

Radio control model / Flugmodell

# U.S NAVY DIVE BOMBER

# SBD-5 DAUNTLESS



VQ No: VQA120

ALL Balsa, PLYWOOD CONSTRUCTION AND ALMOST READY TO FLY

## Instruction manual / Montageanleitung

### SPECIFICATIONS

Wingspan:.....1540mm (61.4in)  
Length:.....1060mm (46 in)  
Electric Motor:.....See next pager  
Glow Engine:......46 2-T / .70 4-T  
RTF Weight: 3.2Kg / 7.05lbs (Will vary with  
Equipment Used).  
Radio:.....7-8 Channel / 7-8 Servos  
Function: Ailerons-Elevator-Rudder-Throttle  
Flaps-Optional Retractable Landing Gear.

### TECHNISCHE DATEN

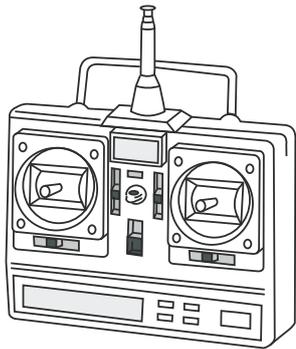
Spannweite:.....1540mm  
Länge:.....1060mm  
Elektroantrieb.....(siehe nächste Seite)  
Verbrennerantrieb:.....7.45cc - 11.5cc  
Fluggewicht:.....3.2Kg  
Fernsteuerung.....7-8 Kanal / 7-8 Servos



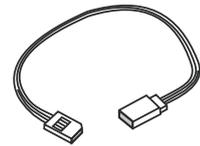
**WARNING!** This radio controlled model is NOT a toy. If modified or flown carelessly it could go out of control and cause serious human injury or property damage. Before flying your airplane, ensure the air field is spacious enough. Always fly it outdoors in safe areas and seek professional advice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

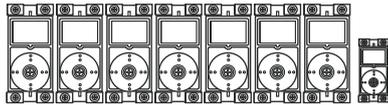
## REQUIRED FOR OPERATION (Purchase separately)



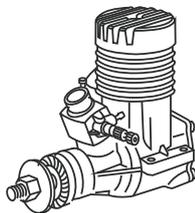
10.5x6 for .40 - 2 cycle engine  
 11x6 for .46 - 2 cycle engine  
 12x6 for .60 - 4 cycle engine  
 12x7 for .70 - 4 cycle engine  
 13x7 - 13x8 for electric motor



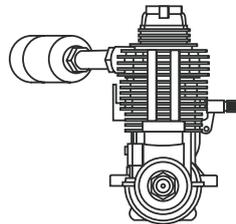
Extension cord for aileron servos: 50cm(x2)  
 Extension cord for flap servos: 50cm(x2)  
 Extension cord for retract servos: 30cm(x2)  
 Extension cord for Rx battery pack: 20cm(x1)



Minimum 7 channel radio with 7 (6 for EP) standard servos and one servo mini.  
 .Motor control x1(for GP) .Elevator x1  
 .Rudder x1. Aileron x2. R-L Flap x2  
 .Center flap x1mini



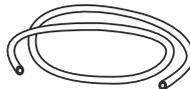
.46 ~ .50 - 2 cycle



.60 ~ .70 - 4 cycle



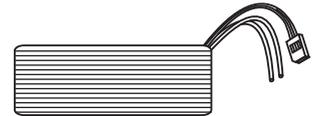
700-800W Brushless Motor



Silicone tube



Spinner hub

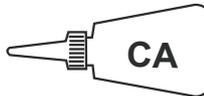


5 cell 4500mAh LiPo battery

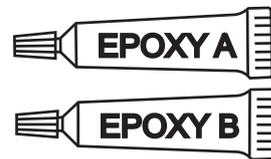
## GLUE (Purchase separately)



Silicon sealer

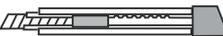


Cyanoacrylate Glue (thin type)



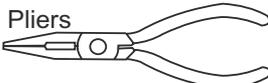
Epoxy Glue (30 minute type)

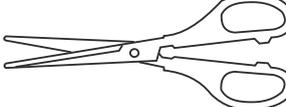
## TOLLS REQUIRED (Purchase separately)

Hobby knife 

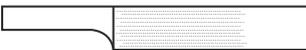
Phillip screw driver 

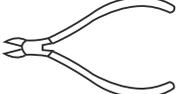
Hex Wrench 

Needle nose Pliers 

Scissors 

Awl 

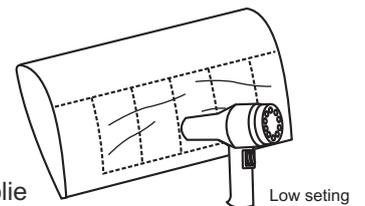
Sander 

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 !



Low setting

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"	

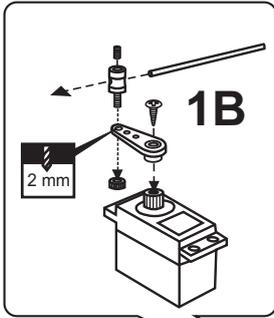
# 1-WING

## 1A

BOTTOM-VIEW

Control horn

.....1

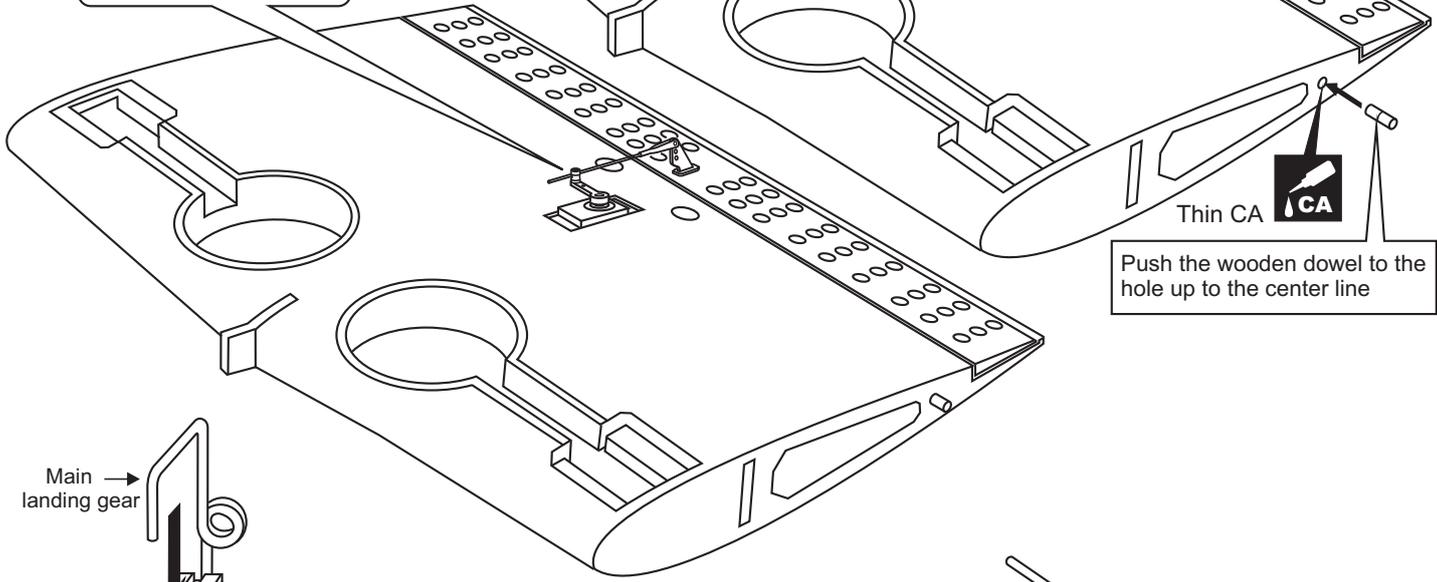


Center flap servo

Thin CA

Thin CA

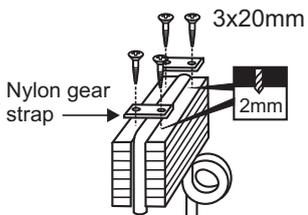
Push the wooden dowel to the hole up to the center line



Main landing gear

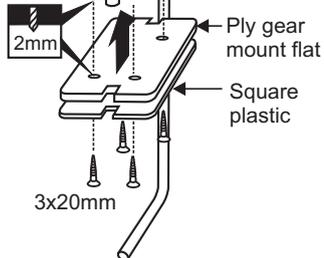
Gear mount

## 1C



## 1D

## 1E



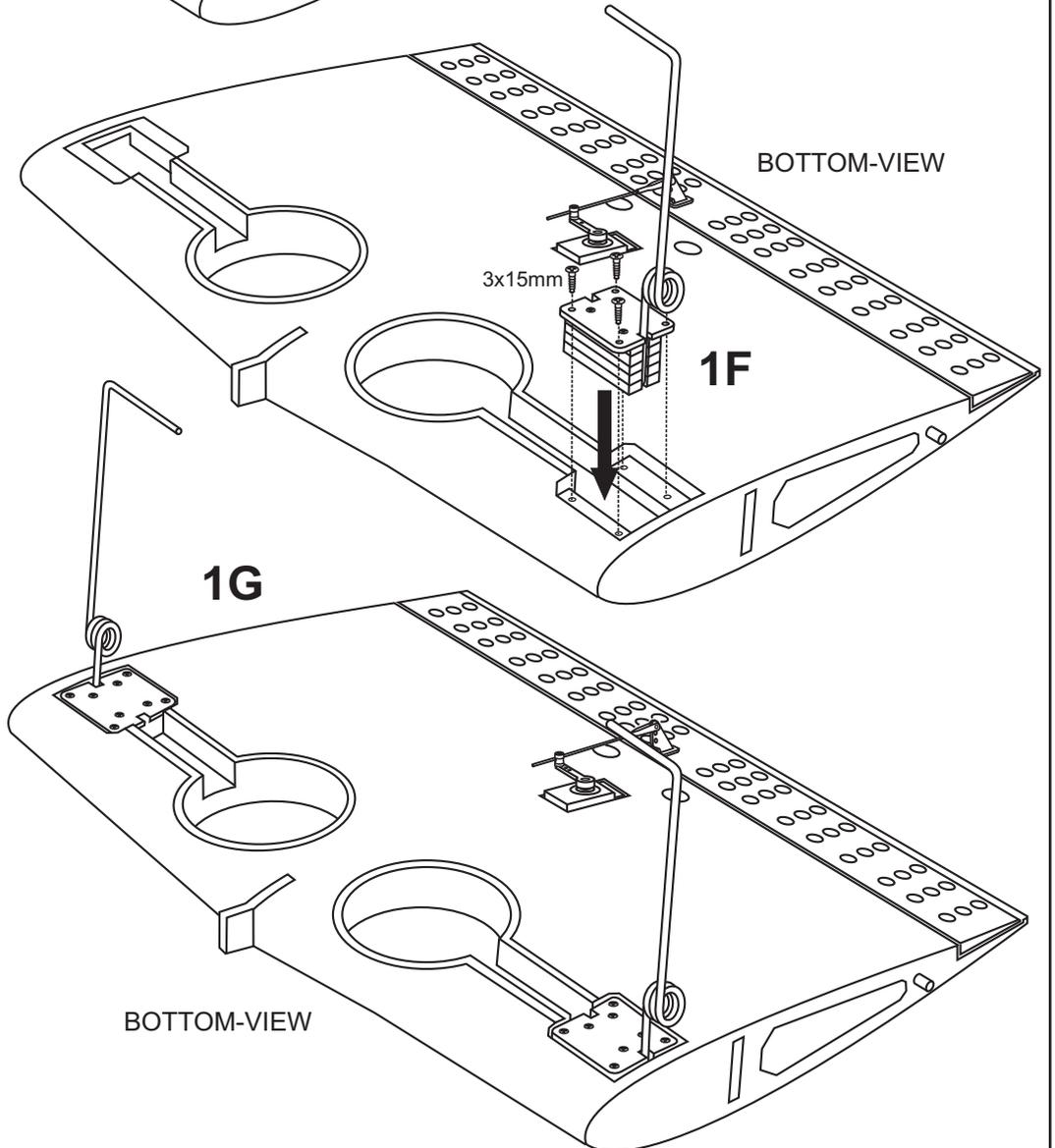
BOTTOM-VIEW

3x15mm

## 1F

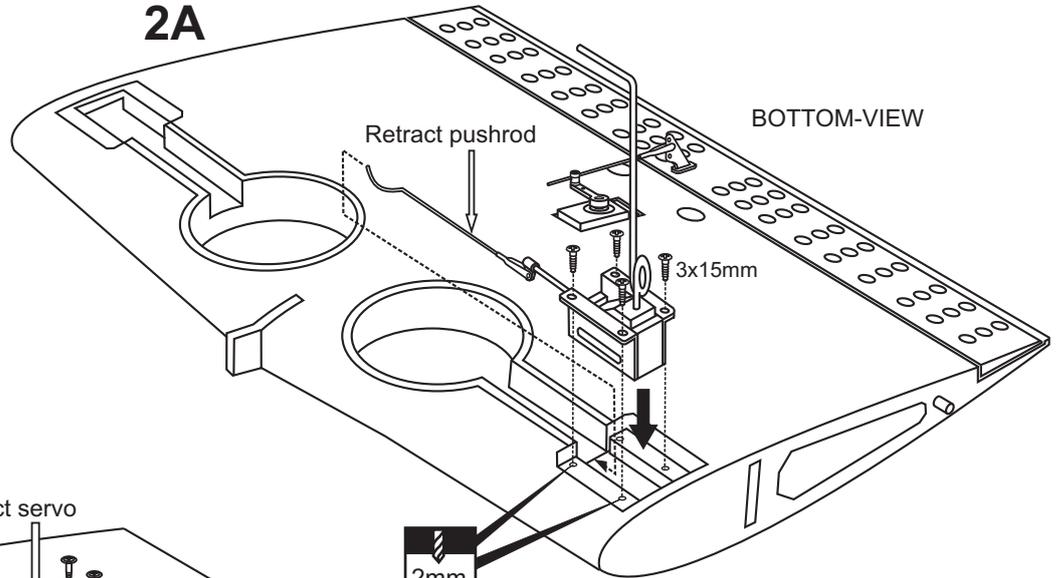
## 1G

BOTTOM-VIEW



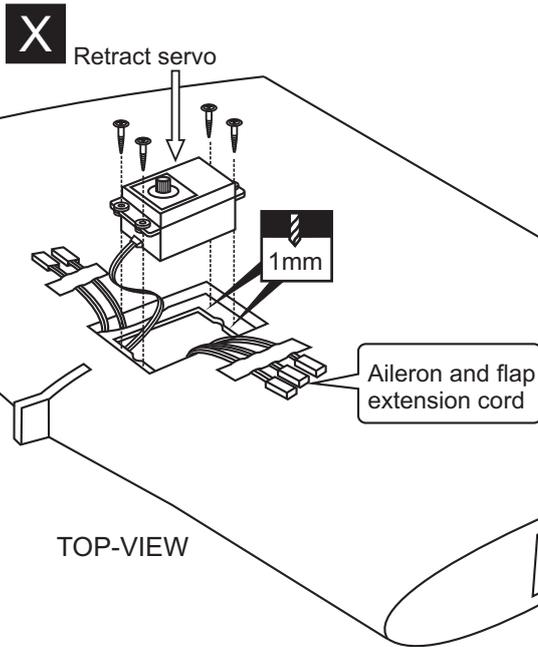
# 2-WING

## 2A



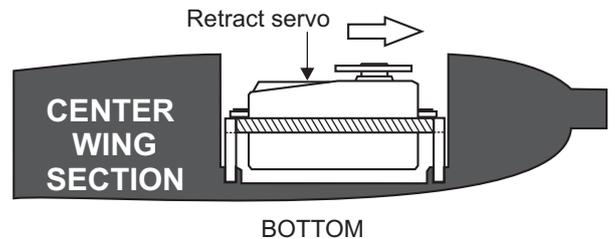
Install the retract servo onto the retract servo mount and secure it in place with four screw (included with radio set).

## 2B



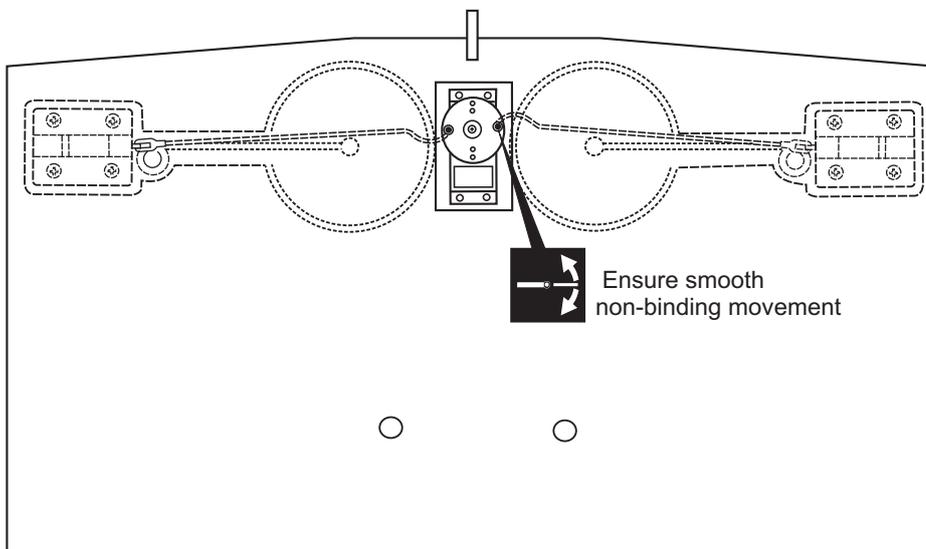
### RETRACT SERVO INSTALLATION

Note: The head of servo should be positioned toward the front of the wing.

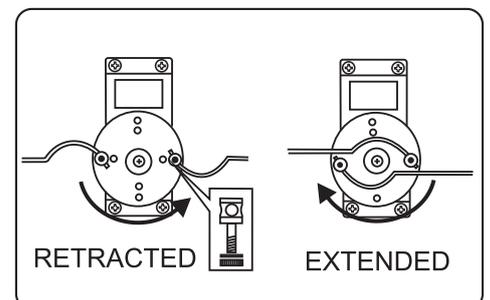


## 2C

### CENTER WING - TOP VIEW



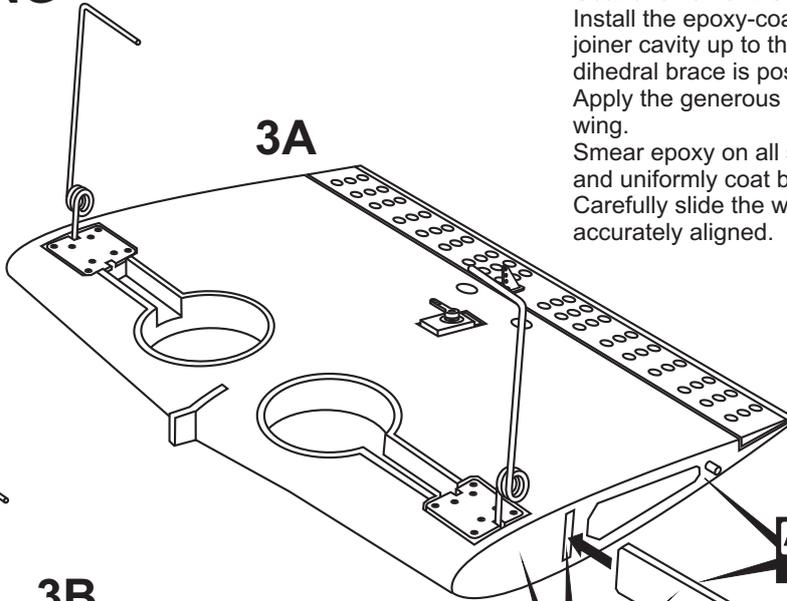
Link the servo and retract gear arm with push rod.  
Be sure to adjust the stroke so that the landing gear locks in both up and down position.



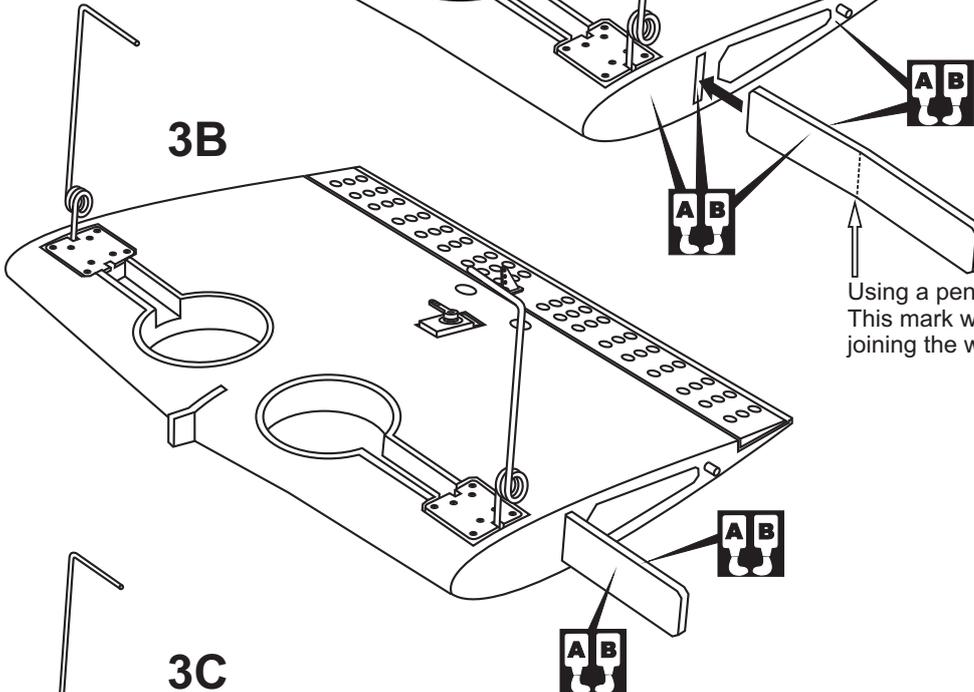
# 3-WING

Coat one half of the dihedral brace with epoxy up to the center line. Install the epoxy-coated side of the dihedral brace into the wing joiner cavity up to the center line, making sure that the "V" of the dihedral brace is positioned correctly. Apply the generous amount of epoxy into the wing cavity of the center wing. Smear epoxy on all sides of the exposed area of the dihedral brace and uniformly coat both wing roots with epoxy. Carefully slide the wing halves together, ensuring that they are accurately aligned.

3A

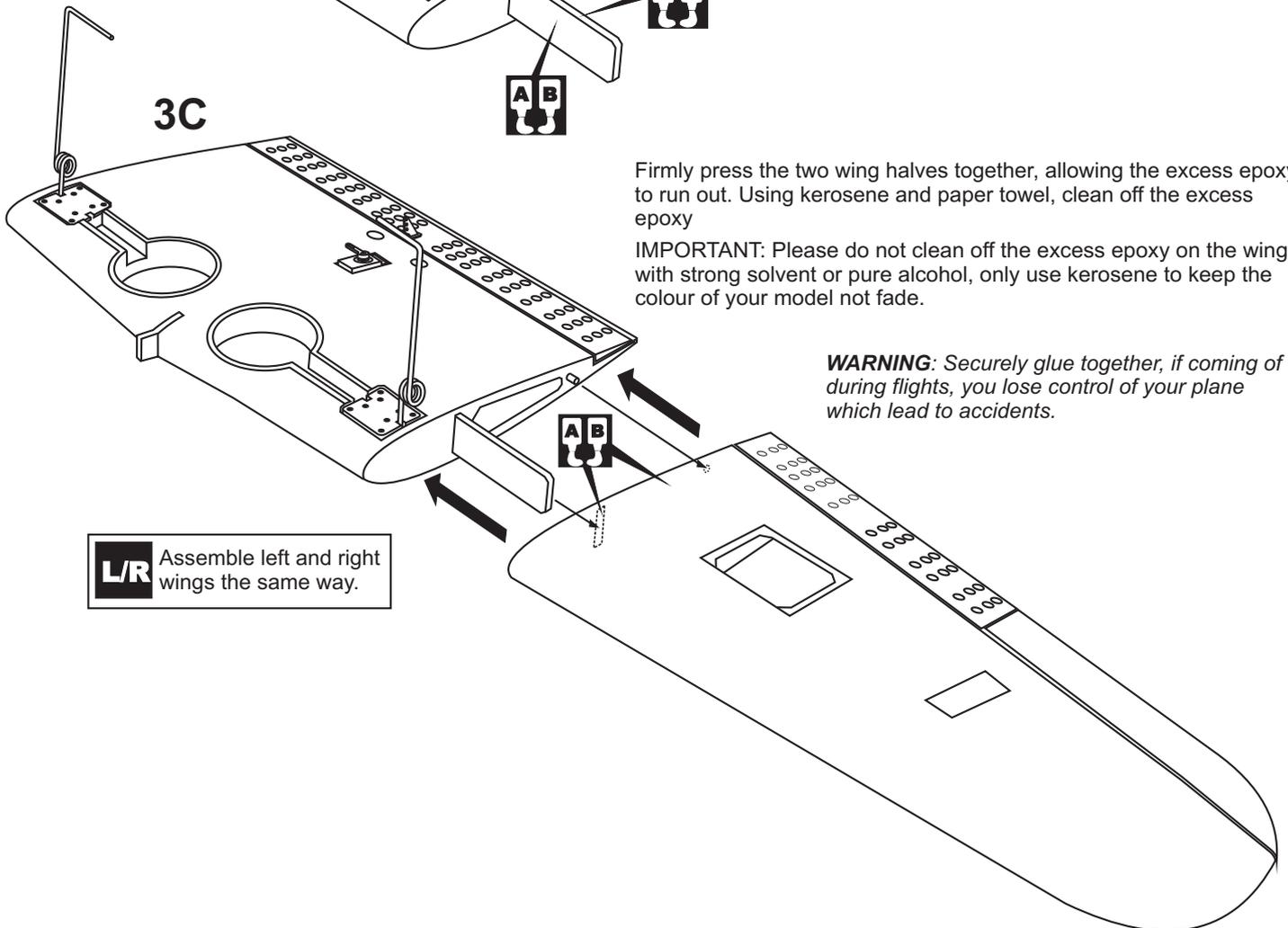


3B



Using a pencil, mark the center of the brace. This mark will serve as the center line when joining the wing halves.

3C



Firmly press the two wing halves together, allowing the excess epoxy to run out. Using kerosene and paper towel, clean off the excess epoxy

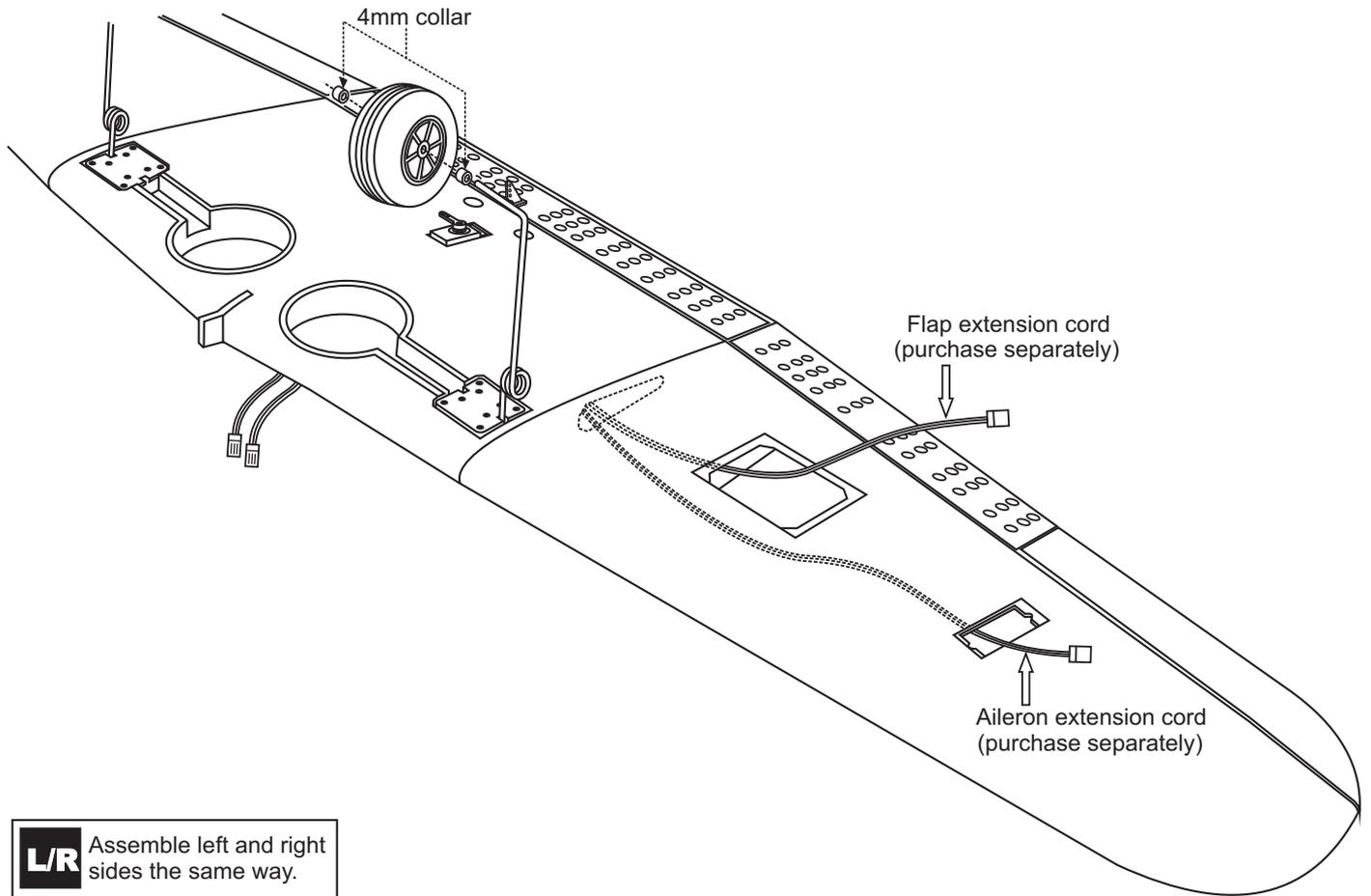
IMPORTANT: Please do not clean off the excess epoxy on the wing with strong solvent or pure alcohol, only use kerosene to keep the colour of your model not fade.

**WARNING:** Securely glue together, if coming of during flights, you lose control of your plane which lead to accidents.

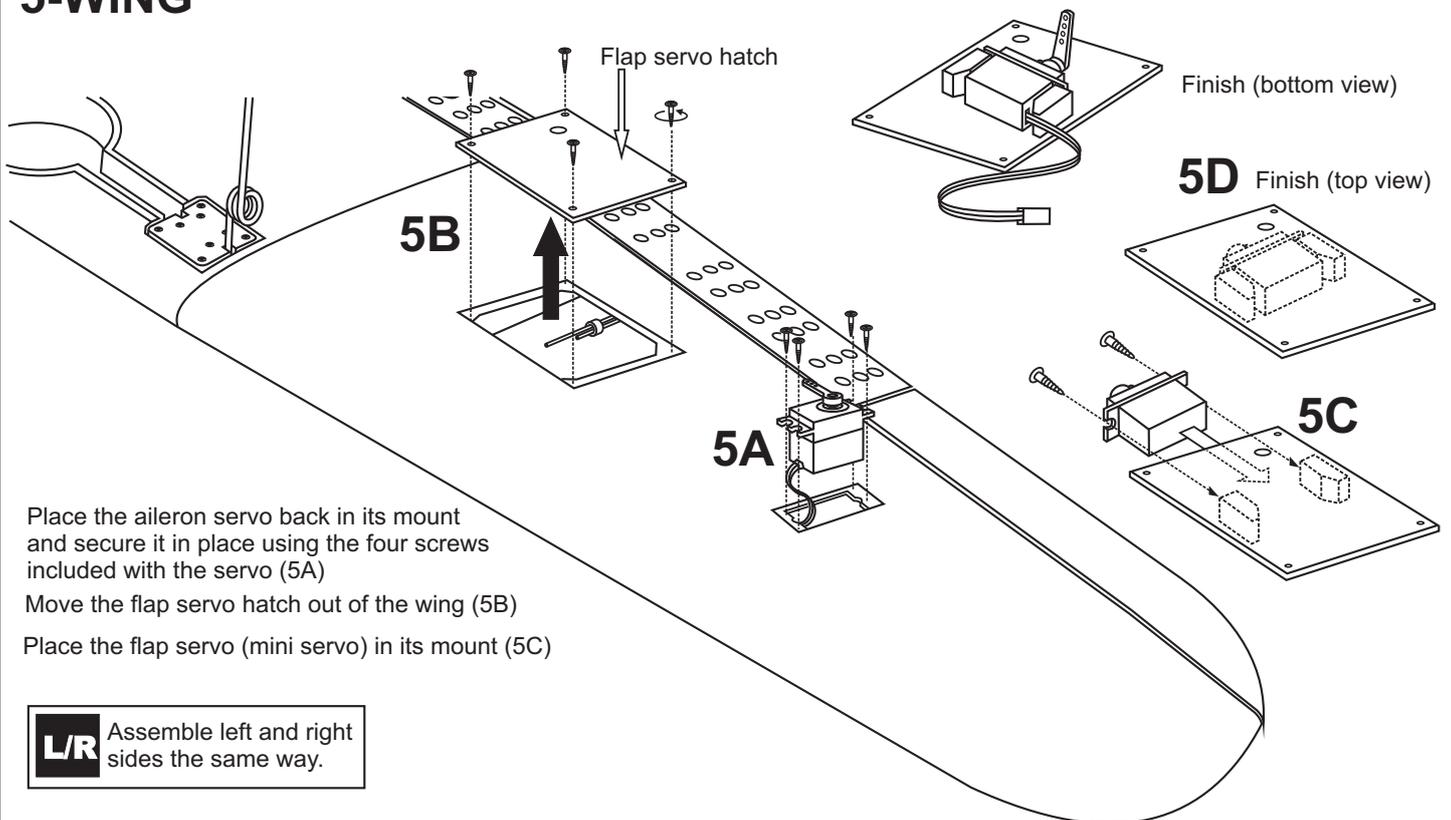
L/R

Assemble left and right wings the same way.

## 4-WING



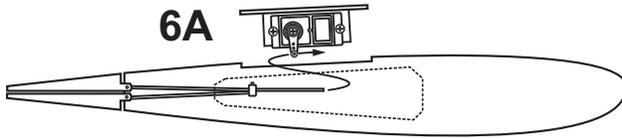
## 5-WING



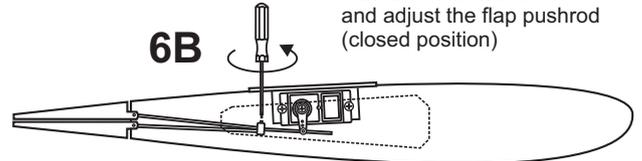
## 6-WING

Slide the flap push-rod to the hole of the connector on the servo arm.

6A

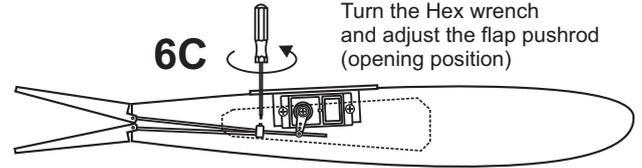


6B



Turn the Hex wrench and adjust the flap pushrod (closed position)

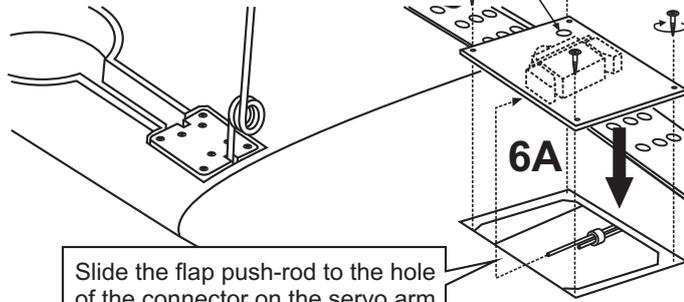
6C



Turn the Hex wrench and adjust the flap pushrod (opening position)

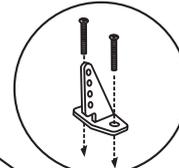
**L/R** Assemble left and right sides the same way.

The hole for flap adjust

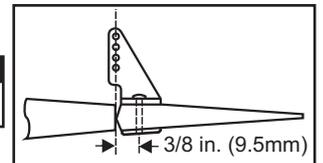


Slide the flap push-rod to the hole of the connector on the servo arm.

6A

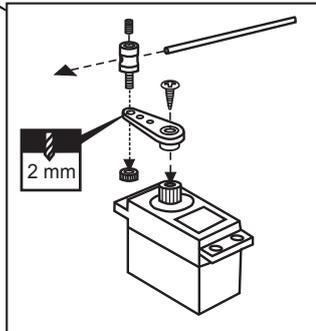


The vertical portion of the control horn must be positioned so it is centered over the hinge line



2mm

6D



2mm

- .....2
- Aileron push rod .....2
- 2x20mm screw .....2
- Plastic control horn .....4
- Connector .....2
- 2mm .....4

## 7-ENGINE

Turn the black plastic screw on both side of the fuselage to pull the canopy hatch out of the fuselage (7A)

Cut the wood along the line as shown (7B) 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.

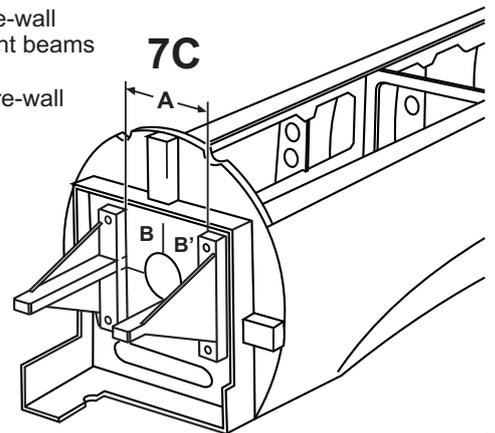
Secure the engine mount beams onto the fire-wall with litter CA glue (7C)

**! 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(7C)

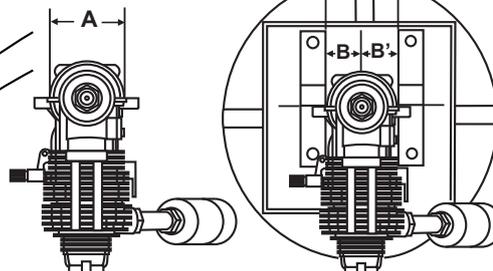
Carefully remove the engine mount beams and drill a 6mm hole through the fire-wall at each of the four marks made above (7D)

7C

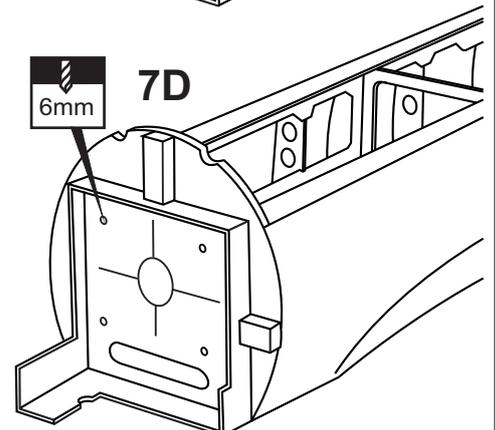


FRONT-VIEW

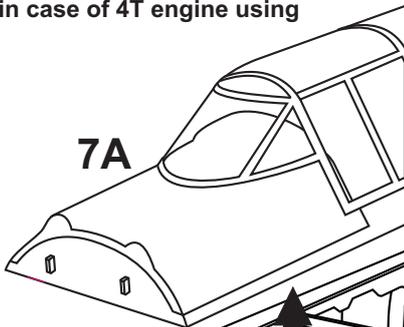
B=B'



6mm 7D



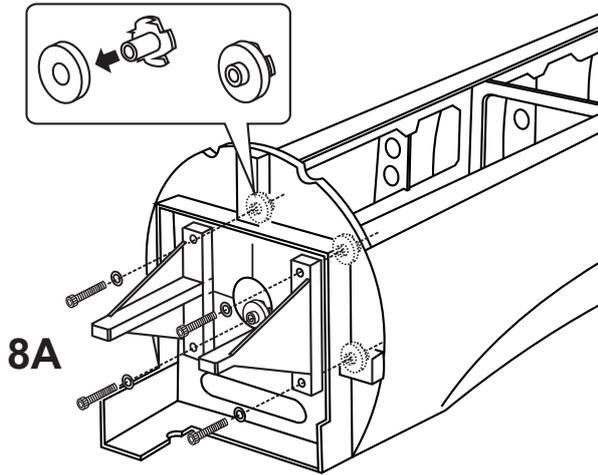
7A



7B



# 8-ENGINE



8A

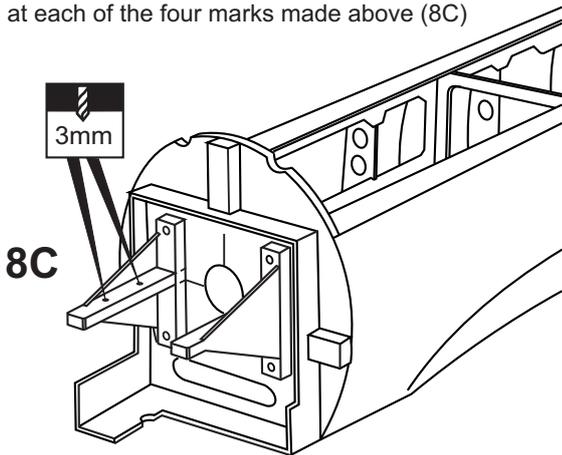
Insert the blind-nut with the wooden washer onto each of the four holes made above.

Reposition the engine mount beams on to the fire-wall and secure them with four 4x25mm screw (8A)

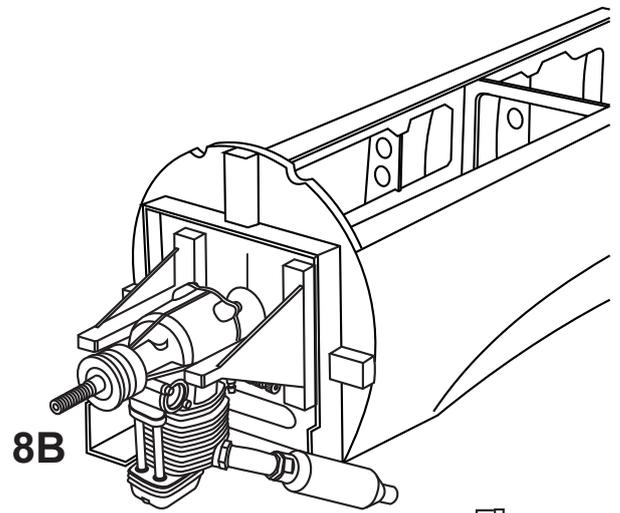
Position the engine to the engine mounts so the distance from the prop hub to the fire-wall is 110-115mm.

Mark the engine mounting plate where the four holes are to be drilled (8B)

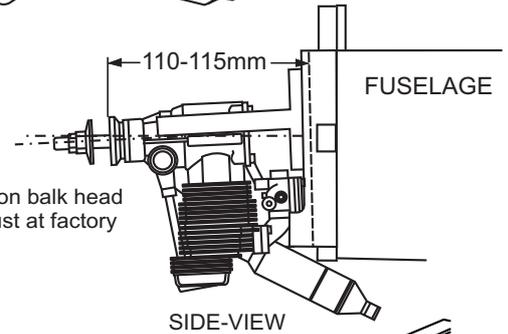
Remove the engine and drill a 3mm holes through the beam at each of the four marks made above (8C)



8C



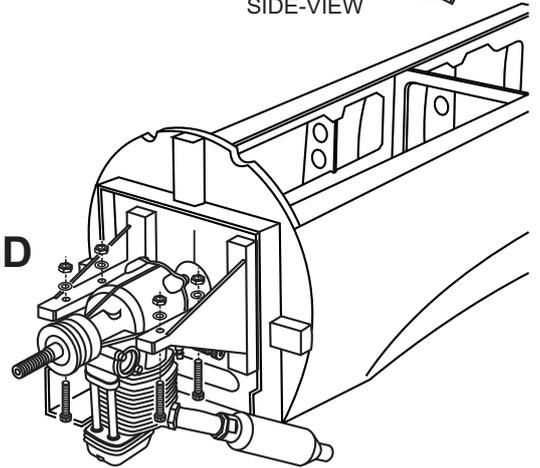
8B



SIDE-VIEW

! Engine thrust on balk head is already adjust at factory

8D



Reposition the engine on the engine mount beams, aligning it with the holes. Secure the engine to the engine mount using four 3x25mm screws (8D)

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

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

- |              |        |
|--------------|--------|
| 3x25mm screw | .....4 |
| Washer       | .....4 |

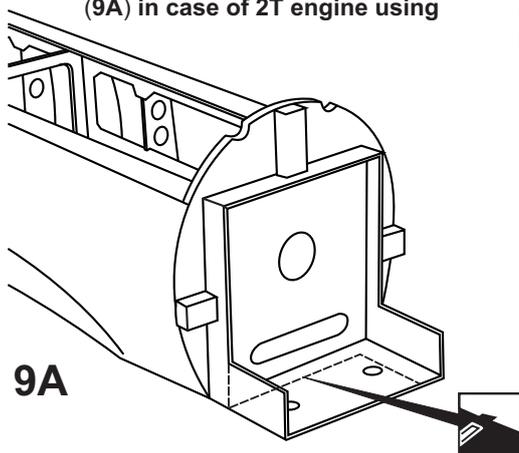
# 9-ENGINE

Cut the wood along the line as shown (9A) in case of 2T engine using

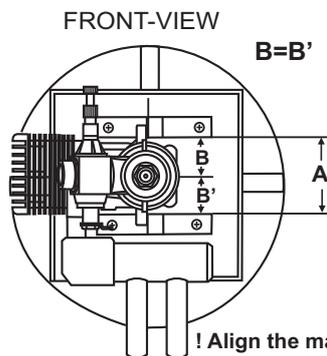
Attach the engine mount beams onto the fire-wall so the distance between of two engine mount beams is "A", and B=B' as show.

Secure the engine mount beams onto the fire-wall with litter CA glue (9B)

Using a pencil or felt tipped pen, mark the fire wall where the four holes are to be drilled(9B)

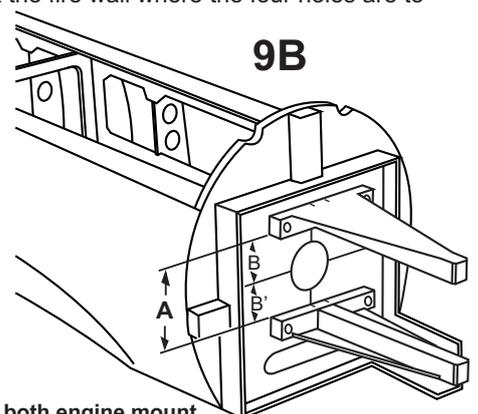


9A



FRONT-VIEW

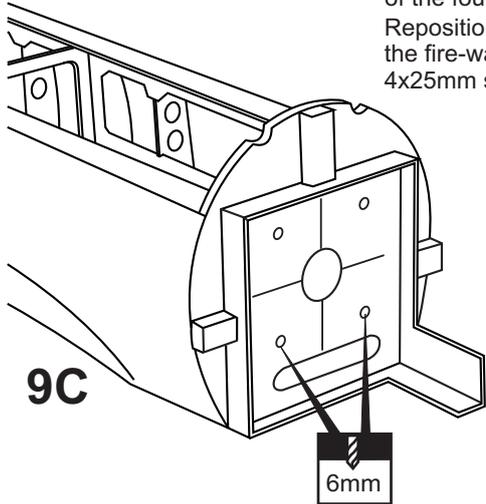
B=B'



9B

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

Insert the blind-nut with the wooden washer onto each of the four holes make above.  
 Reposition the engine mount beams on to the fire-wall and secure them with four 4x25mm screw (9D)



9C

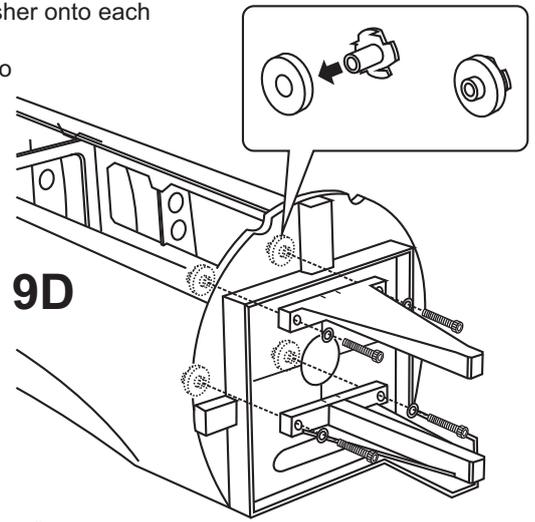
6mm

Carefully remove the engine mount beams and drill a 6mm hole through the fire-wall at each of the four marks made above (9C)

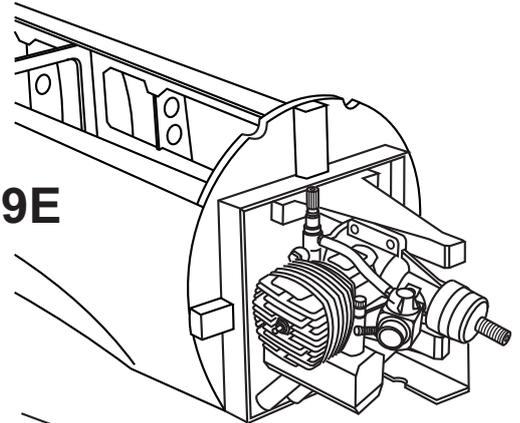
Position the engine to the engine mounts so the distance from the prop hub to the fire-wall is 110-115mm. Mark the engine mounting plate where the four holes are to be drilled (9E)

Remove the engine and drill a 3mm holes through the beam at each of the four marks made above (9F)

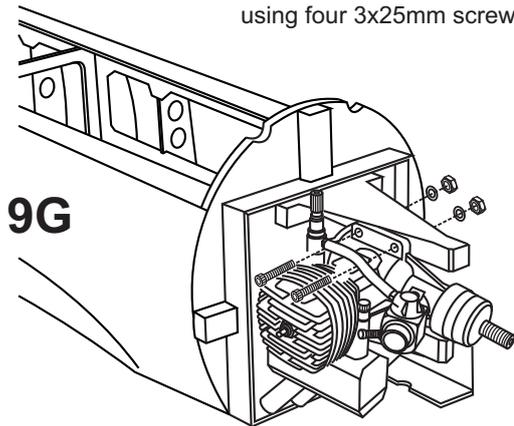
Reposition the engine on the engine mount beams, aligning it with the holes. Secure the engine to the engine mount using four 3x25mm screws (9G)



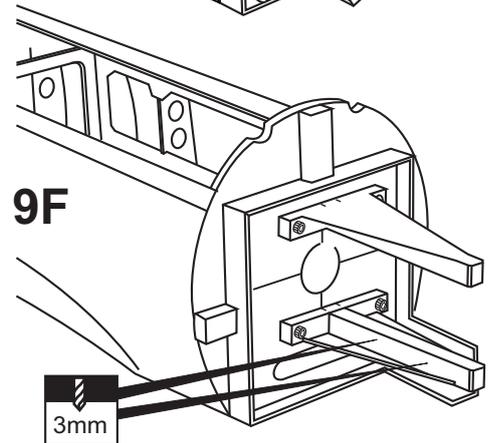
9D



9E



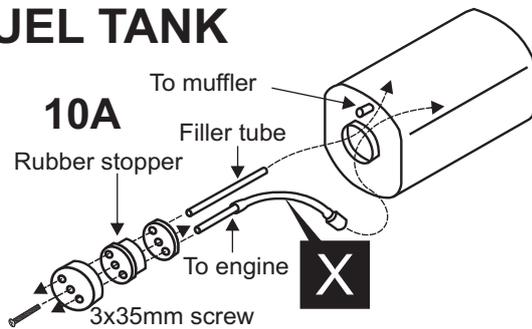
9G



9F

3mm

## 10-FUEL TANK



10A

To muffler

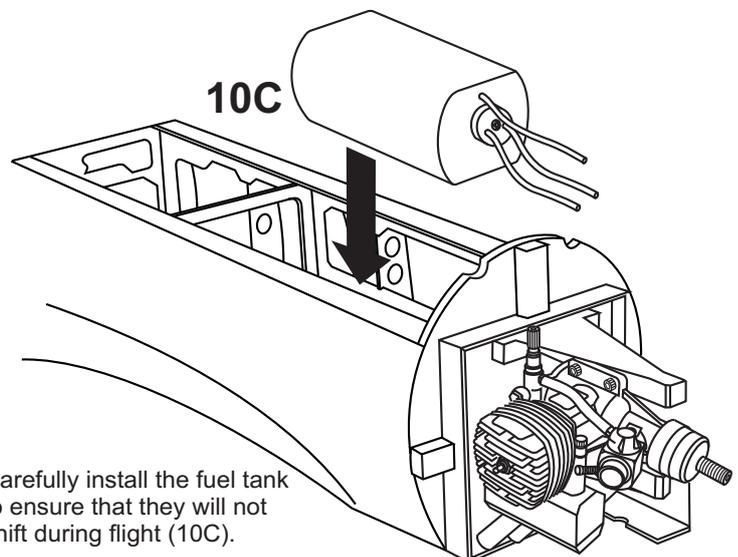
Filler tube

Rubber stopper

To engine

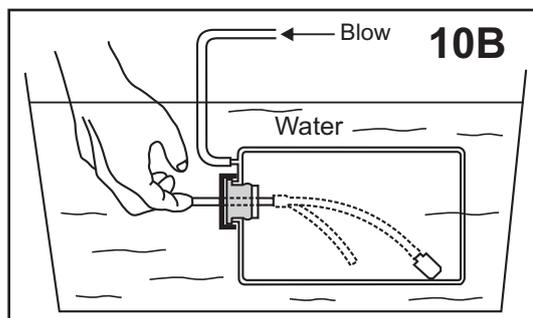
3x35mm screw

X



10C

Carefully install the fuel tank to ensure that they will not shift during flight (10C).



10B

Blow

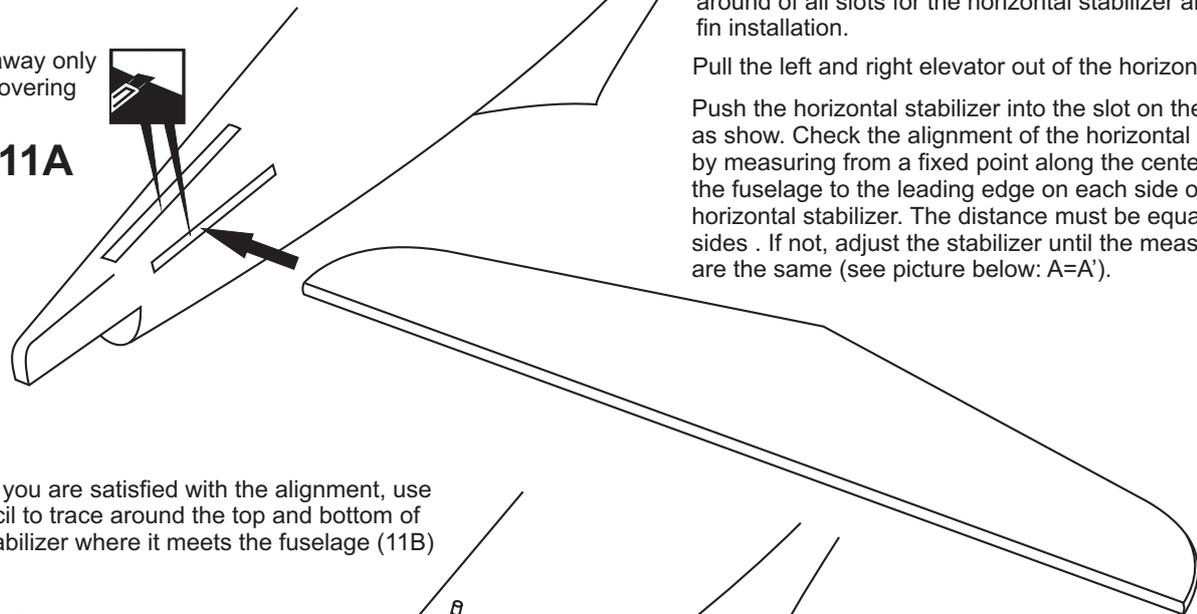
Water

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 (10B).

# 11-HORIZONTAL STABILIZER

Cut away only the covering

11A



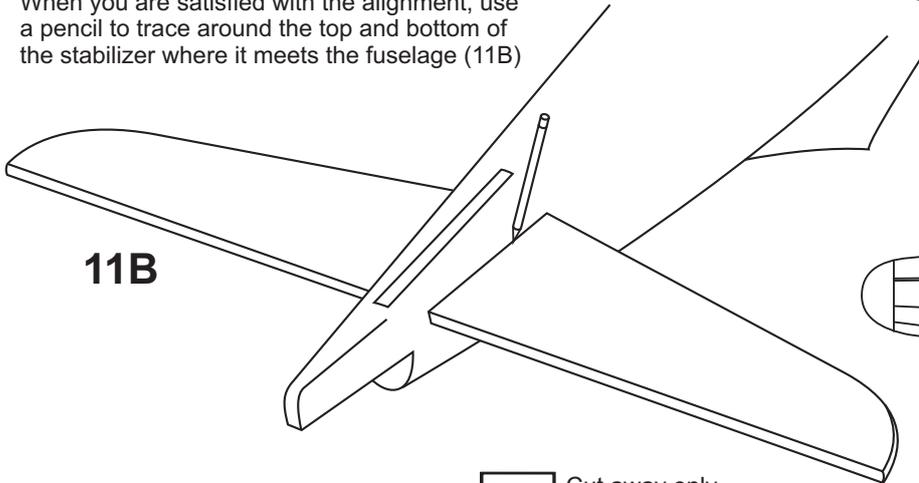
Using a sharp hobby knife, carefully cut away the covering around of all slots for the horizontal stabilizer and vertical fin installation.

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

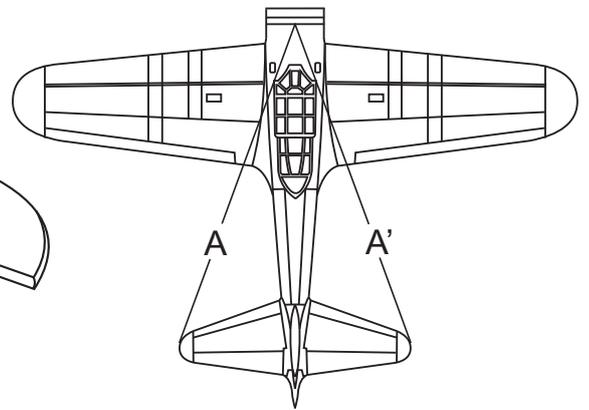
Push the horizontal stabilizer into the slot on the fuselage as show. Check the alignment of the horizontal stabilizer by measuring from a fixed point along the center line of the fuselage to the leading edge on each side of the horizontal stabilizer. The distance must be equal on both sides. If not,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

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 (11B)

11B

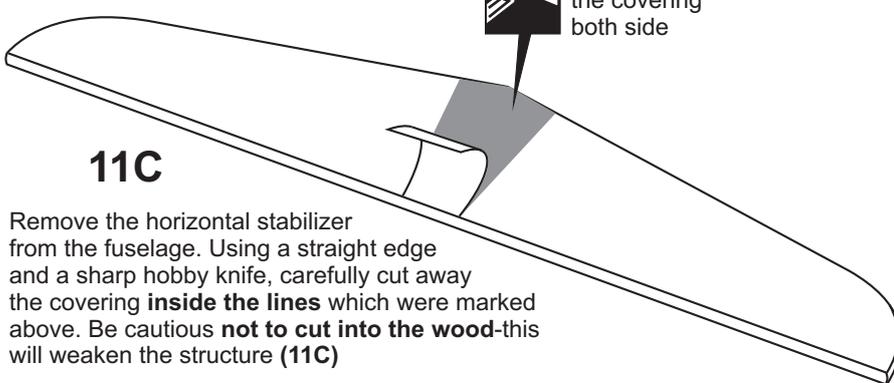


$A = A'$



Cut away only the covering both side

11C



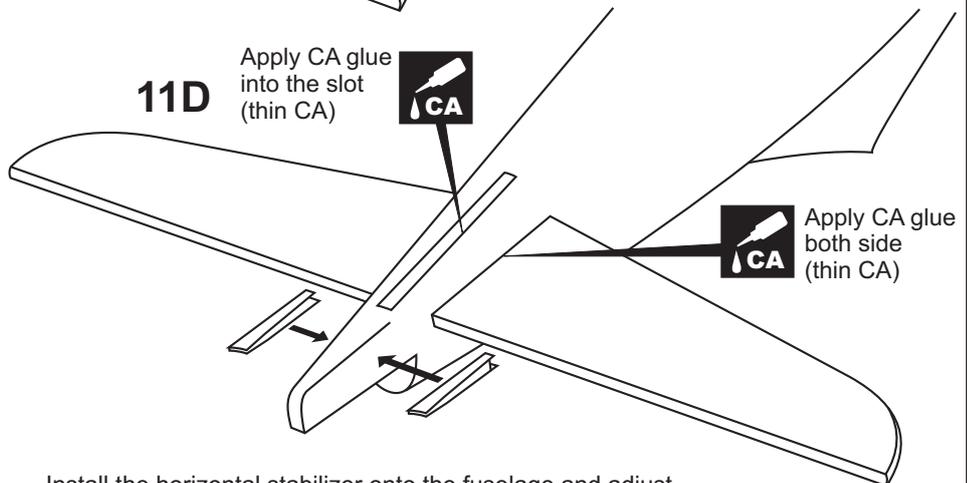
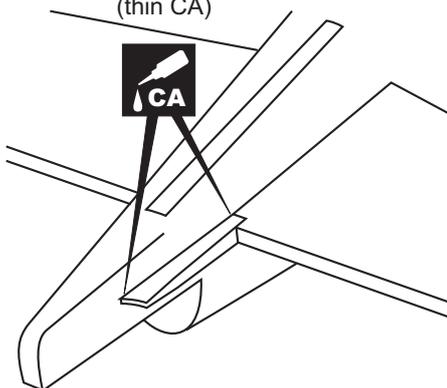
Remove the horizontal stabilizer from the fuselage. Using a straight edge and a sharp hobby knife, carefully cut away the covering **inside the lines** which were marked above. Be cautious **not to cut into the wood**-this will weaken the structure (11C)

11D

Apply CA glue into the slot (thin CA)



Apply CA glue both side (thin CA)



Apply CA glue both side (thin CA)



Install the horizontal stabilizer onto the fuselage and adjust the alignment as described in steep 11A.

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 (11D).

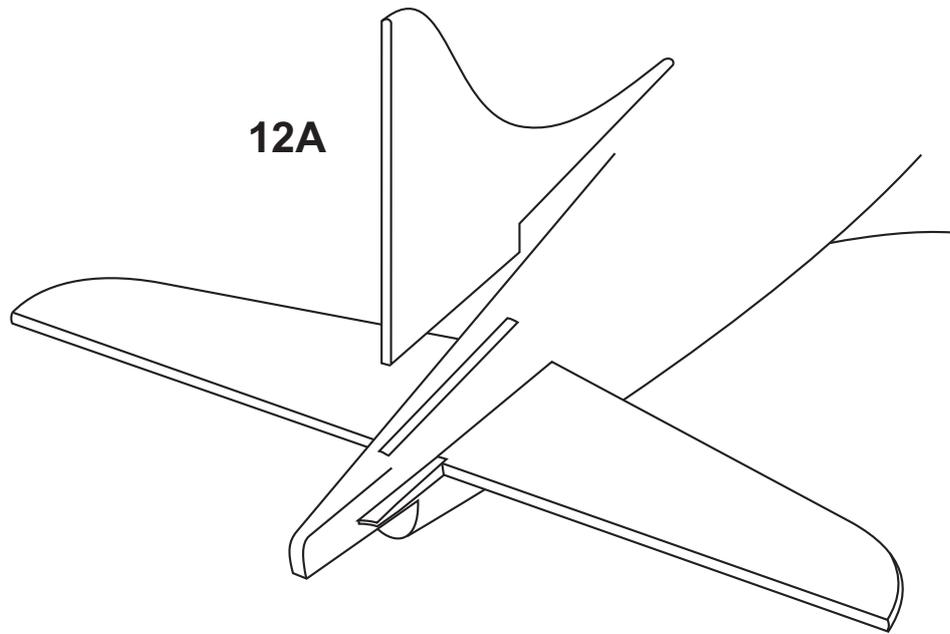
**! Securely glue together. If coming off during fly, you lose control of your air plane.**

# 12-VERTICAL STABILIZER

Pull the rudder out of the vertical fin.

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

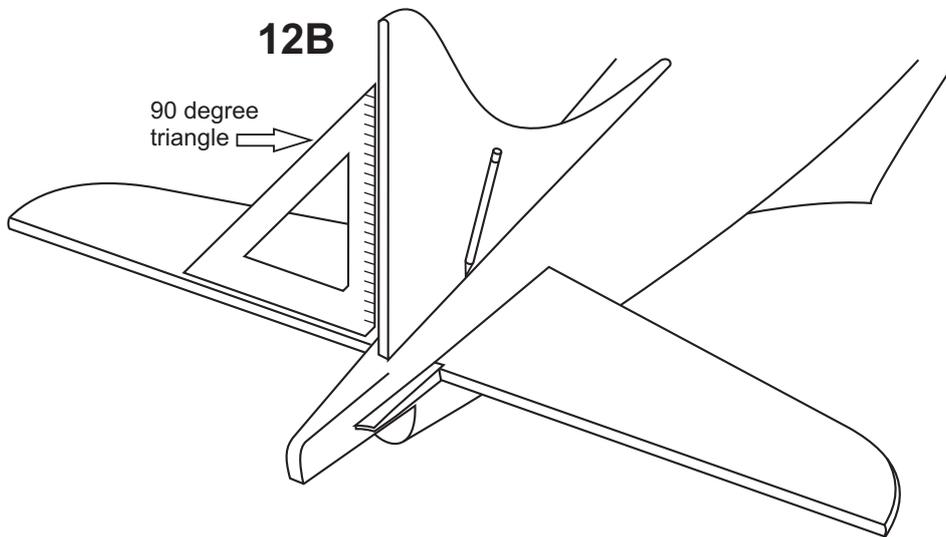
12A



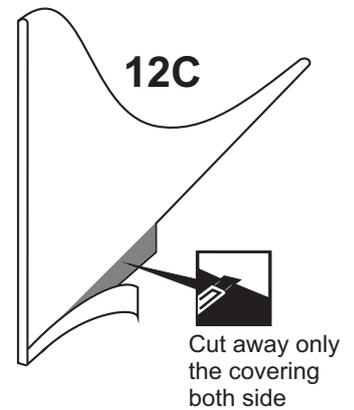
Trial fit the vertical fin in position. Using a 90 degree triangle, ensure that the vertical stabilizer is perpendicular to the horizontal stabilizer (12B).

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

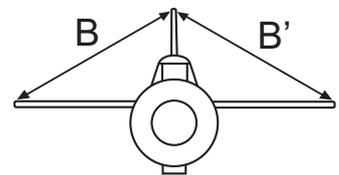
12B



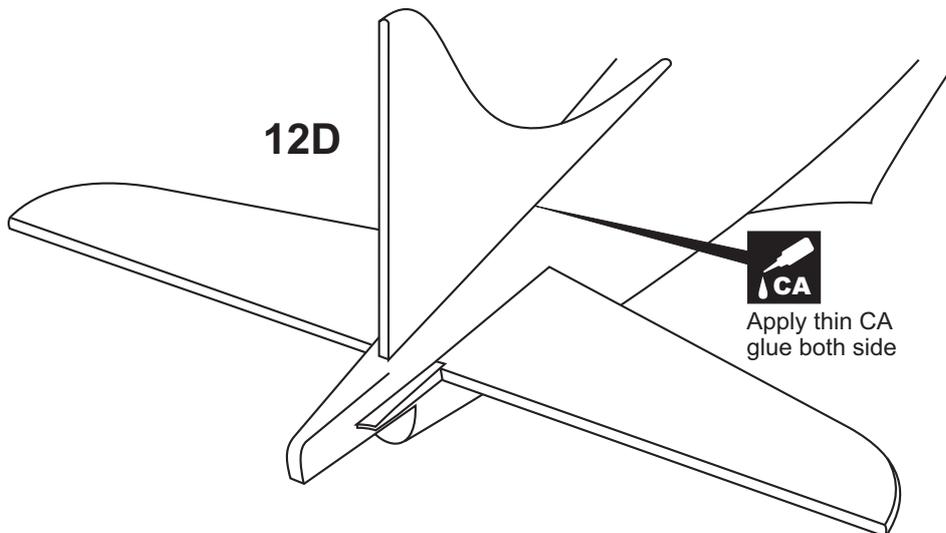
12C



B=B'



12D

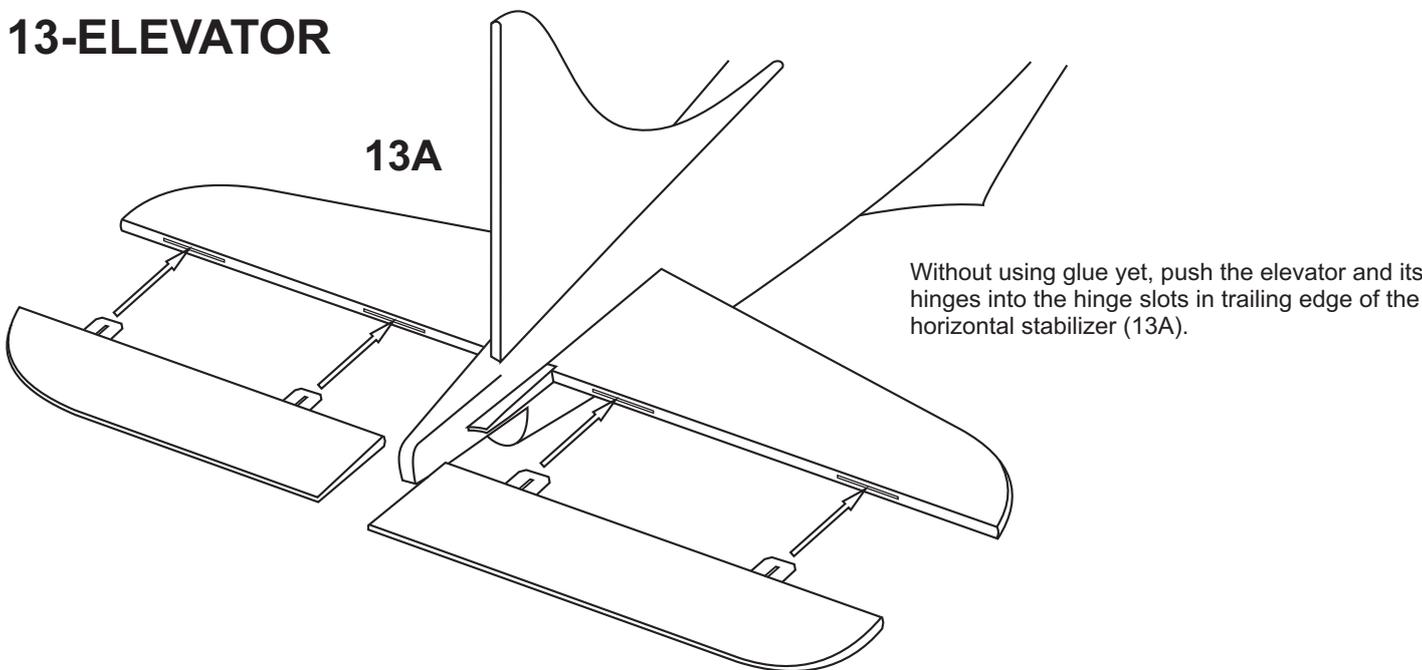


Insert the vertical fin into the fuselage, precisely align the vertical stabilizer as described in step 12B.

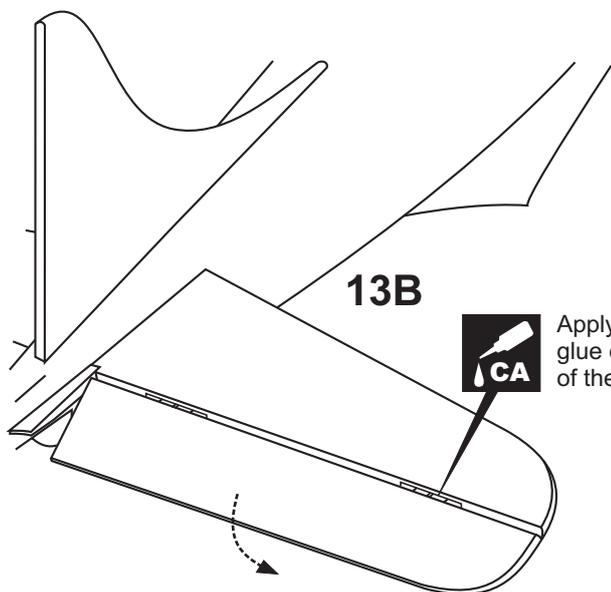
Apply the thin CA glue on the vertical stabilizer where it contacts the fuselage (12D).

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

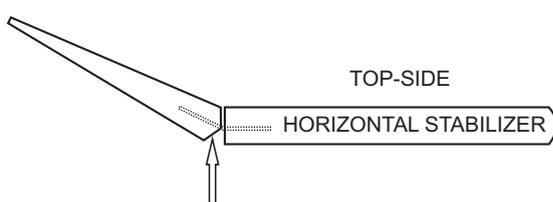
# 13-ELEVATOR



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



Apply **thin CA** glue on the top of the hinge



TOP-SIDE

HORIZONTAL STABILIZER

Apply a thin layer of petroleum jelly



Apply **thin CA** glue on the top of the hinge

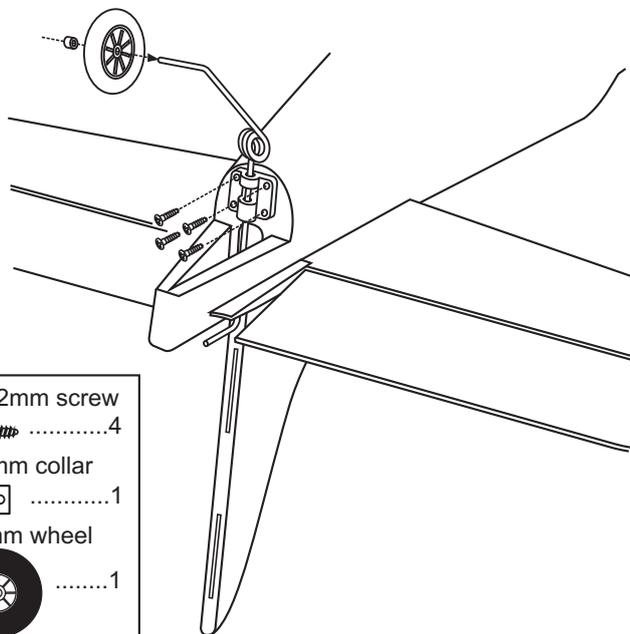
TOP-SIDE

HORIZONTAL STABILIZER

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

# 14-RUDDER

14A



3X12mm screw

.....4

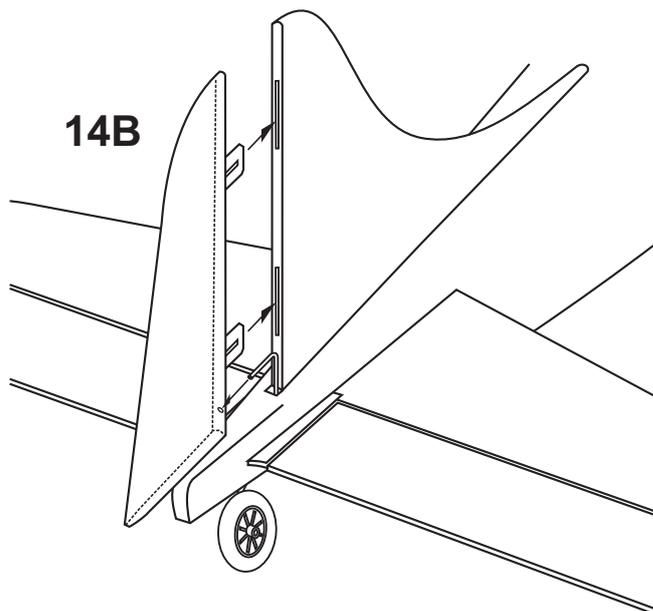
2.2mm collar

.....1

25mm wheel

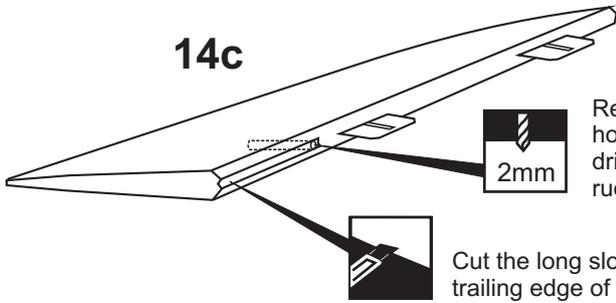
.....1

14B



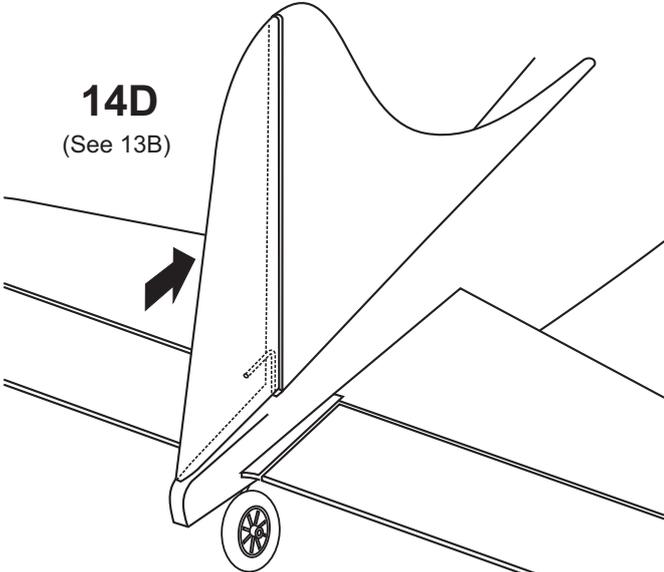
Without using glue yet, push the rudder and its hinges into the hinge slots in the trailing edge of the vertical stabilizer. When satisfied with the alignment, mark the mounting hole position, where the tail gear meets the rudder with a pencil.

14c



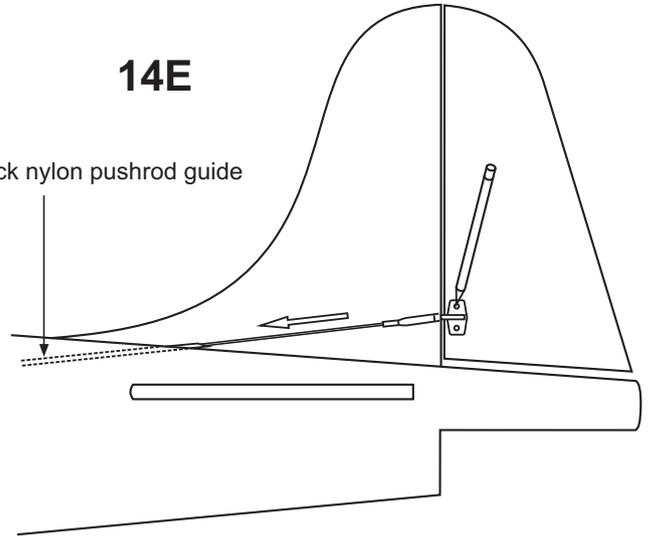
14D

(See 13B)



14E

Black nylon pushrod guide



Push the rudder pushrod into the black nylon pushrod guide as shown (14E).

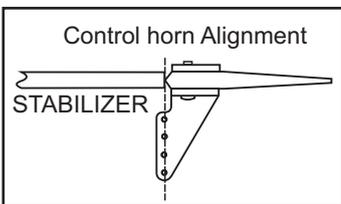
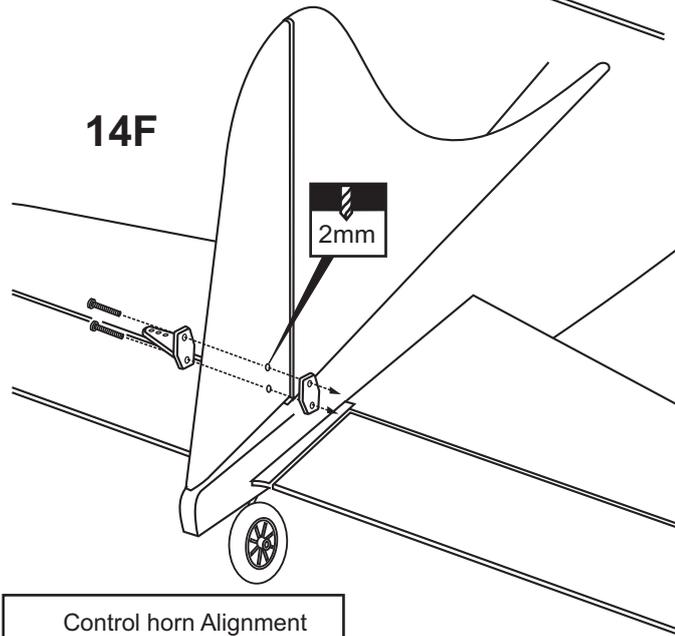
Using the back plate of control horn as a template, mark the mounting hole positions, where the rudder clevis meets the rudder with a felt tipped or a pencil (14E).

Remove the back plate control horn and drill two 2mm holes through the rudder (14F).

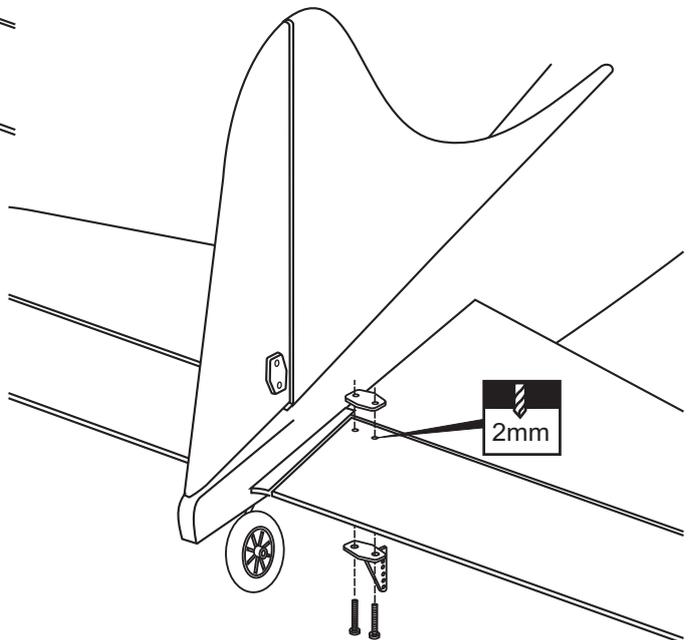
Attach the rudder control horn using the hardware provided (two 2x15mm screws and a back plate).(14F)

Do the same way with the elevator control horn.

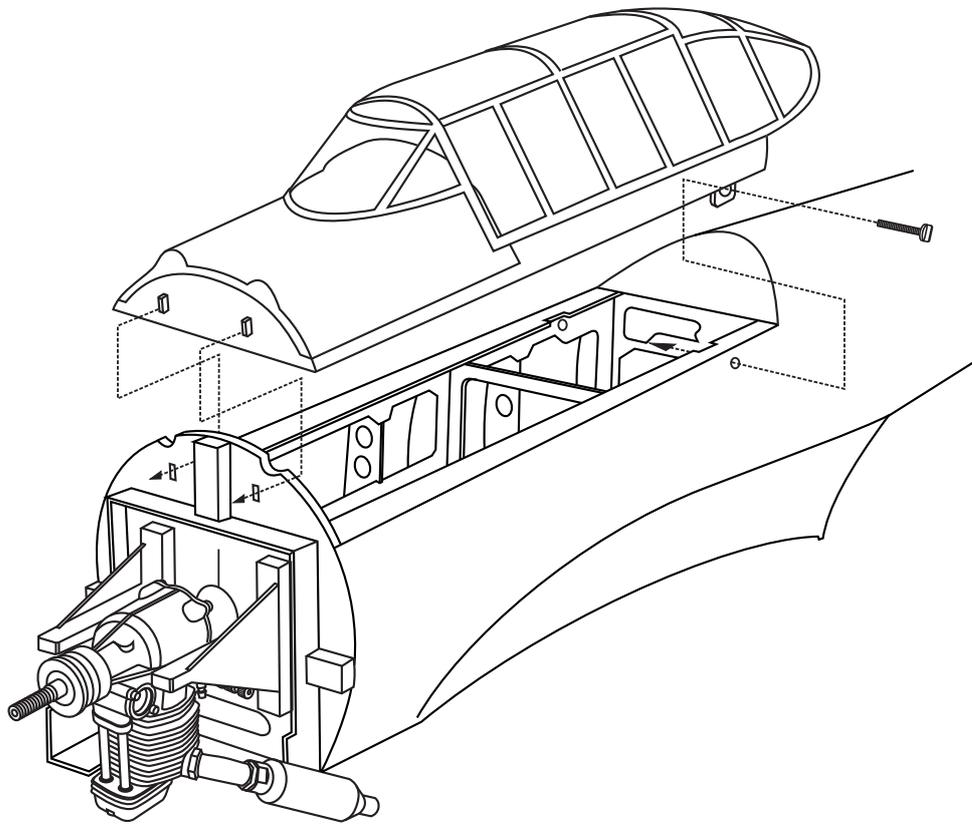
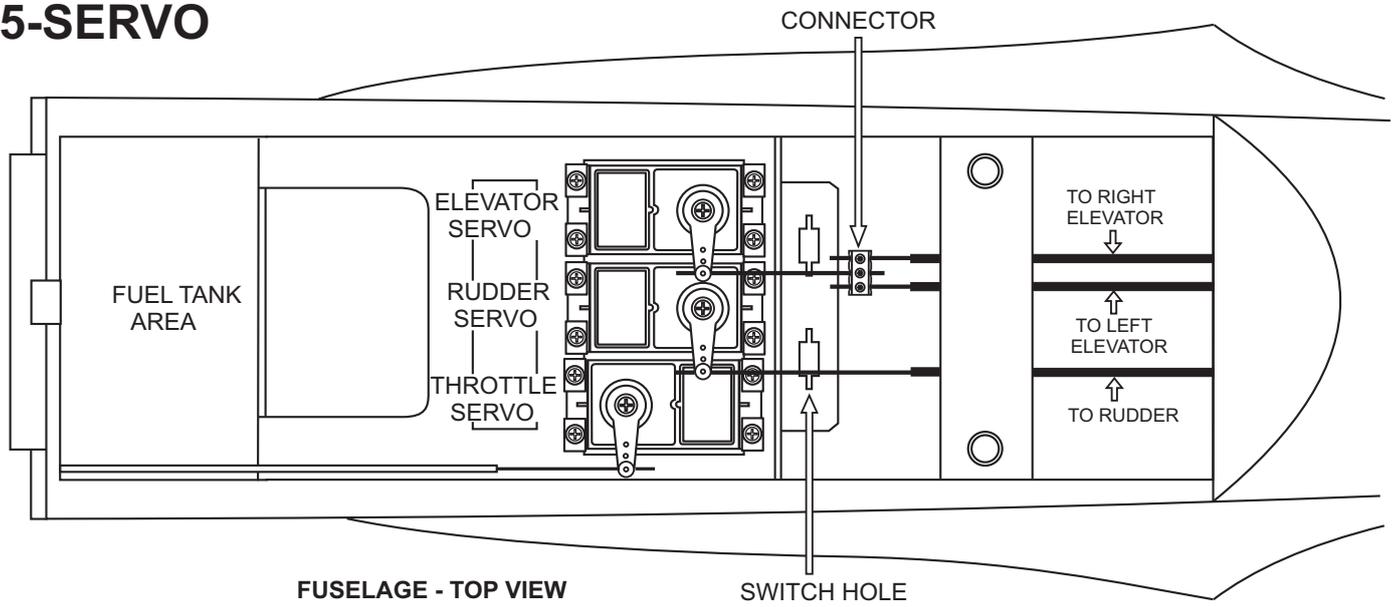
14F



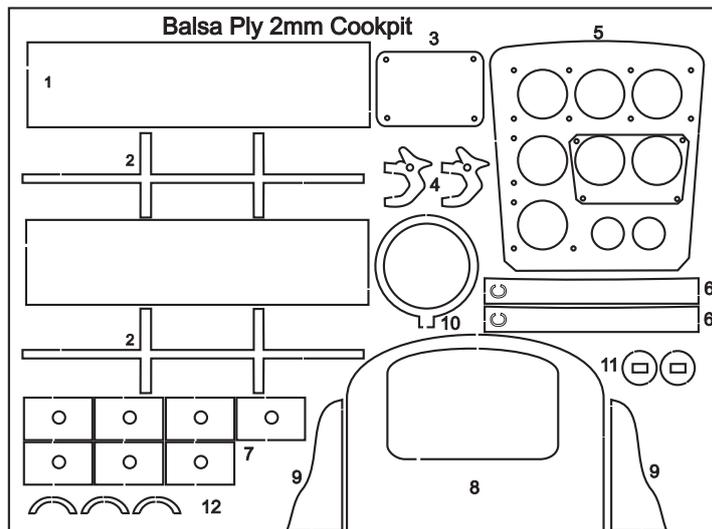
Plastic control horn	.....3
Plastic back plate	.....3
2x12mm screw	.....6



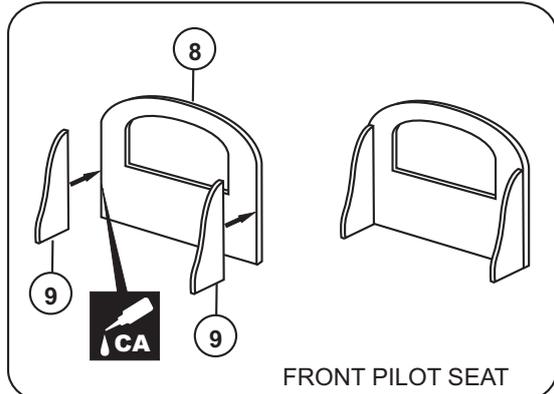
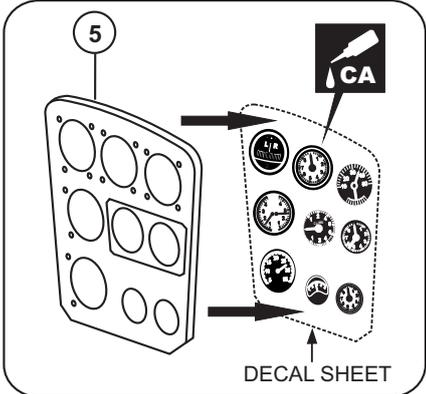
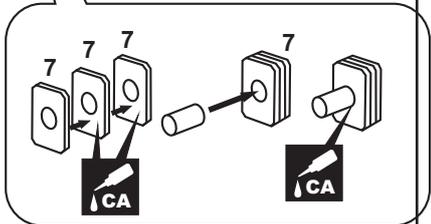
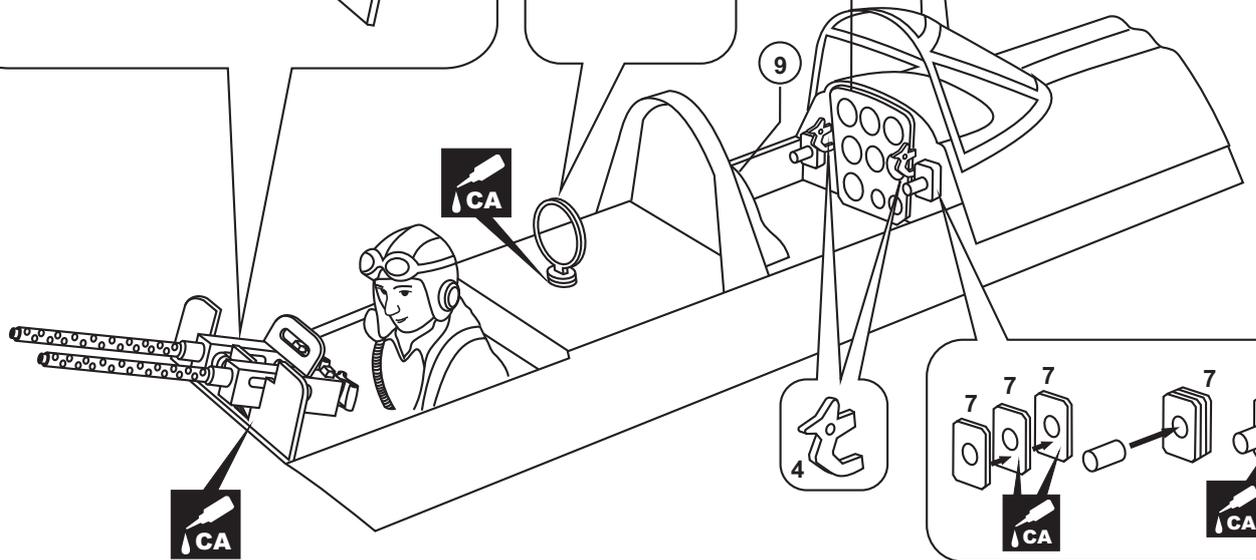
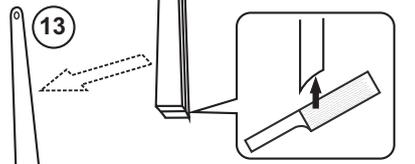
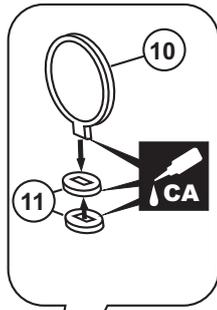
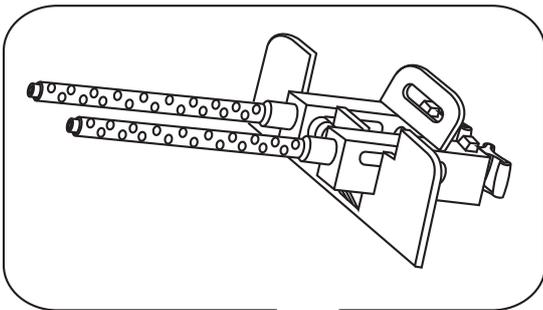
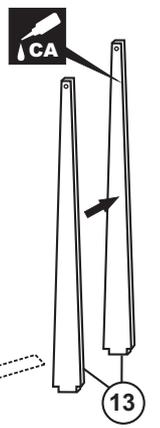
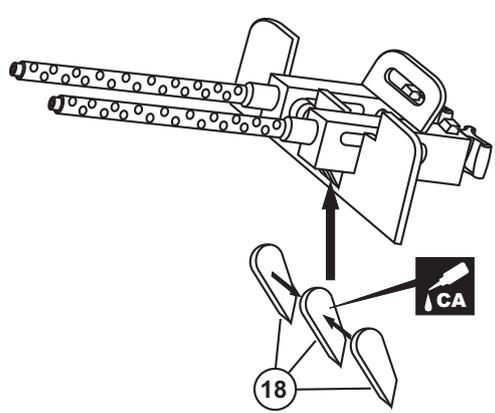
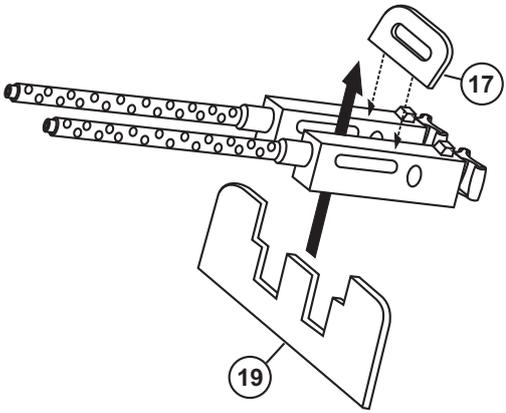
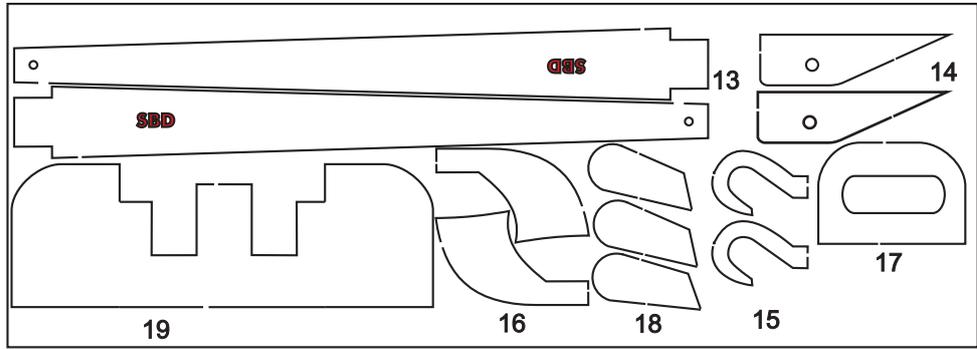
# 15-SERVO



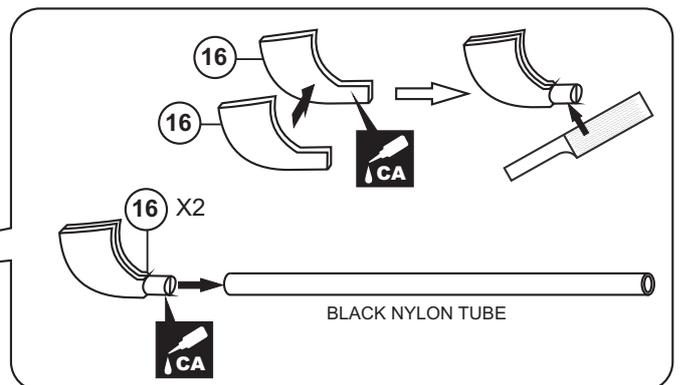
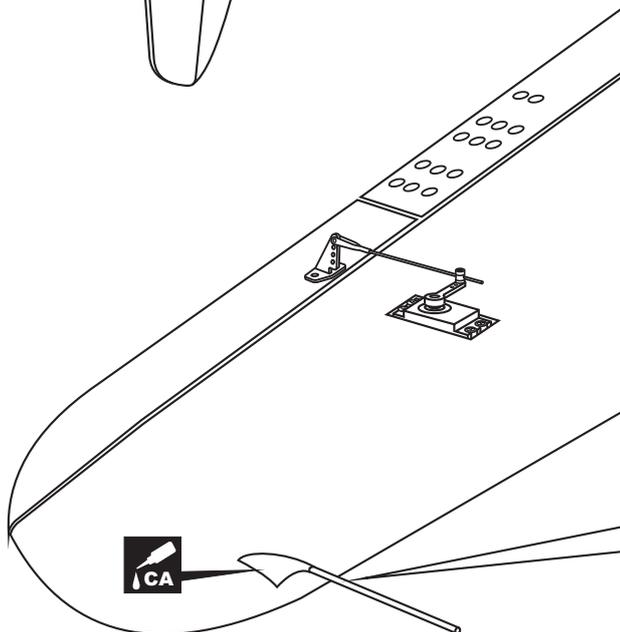
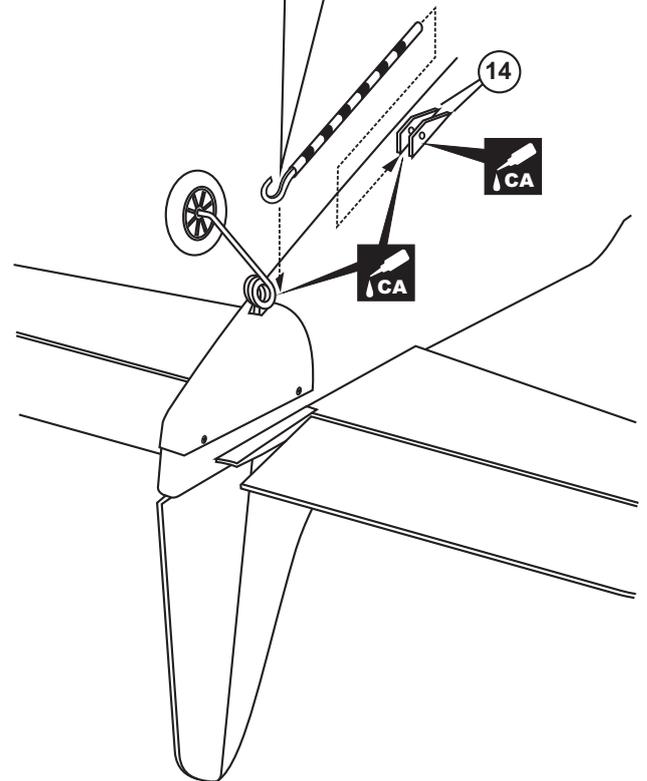
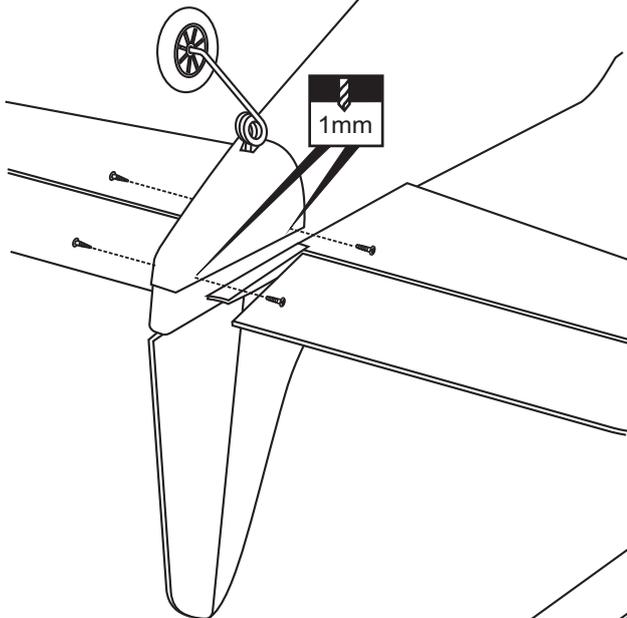
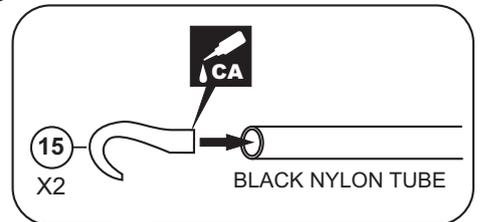
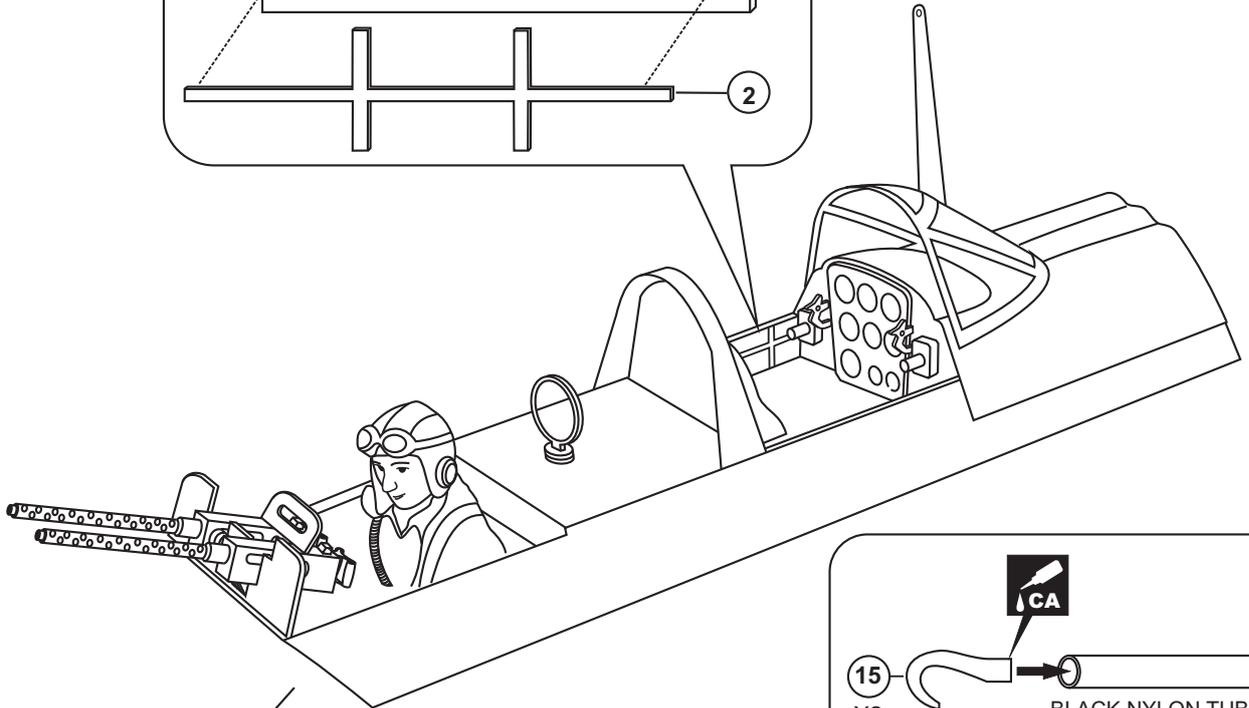
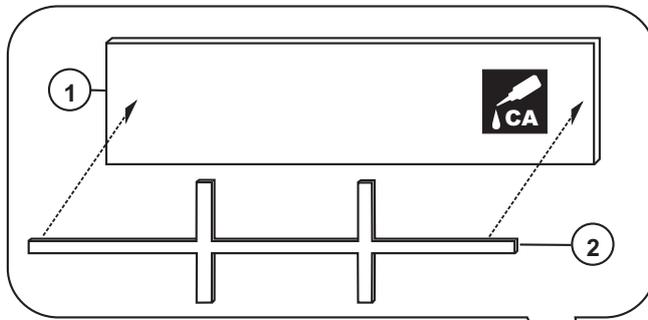
# 16-DECOR



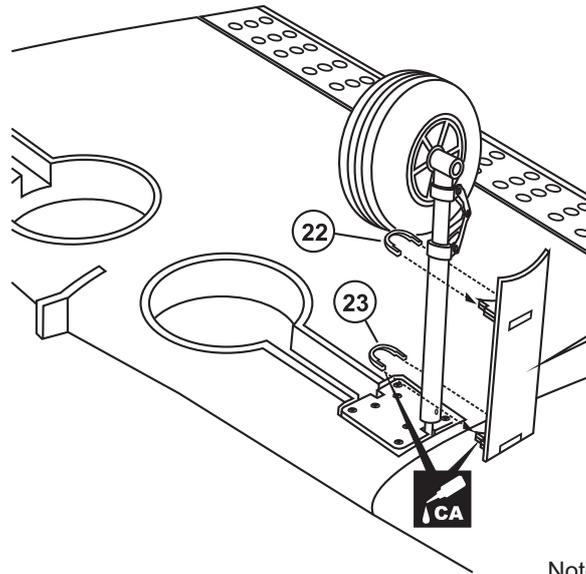
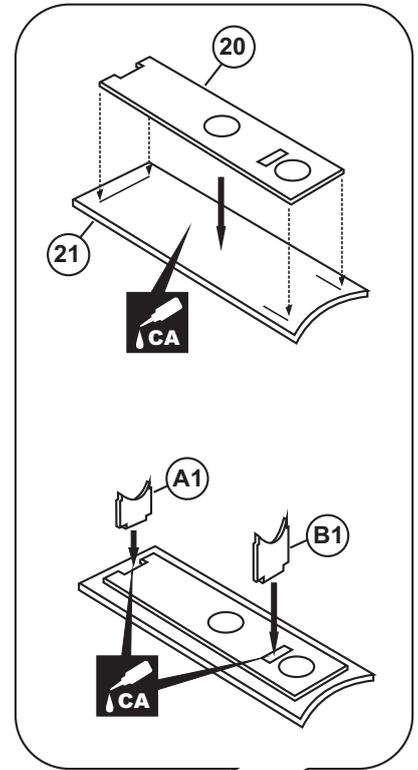
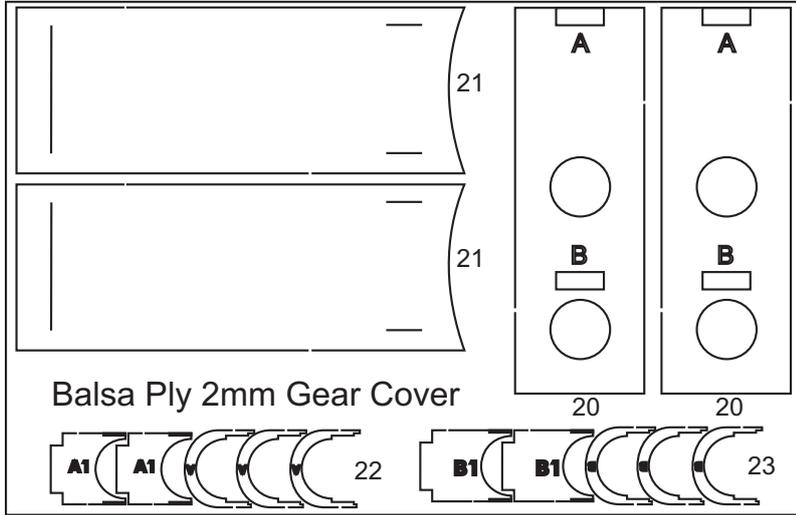
# 17-DECOR



# 18-DECOR

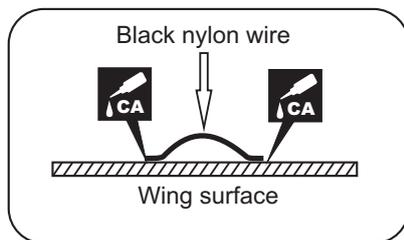


# 19-DECOR

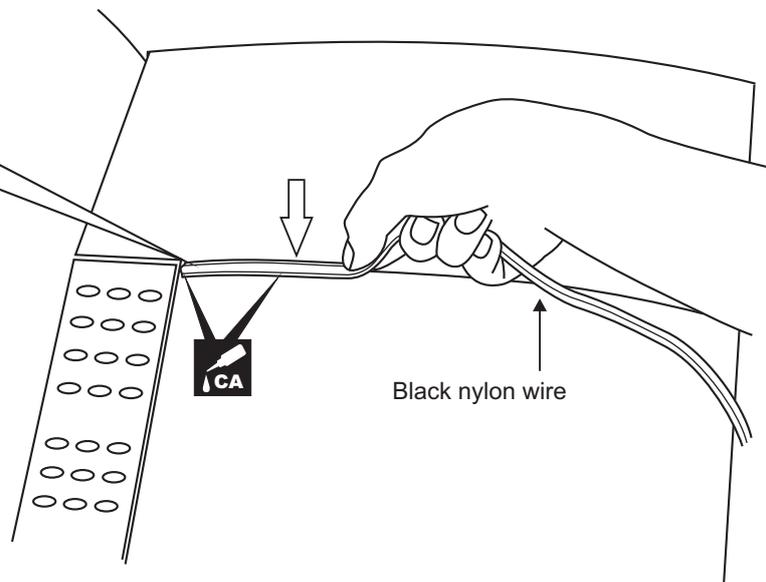


Note: Strut not include.

# 20-DECOR

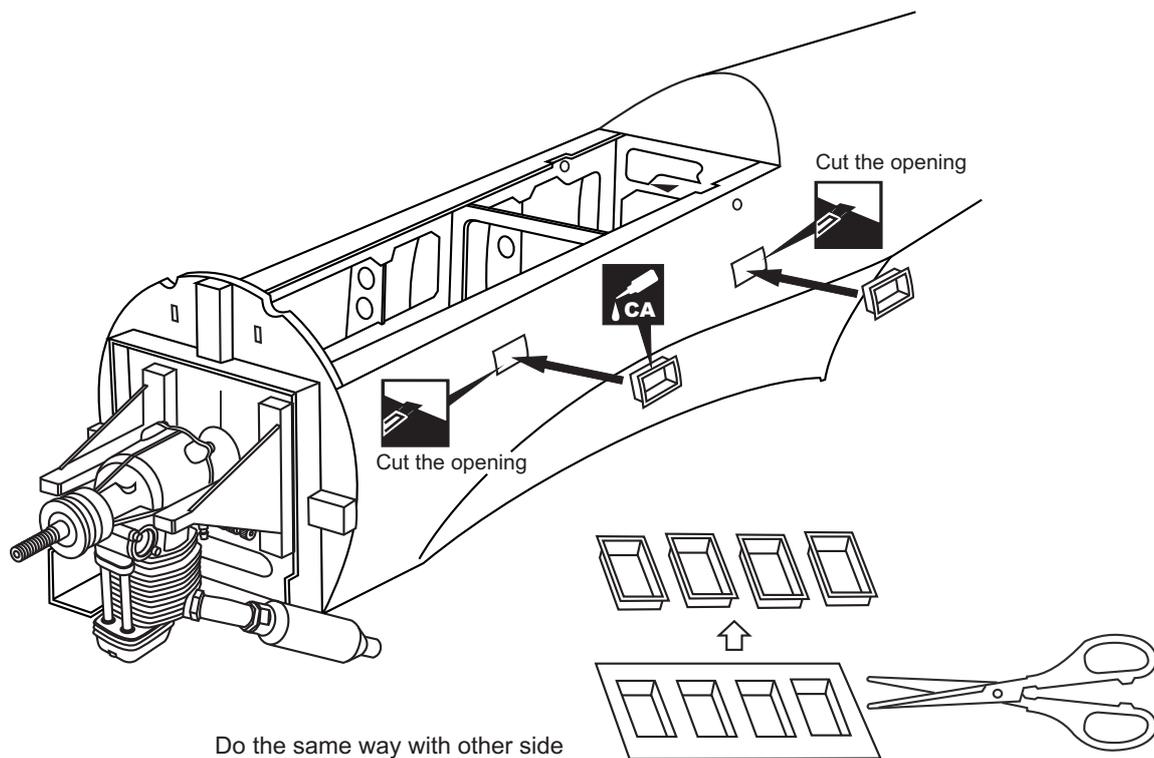


Do the same way with other side

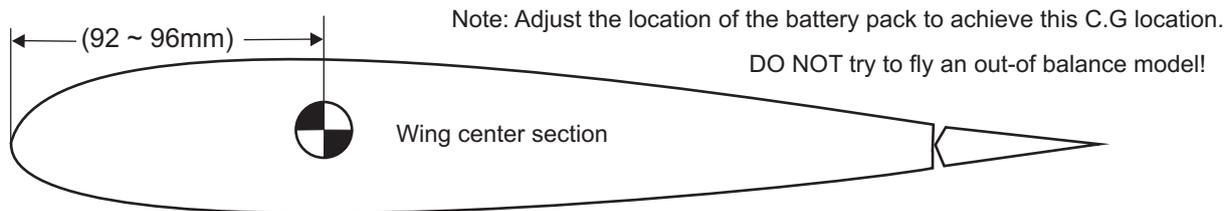


WING- TOP VIEW

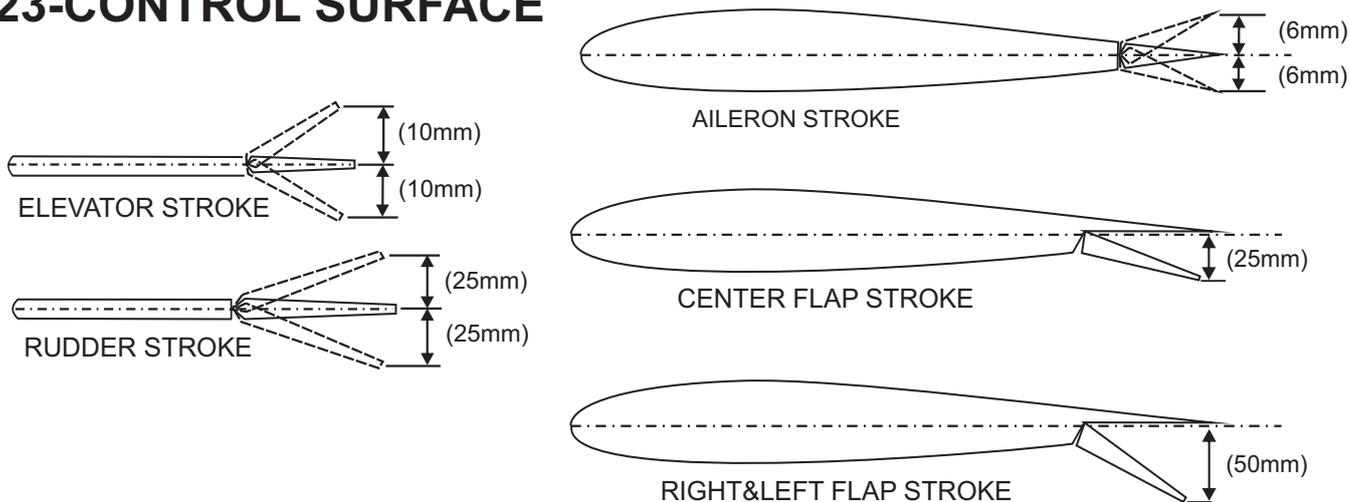
## 21-DECOR



## 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.