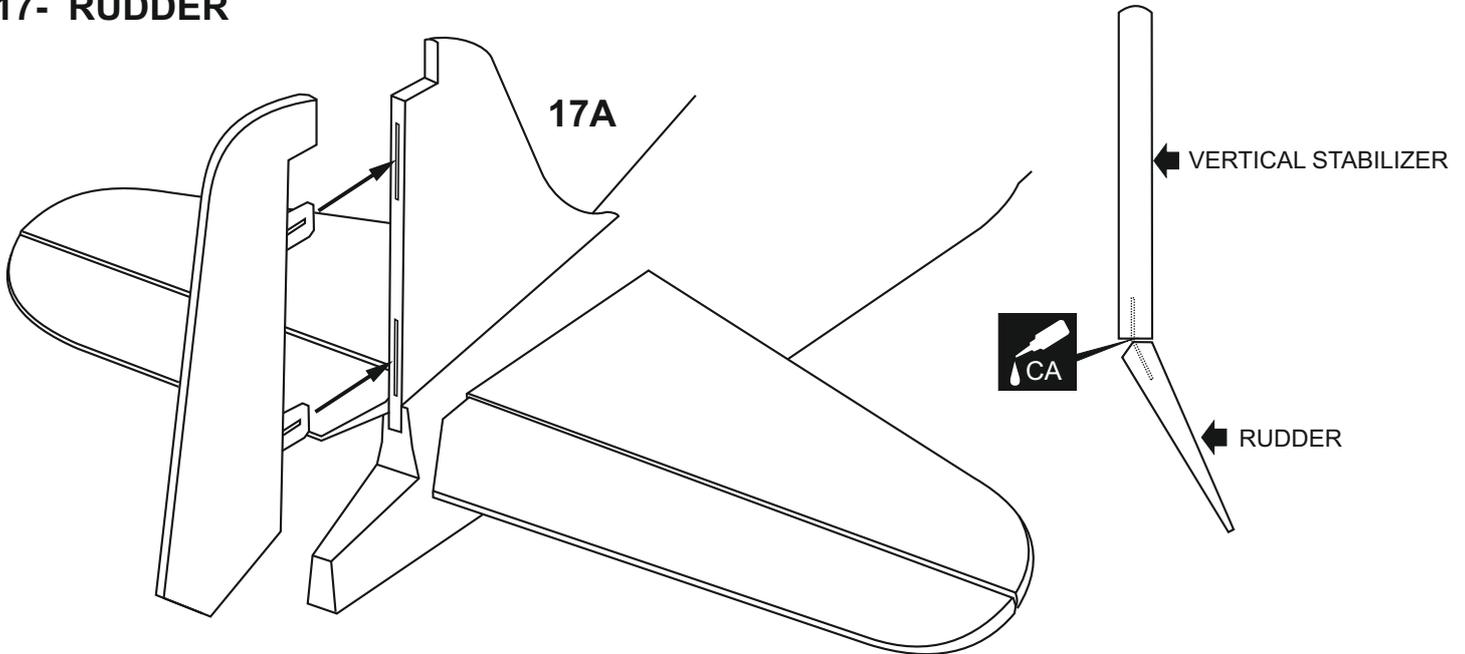
Using the plastic control horn as a template, mark the mounting hole positions, where the elevator clevis meet the rudder control horn with a felt tipped or a pencil. Move the plastic control horn and drill two 2mm holes through the elevator.

Attach the elevator control horn using the hardware provided (two 2x12mm screws and a back plate).



Plastic control horn	.....2
Plastic back plate	.....2
2x12mm screw	.....4

17- RUDDER



Push the rudder push-rod with clevis into the black nylon push-rod guide.

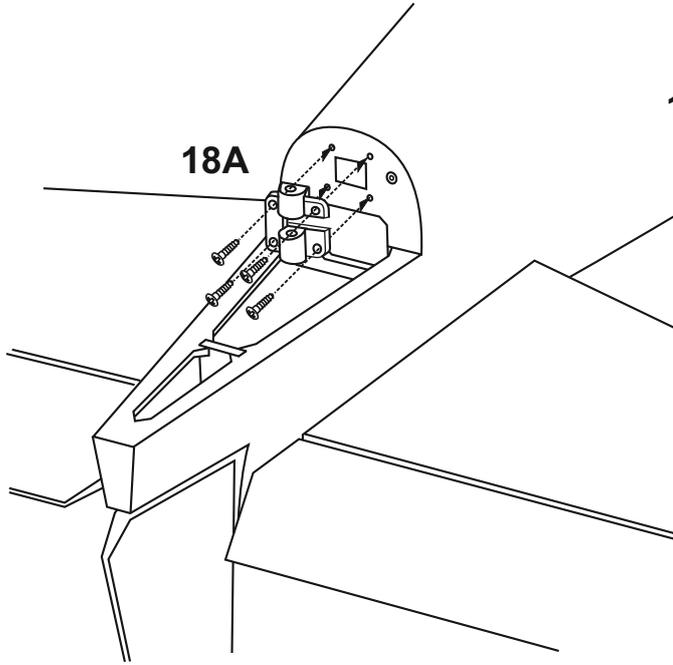
Using the plastic control horn as a template, mark the mounting hole positions, where the rudder clevis meet the rudder control horn with a felt tipped or a pencil.

Remove the control horn and drill two 2mm holes through the rudder .

Plastic control horn	.....1
Plastic back plate	.....1
2x12mm screw	.....2

Attach the rudder control horn using the hardware provided (two 2x15mm screws and a back plate).

18- TAIL WHEEL



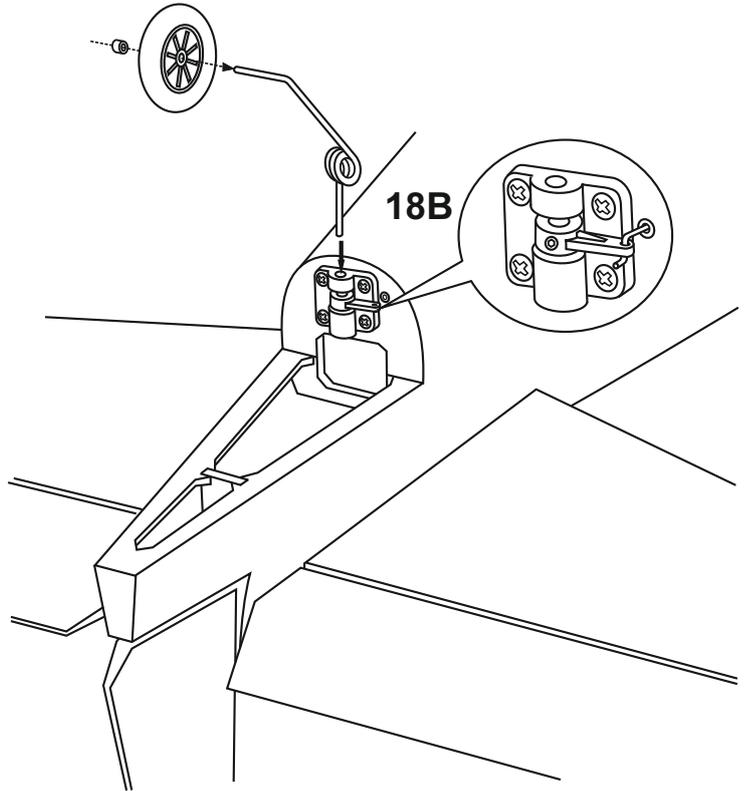
18B

Insert the tail wheel push-rod into the hole on the tail gear control horn (as show).

Install the tail wheel control horn in place.

Instal the tail wheel gear in place.

Secure the tail wheel control horn in place using a 2mm screw set, ensure smooth non-binding movement.



1.2x880mm rod

 1

3x3mm screw

 1

3x10mm screw

 4

Tail wheel control-horn

 1

2mm I.D collar

 1

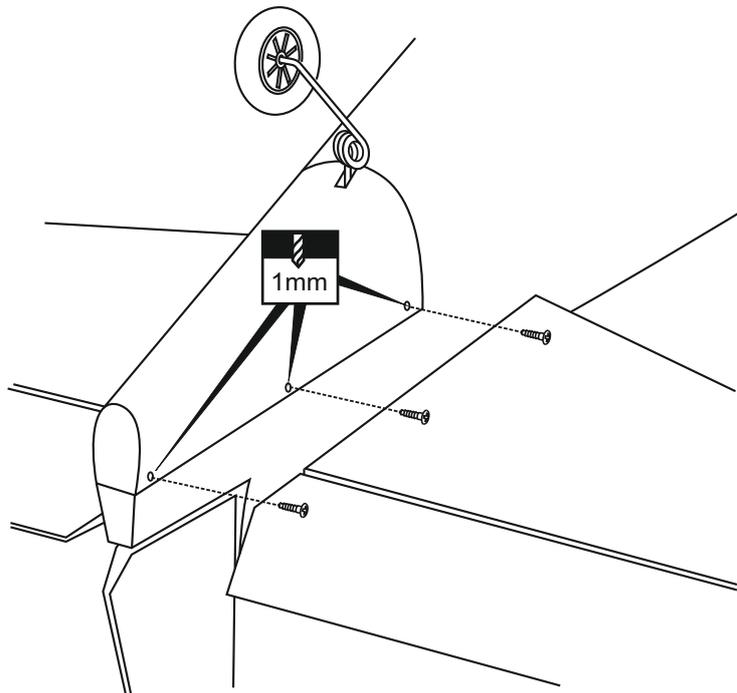
Tail landing gear

 1

25mm wheel

 1

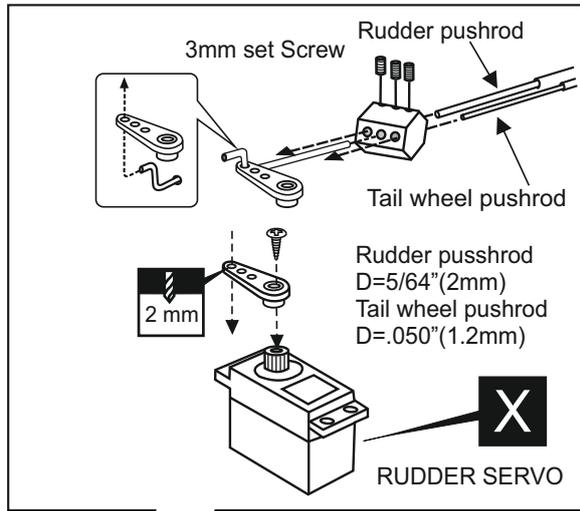
19- TAIL WHEEL COVER



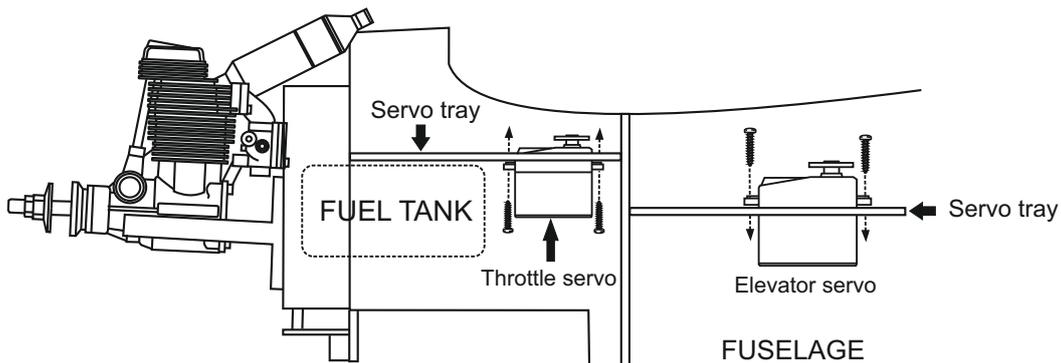
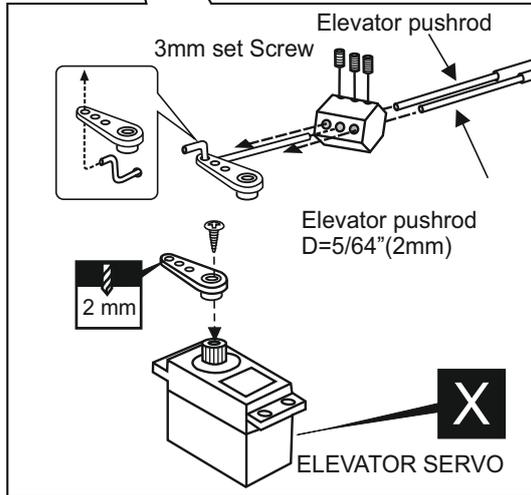
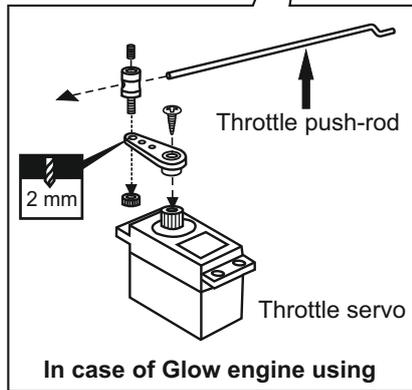
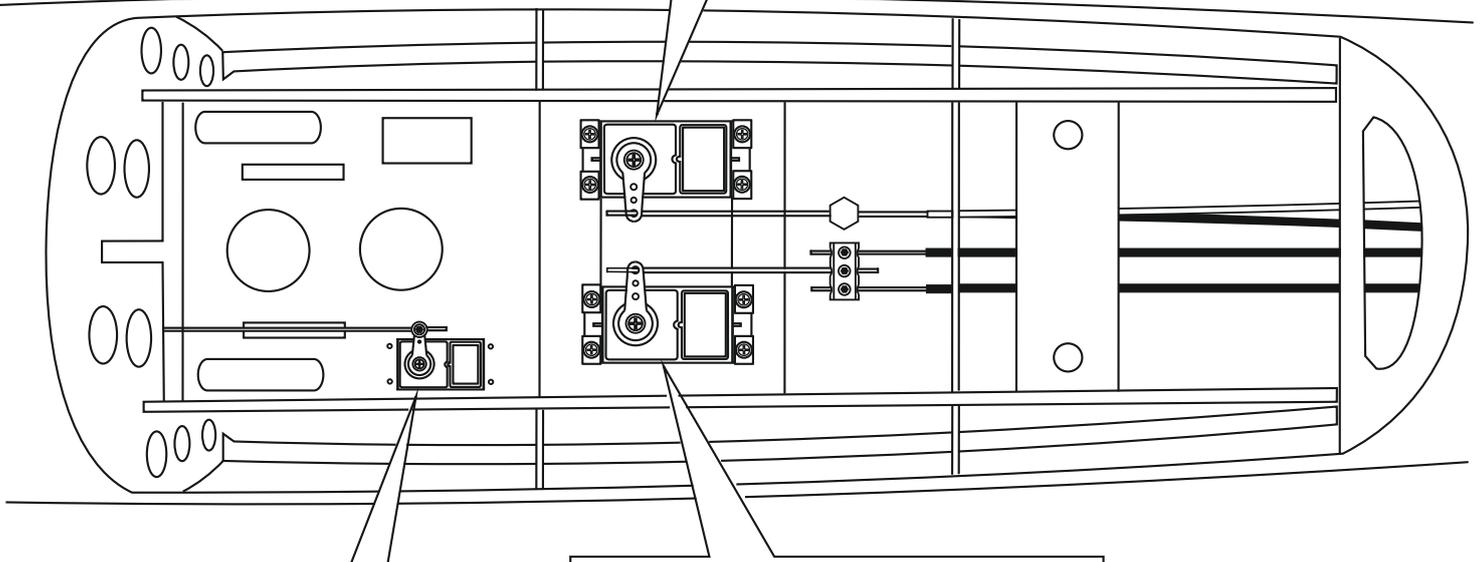
2x8mm screw

 6

20- LINKAGES

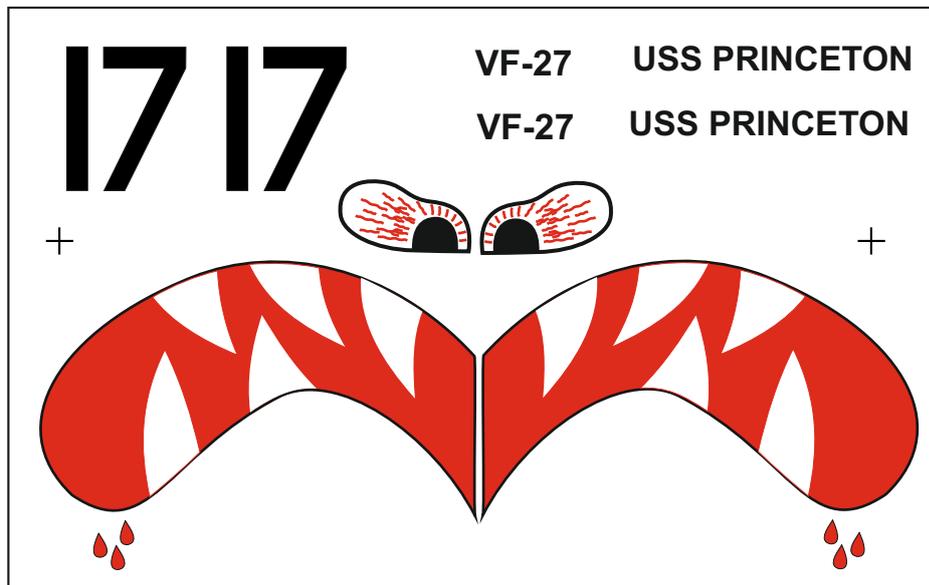


FUSELAGE - BOTTOM VIEW



Steel clevis	.....3
2x950mm rod	.....3
(2 x120mm) rod	.....2
(1.2 x500mm) throttle rod	.....1
Connector	.....2
2mm	.....1

21- COWLING



Note: Cut out the stickers and apply them in the proper area. Do not peel the backing paper off all at once.

Peel off one corner of the backing and cut off with scissors.

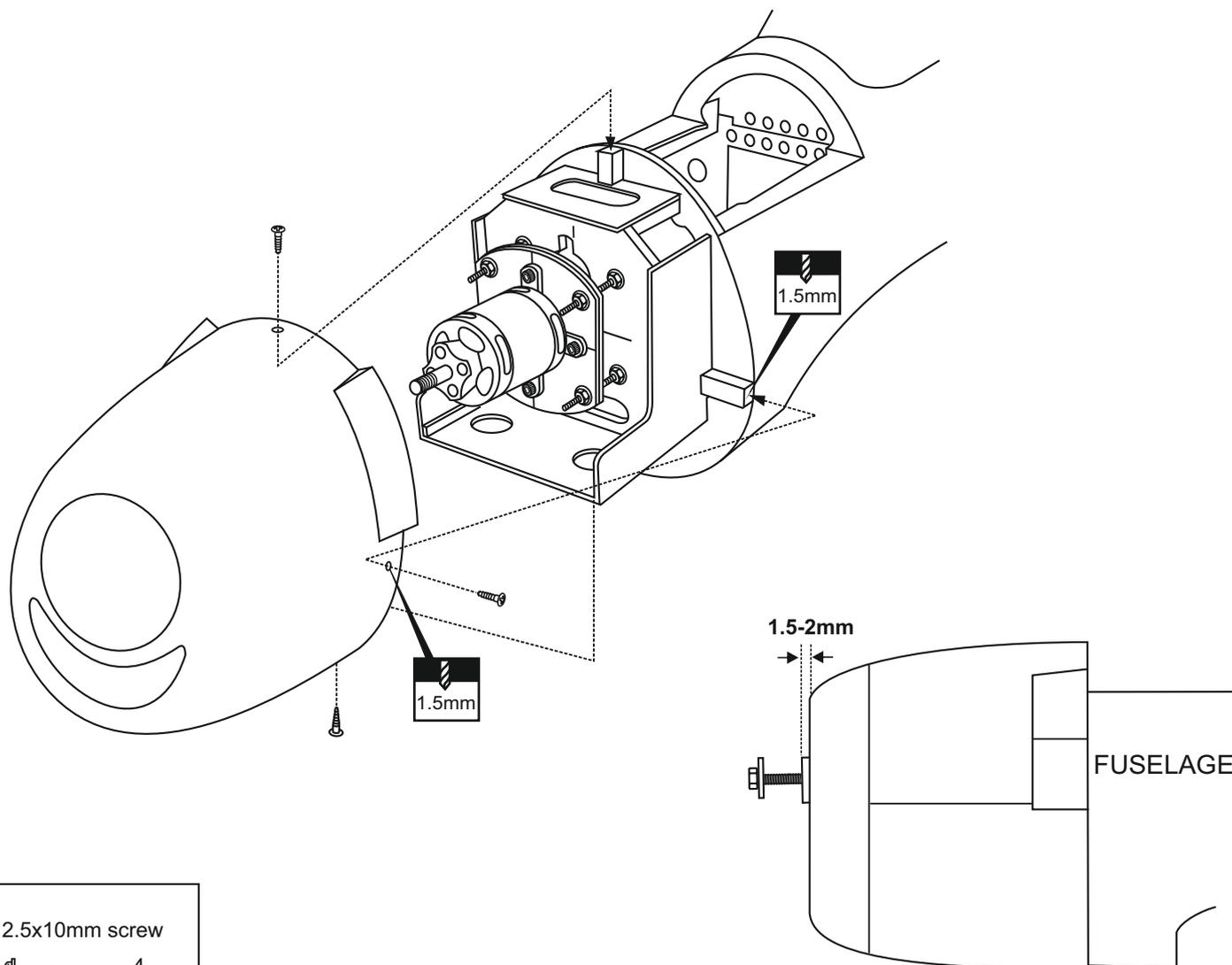
Arrange sticker on model and when satisfied adhere the corner without backing.

Carefully peel back the rest of the backing while at the same time adhering the rest of the sticker.

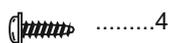
Try not to make air bubbles, if there are some, carefully puncture sticker (center of bubble) but not model surface with the tip of the knife or sharp pin and squeeze out the air.

At curves stretch sticker and apply a little heat so that no creases occur.

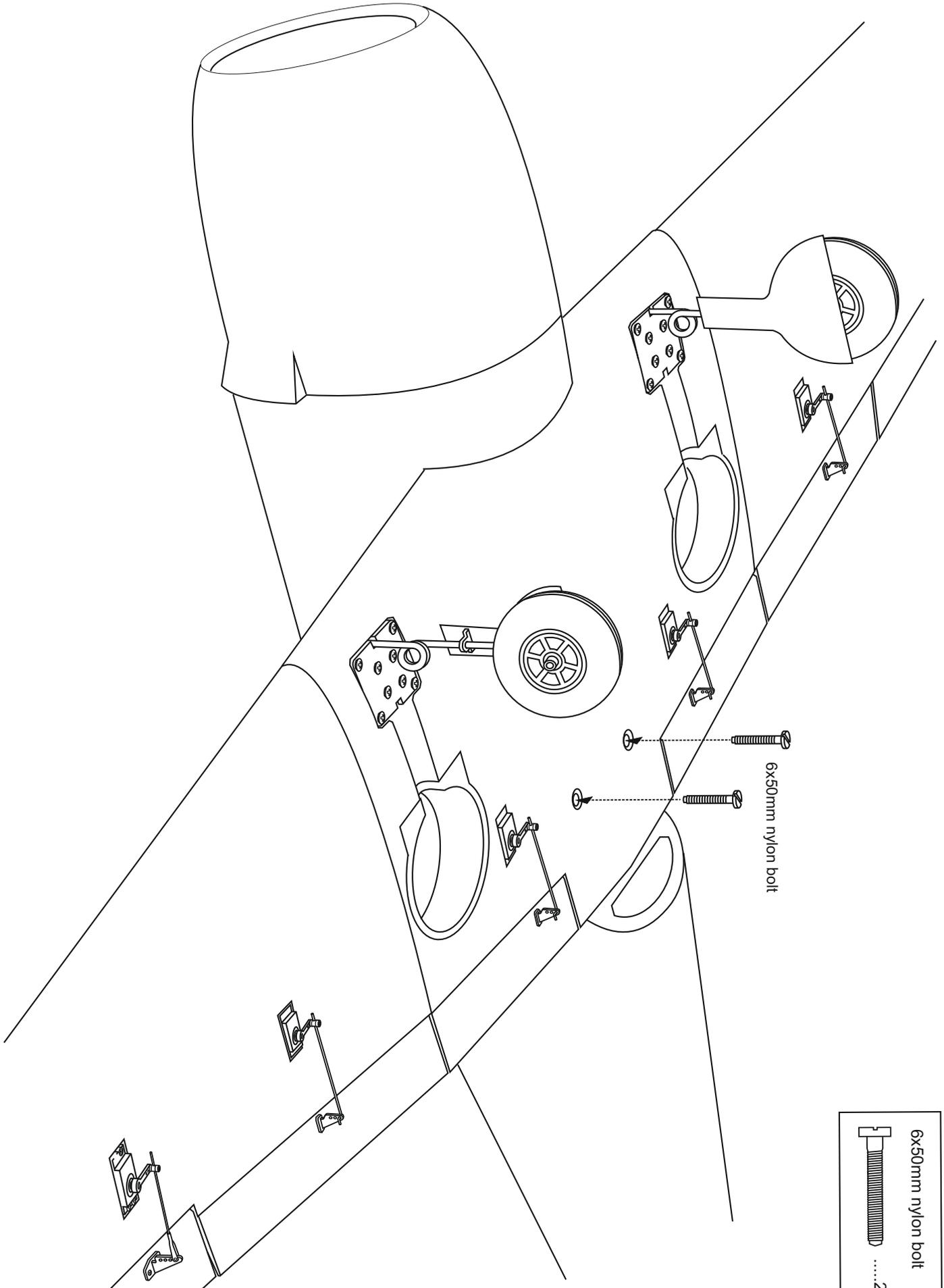
Cut off the excess that is produced.



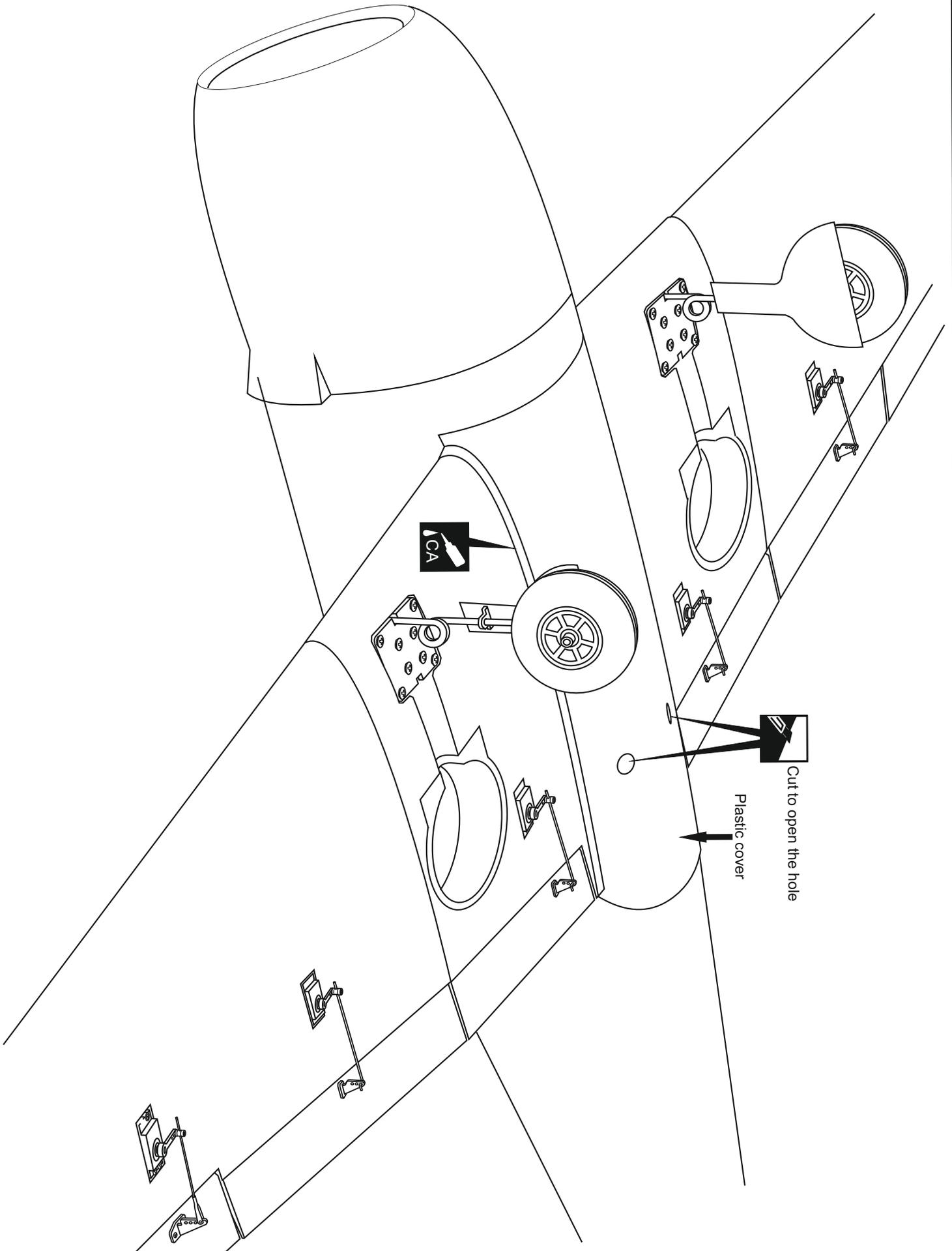
2.5x10mm screw



22- INSTALLING THE WING



23- INSTALLING THE BOTTOM COVER

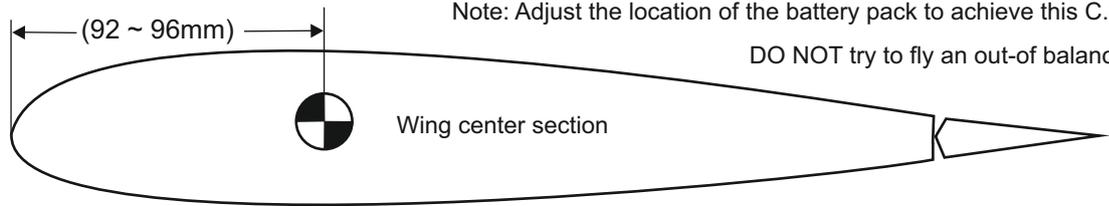


CA

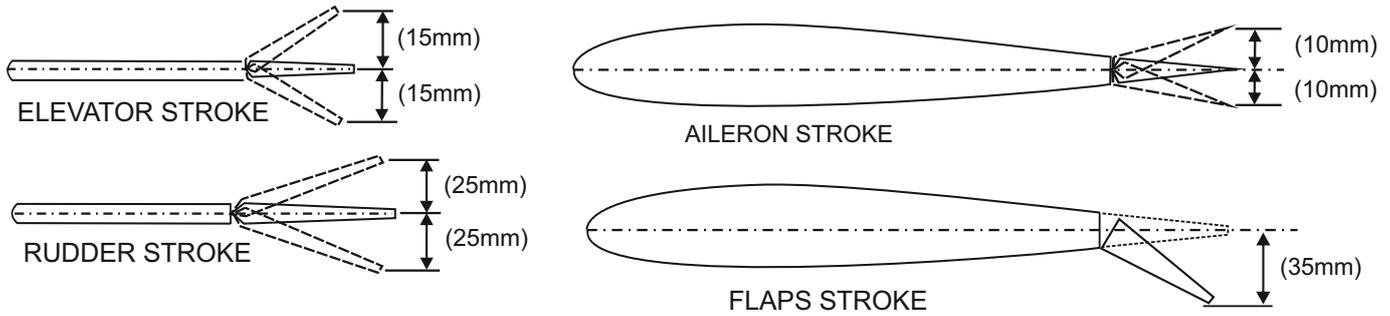
Cut to open the hole

Plastic cover

22-BALANCE



23-CONTROL SURFACE



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.

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.

