

# 42% *Ultimate*



**Requires : 150-200 c.c. engine, 6 channel radio  
w/ 17 high torque servos.**

## Specifications

|                        |                                  |
|------------------------|----------------------------------|
| <b>Wing Span</b>       | <b>98 in / 2490 mm</b>           |
| <b>Wing Area</b>       | <b>3300 sq in / 213 sq dm</b>    |
| <b>Flying Weight</b>   | <b>38-40 lbs / 17250-18160 g</b> |
| <b>Fuselage Length</b> | <b>104 in / 2640 mm</b>          |

\* Specifications are subject to change without notice.\*

### **Warning !This model is not a toy.**

It is designed for maximum performance. Please seek advice if one is not familiar with this kind of engine powered precision model. Operating this model without prior preparation may cause injuries. Remember, safety is the most important thing. Always keep this instruction manual at hand for quick reference.



**The World Models  
Manufacturing Co., LTD.**  
www.theworldmodels.com

FACTORY PRE-FABRICATED  
ALMOST-READY-TO-FLY (ARF) SERIES  
MADE IN CHINA

# 42% Ultimate

## INDEX

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## BEFORE YOU BEGIN

- 1 Read through the manual before you begin, so you will have an overall idea of what to do.
- 2 Check all parts. If you find any defective or missing parts contact your local dealer. Please DRY FIT and check for defects for all parts that will require CA or Epoxy for final assembly. Any parts you find to be defective after the gluing process may be difficult to remove for warranty replacement. The manufacturer will replace any defective parts, but will not extend to the parts that are good before gluing to defective parts during assembly.
- 3 Symbols used throughout this instruction manual comprise of the following :-



Apply epoxy glue.



Apply instant glue  
(C.A.glue, super glue.)



Assemble left and right  
sides the same way.



Ensure smooth non-binding  
movement while assembling.



Peel off shaded portion  
covering film.



Cut off shaded portion.



Drill holes with the specified  
diameter (here: 3mm).



Must be purchased separately!



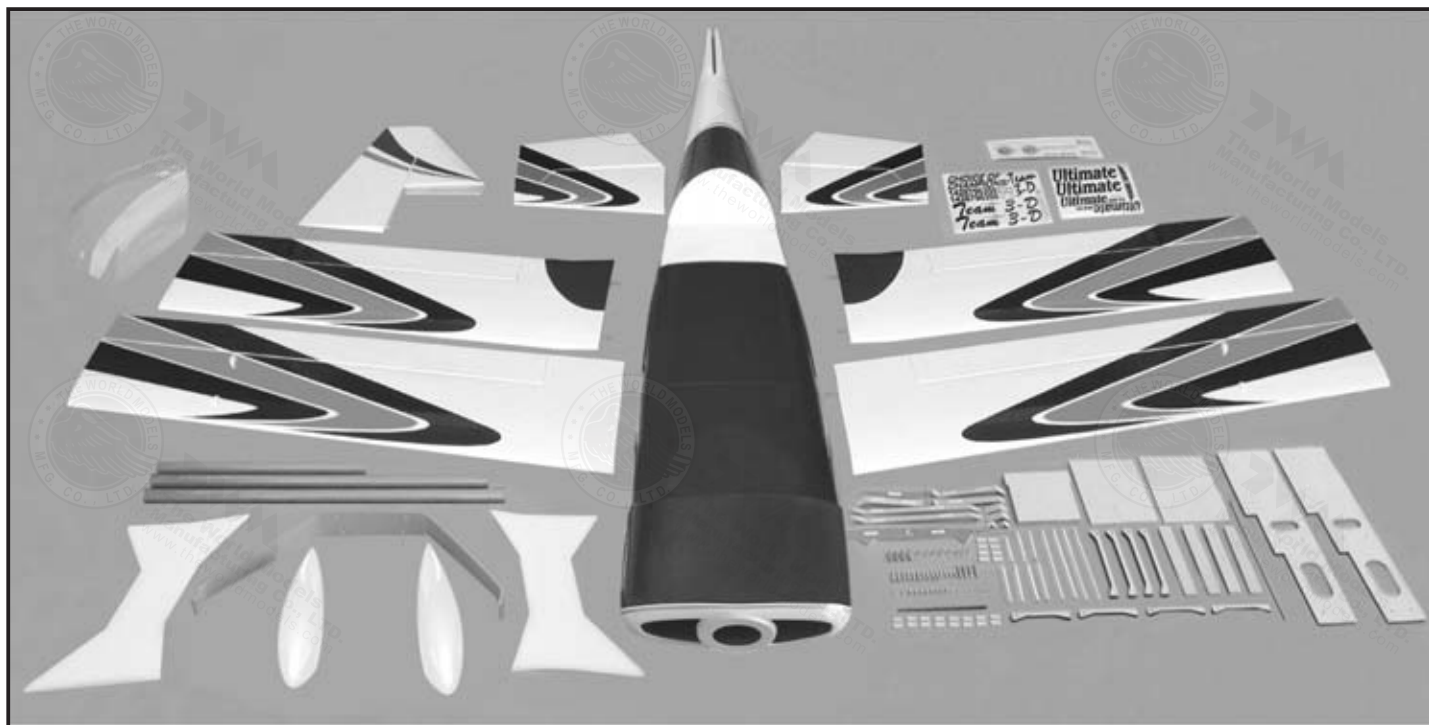
Pay close attention here!



Do not overlook this symbol!



Pierce the shaded portion  
covering film.



## **Parts List**

1. MAIN WING (LOWER WING) -- 1 pair  
MAIN WING (UPPER WING) -- 1 pair
2. WOODEN 6x10x21mm (For Aileron Servo Stand) -- 8 pcs
3. WOODEN 6x10x21mm (For Aileron Servo Stand) -- 8 pcs
4. STABILIZER & ELEVATOR -- 1 set  
FUSELAGE -- 1 pc.  
WOODEN 6 x10x21mm (For Elevator Servo Stand) -- 8 pcs  
STABILIZER TUBE Ø22x514mm -- 1 pc.  
SCREW PWA3x14mm -- 2 pcs  
WIRE Ø3x192mm -- 1 pc.
5. VERTICAL FIN & RUDDER -- 1 set
7. ENGINE BOX SIDE PLATE 8x127x571mm (F8) -- 1 pc.  
ENGINE BOX SIDE PLATE 8x127x563mm (F8') -- 1 pc.  
PLYWOOD 6x20x123mm (F8A) -- 4 pcs  
PLYWOOD 6x20x205mm (F8B) -- 4 pcs  
FIREWALL 9x159x164mm (F9) -- 1 pc.  
UPPER PLATE 6x159x221mm (F9A) -- 1 pc.  
LOWER PLATE 3x159x230mm (F9B) -- 1 pc.  
BALSA 9x9x213mm (F9C) -- 2 pcs  
BALSA 9x9x221mm (F9D) -- 2 pcs  
BALSA 9x9x109mm (F9E) -- 2 pcs  
BALSA 9x9x109mm (F9F) -- 1 pc.  
BALSA 9x9x109mm (F9H) -- 1 pc.  
BALSA 9x9x70mm (F9I) -- 2 pcs  
BALSA 9x9x90mm (F9J) -- 2 pcs  
WOODEN 6.6x25x210mm (F10) -- 4 pcs  
BAMBOO D3.5x380mm -- 1 pc.  
BALSA 10x10x143mm (F63C) -- 1 pc.
8. CENTER WING CABANE -- 1 set  
ALUMINUM PLATE -- 2 pcs  
BALSA 9x9x414.4mm (F36A) (For Fuselage) -- 2 pcs  
BALSA 9x9x402.3mm (F36A) (For Fuselage) -- 2 pcs
9. MAIN LANDING GEAR -- 1 set  
ALUMINUM PLATE -- 2 pcs  
WHEEL PANTS -- 1 pair  
SOCKET HEAD SCREW M6x20mm -- 4 pcs  
SCREW PA3x12mm -- 4 pcs
15. WING TUBE Ø22x865.5mm -- 1 pc.  
SCREW PM3x22mm -- 1 pc.  
SCREW PA3x22mm -- 1 pc.  
WASHER d3xD7mm -- 2 pcs
16. WING TUBE Ø22x817mm -- 1 pc.  
SCREW PM3x22mm -- 1 pc.  
SCREW PA3x22mm -- 1 pc.  
WASHER d3xD7mm -- 2 pcs
17. FLYING WIRE ASSEMBLY -- 1 set  
PLYWOOD 3x536.6x597.4mm  
(Wing Incidence Angle Template) -- 2 pcs  
PLYWOOD (OUTER WING CABANES) -- 1 pair
18. CANOPY -- 1 pc.  
COCKPIT -- 1 pc.  
SCREW PM3x25mm -- 4 pcs  
WASHER d3xD7mm -- 4 pcs
19. COWLING -- 1 pc.
20. DECALS -- 1 set

## **COVERING:--**

### **\* PURPLE COLOR SCHEME:**

TOUGHLON STL 100 WHITE  
TOUGHLON STL 201 BLACK  
TOUGHLON STL 561 PEARL PURPLE  
TOUGHLON STL 370 SILVER

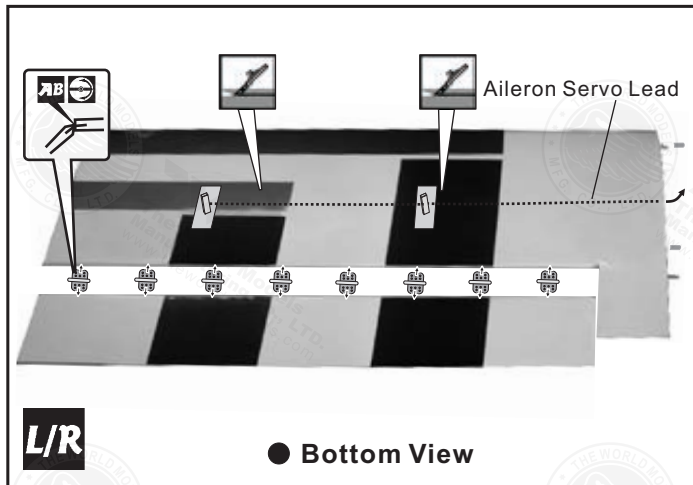
### **\* YELLOW COLOR SCHEME:**

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TOUGHLON STL 201 BLACK  
TOUGHLON STL 330 CADMIUM YELLOW  
TOUGHLON STL 370 SILVER

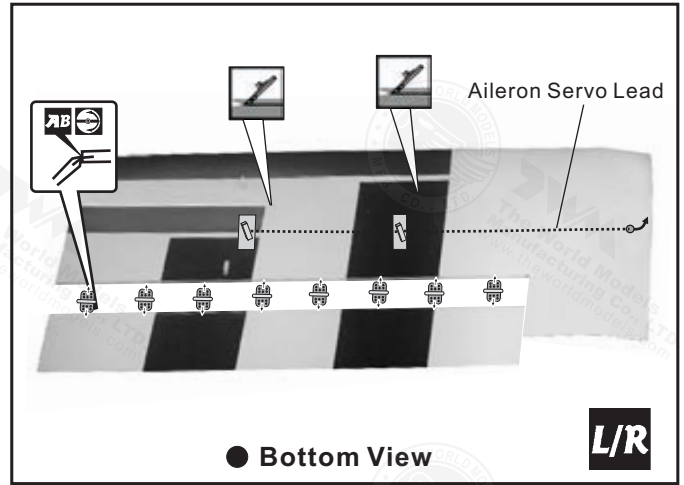
# 1 Main Wing

- Replace CA hinges by metal hinges. Glue the metal hinges to wing and aileron by epoxy.

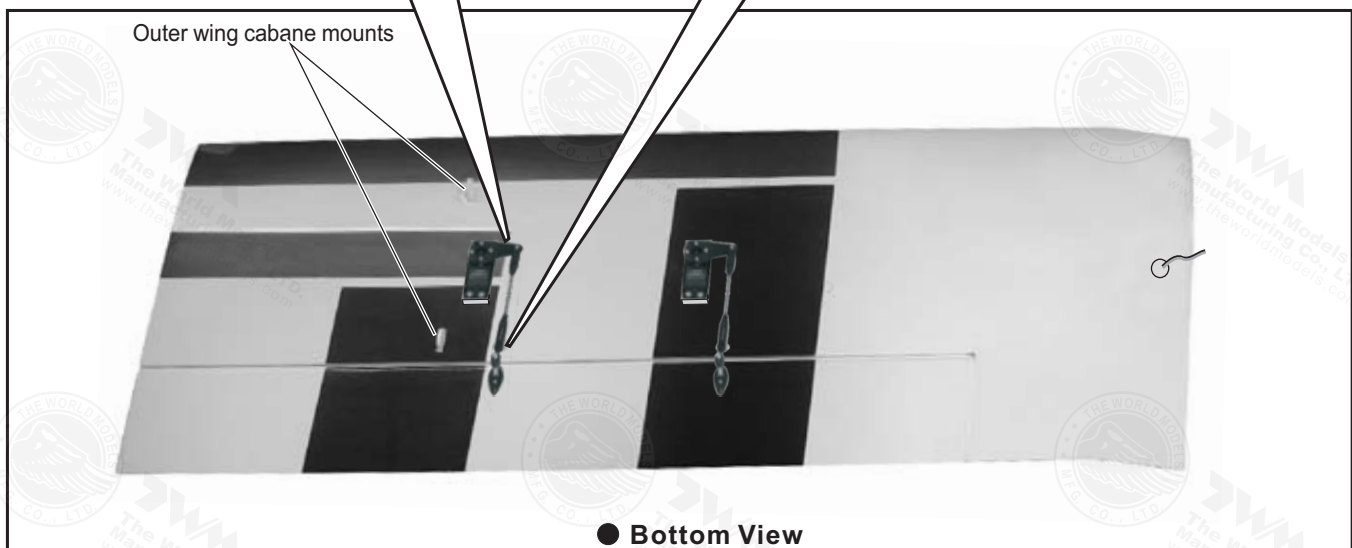
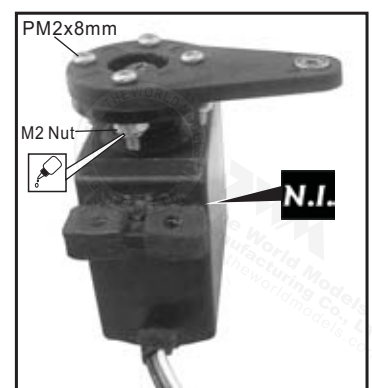
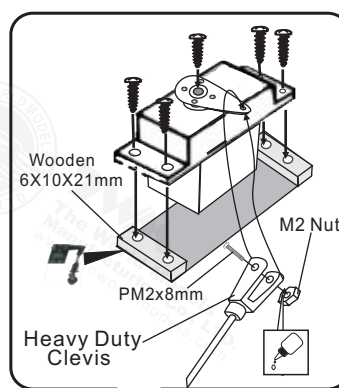
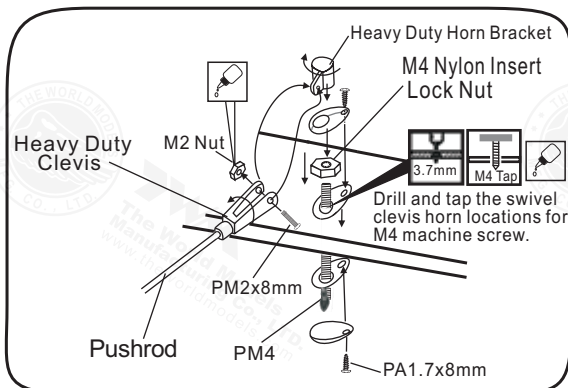
Main Wing (Lower)



Main Wing (Upper)



## 2 Aileron Servo (Upper Wing)

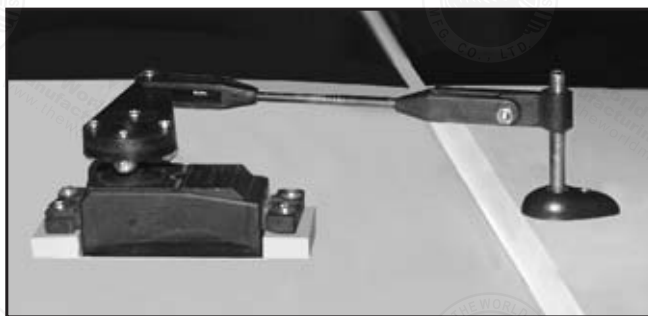


L/R



### 3 Aileron Servo (Lower Wing)

Similar installation as upper wing.



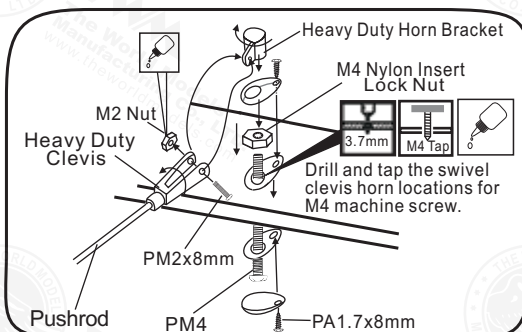
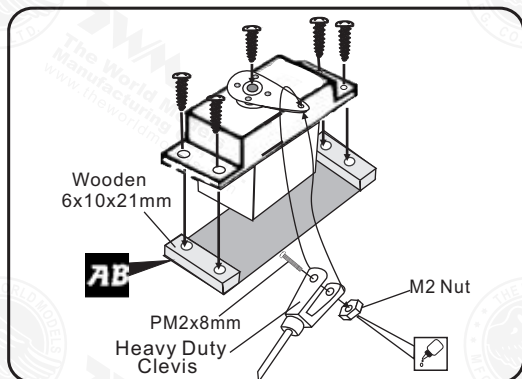
● Bottom View

L/R

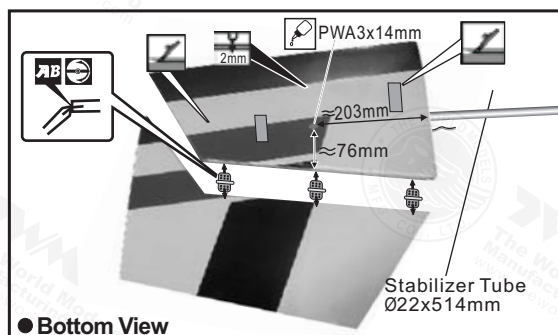
### 4 Stabilizer & Elevator

PWA3 X 14mm Screw

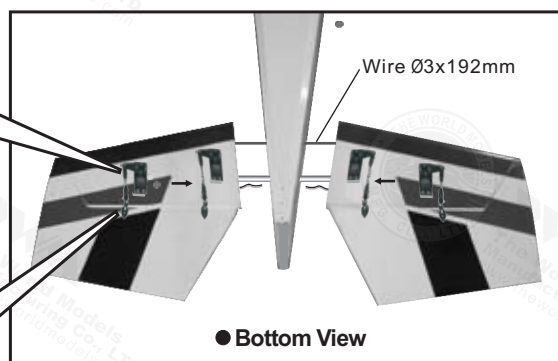
2



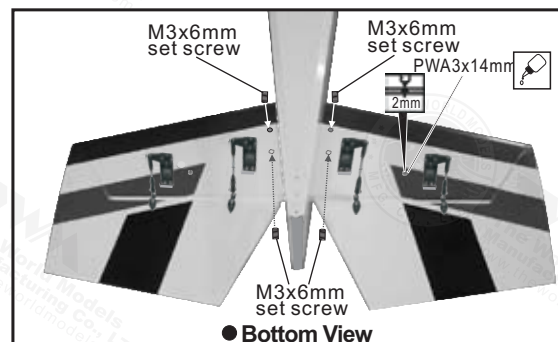
● Replace CA hinges by metal hinges. Glue the metal hinges to stabilizer and elevator by epoxy.



● Bottom View



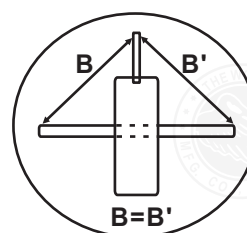
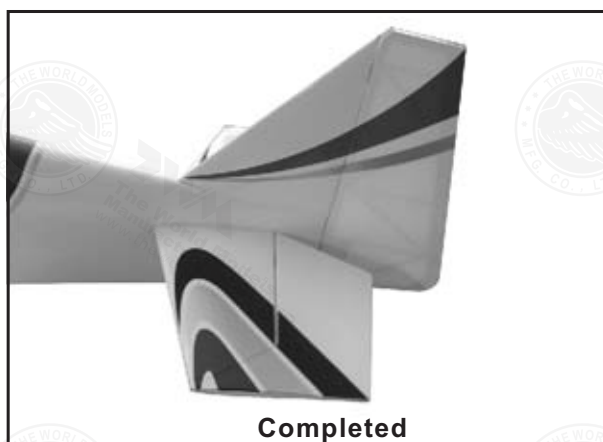
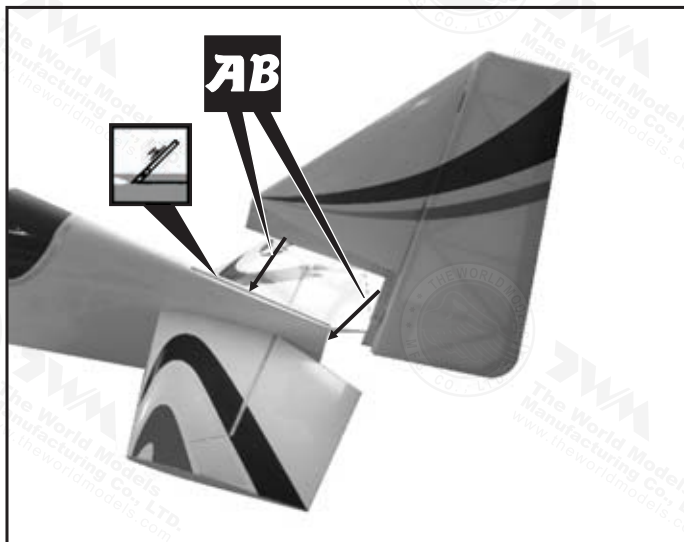
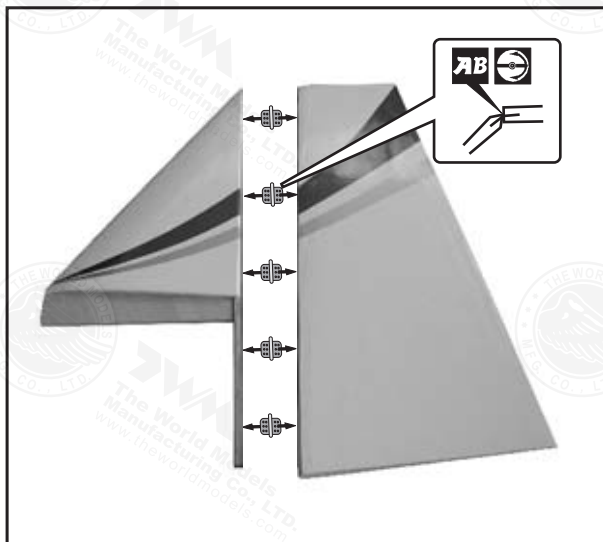
● Bottom View



● Bottom View

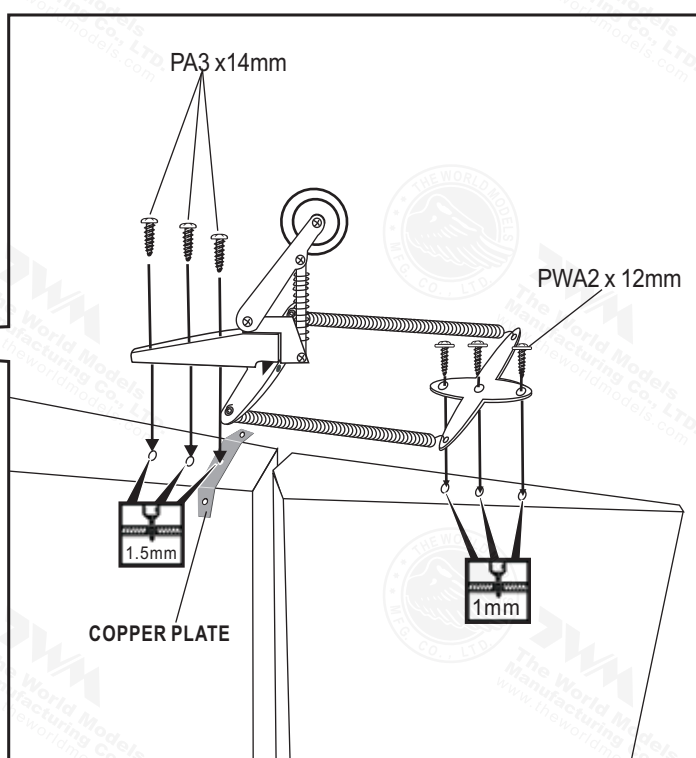
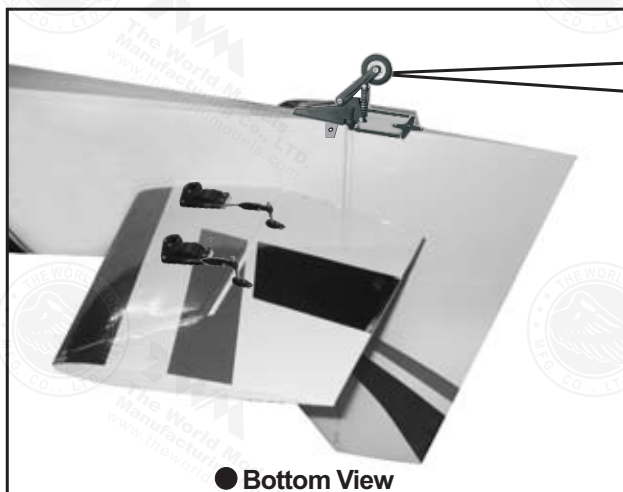
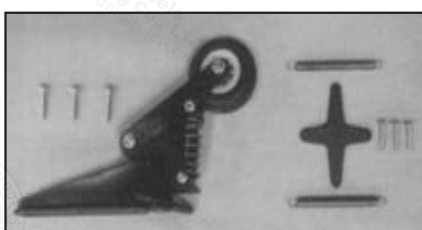
L/R

## 5 Vertical Fin & Rudder

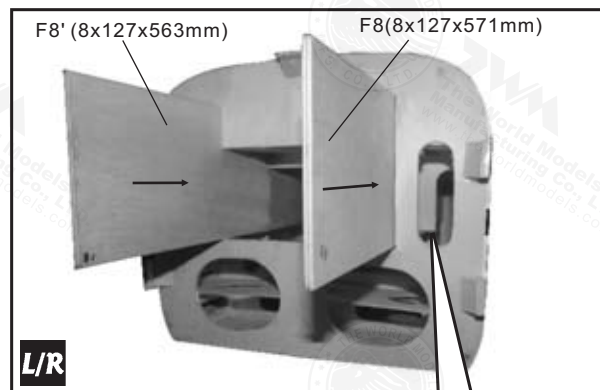
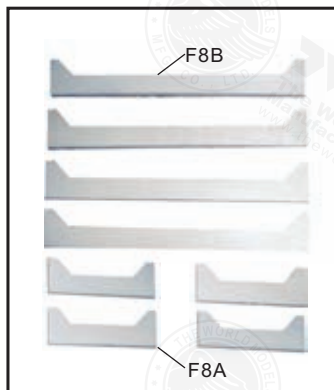


- Replace CA hinges by metal hinges. Glue the metal hinges to vertical and rudder by epoxy.

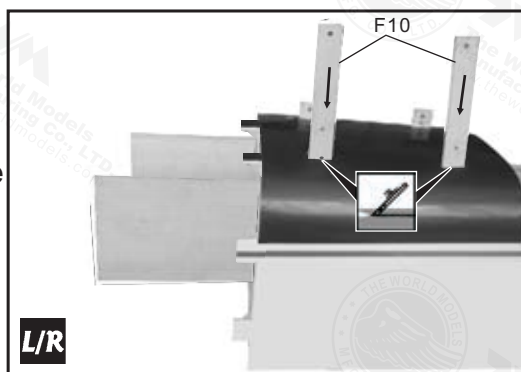
## 6 Tail Landing Gear



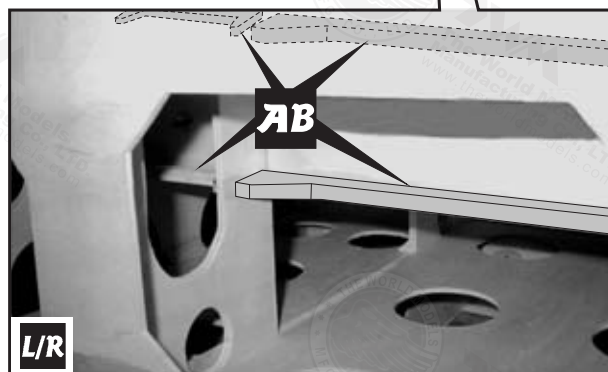
## 7 Engine Box



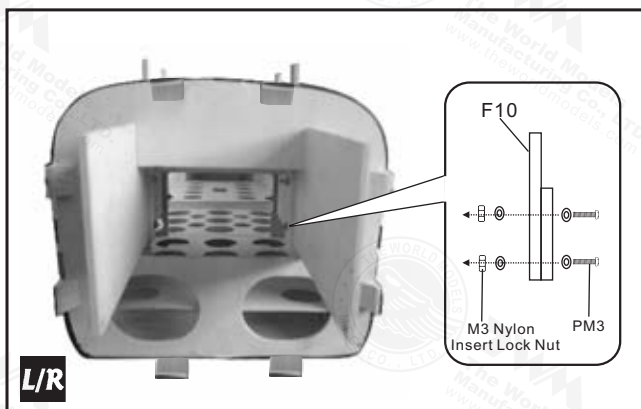
L/R



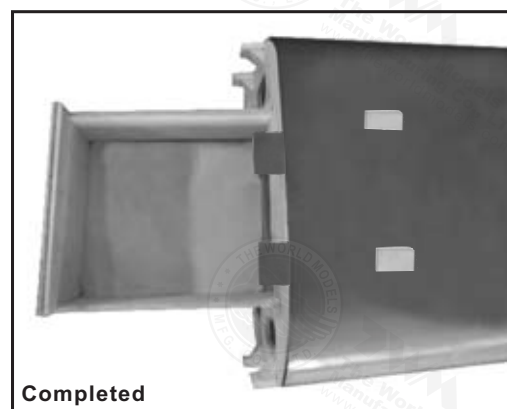
L/R



L/R



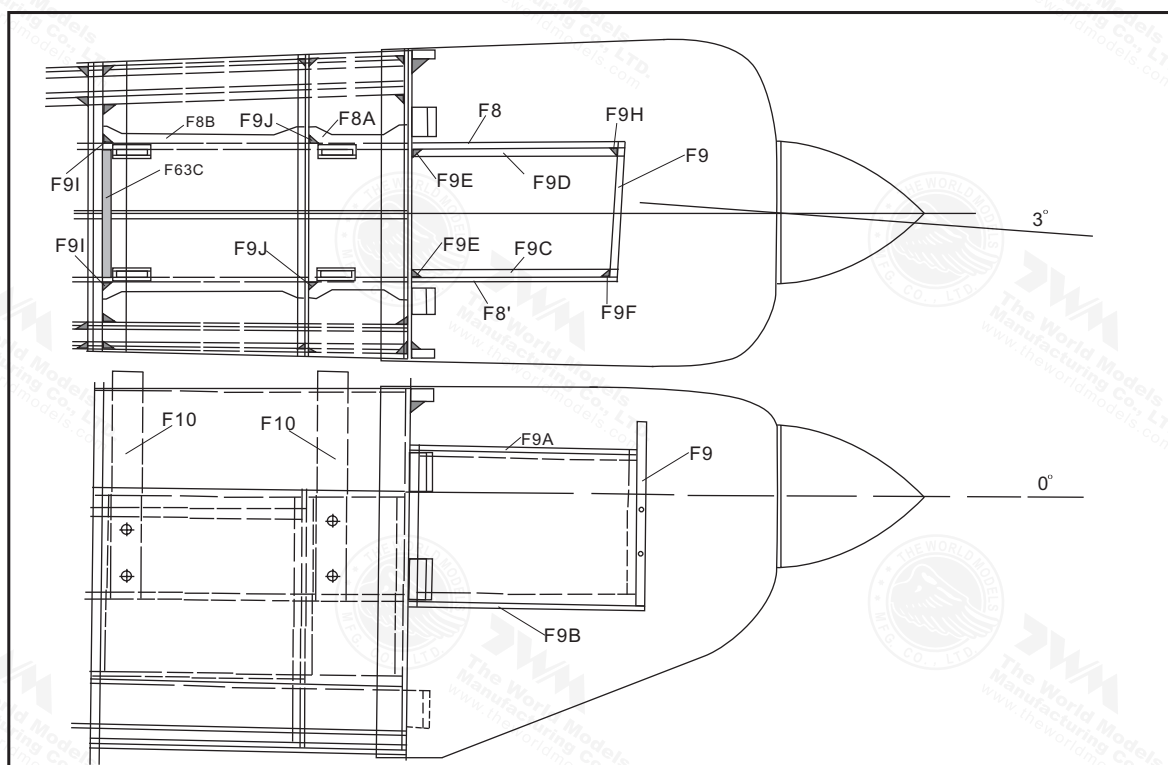
L/R



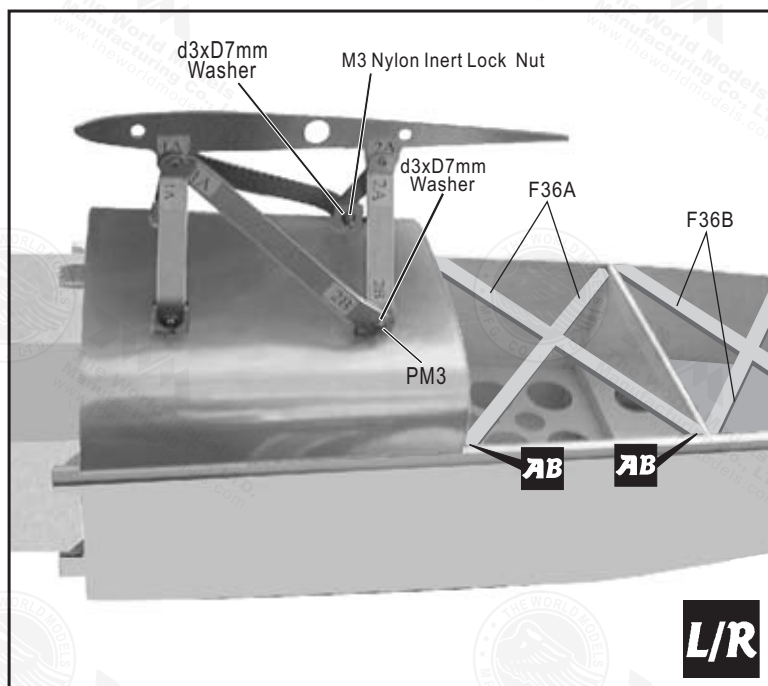
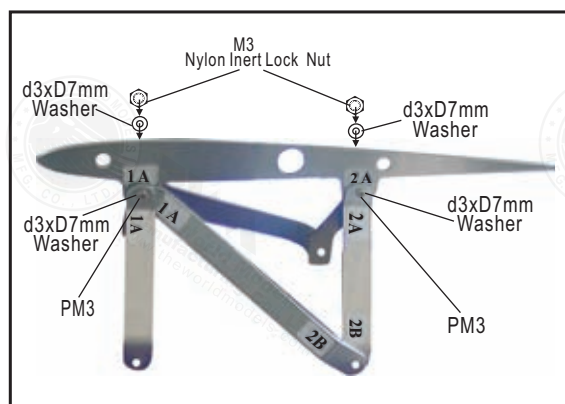
Completed

**!**  
Please note  
right thrust  
angle of  
firewall.

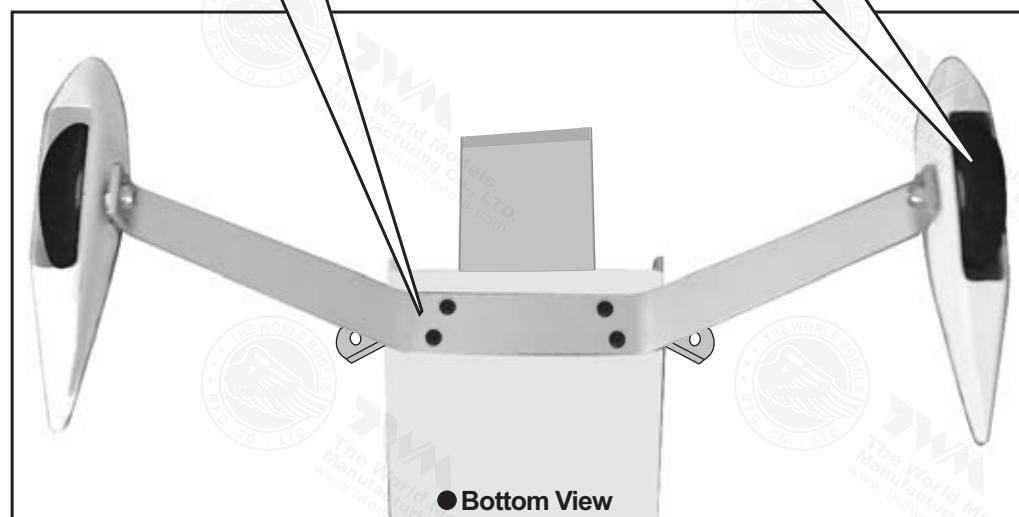
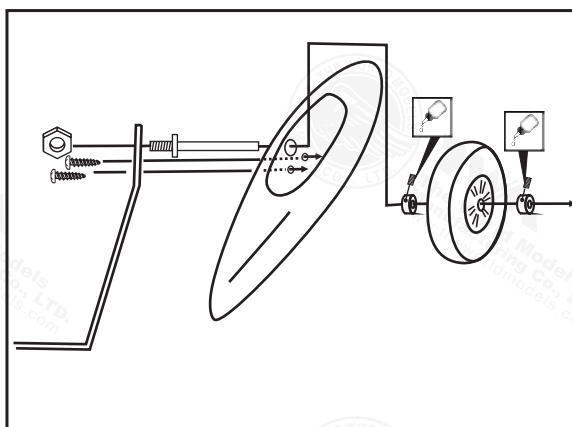
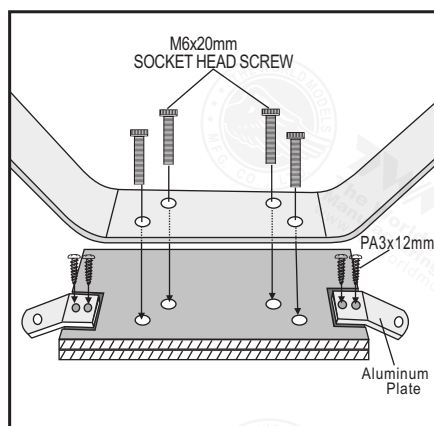
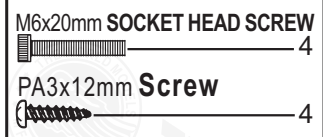
● Use epoxy to  
glue all parts  
together.



## 8 Wing Cabane



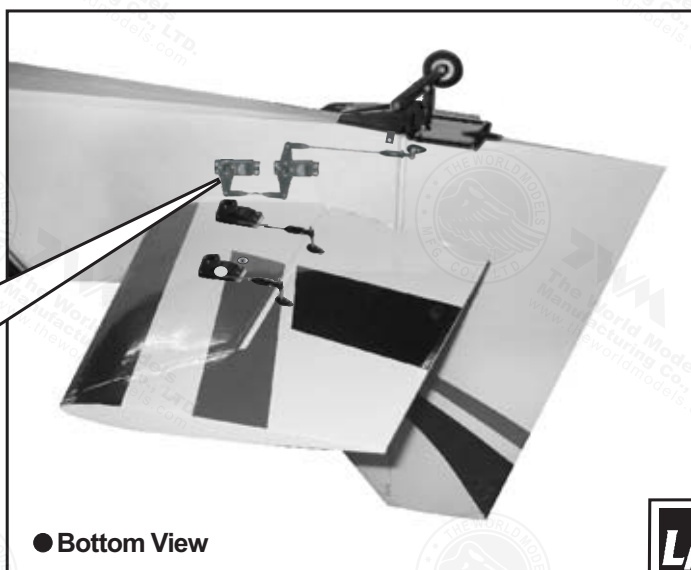
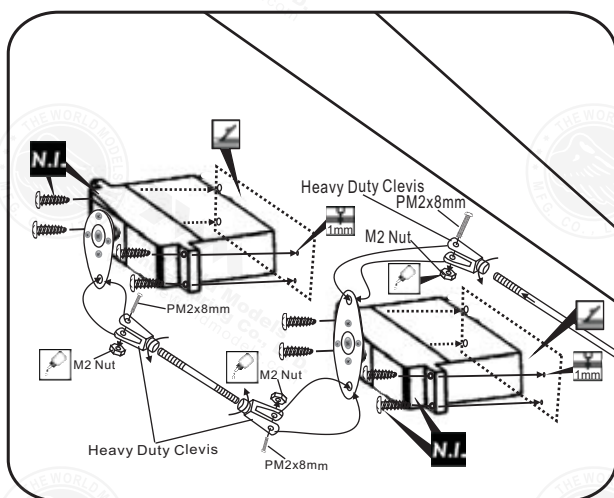
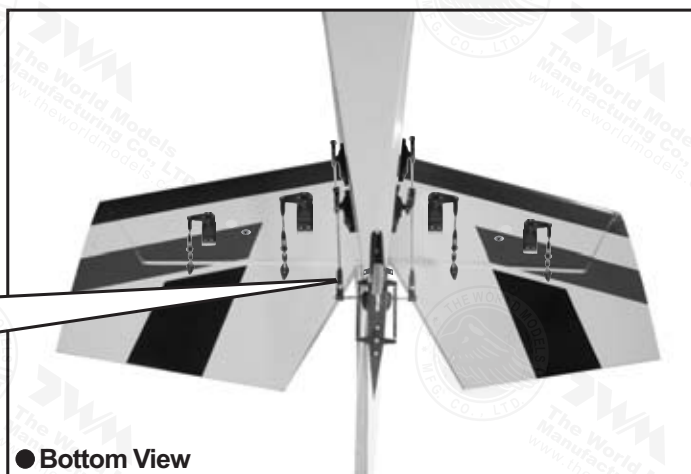
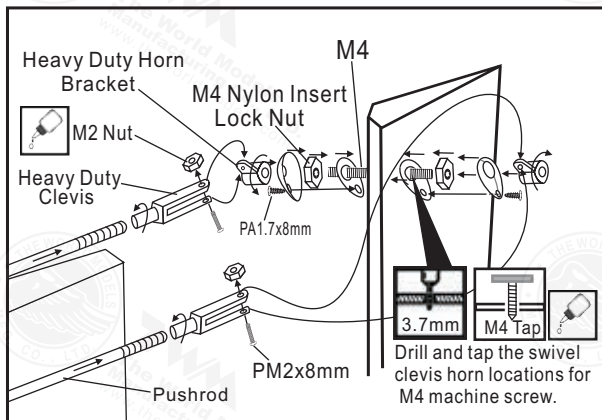
## 9 Main Landing Gear



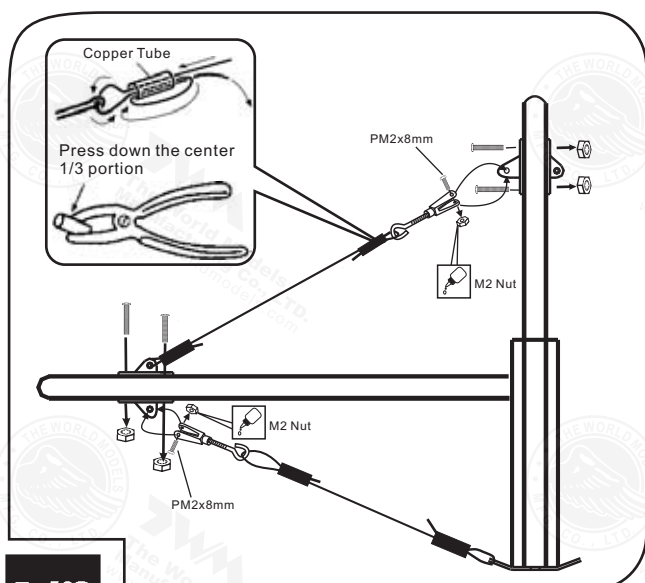
**L/R**



## 10 Rudder Pushrod

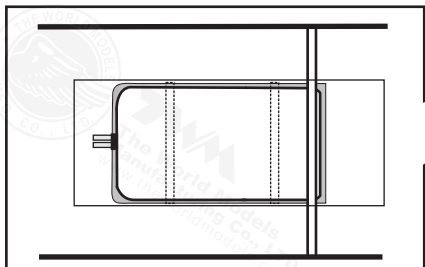


## 11 Flying Wire

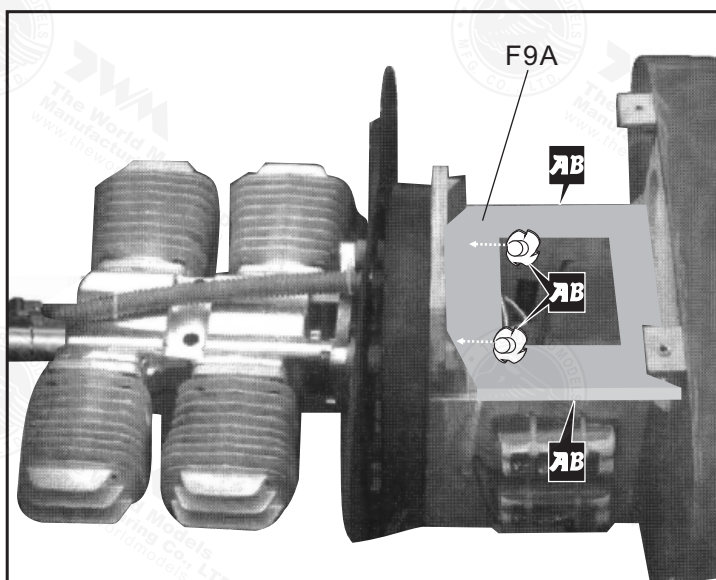
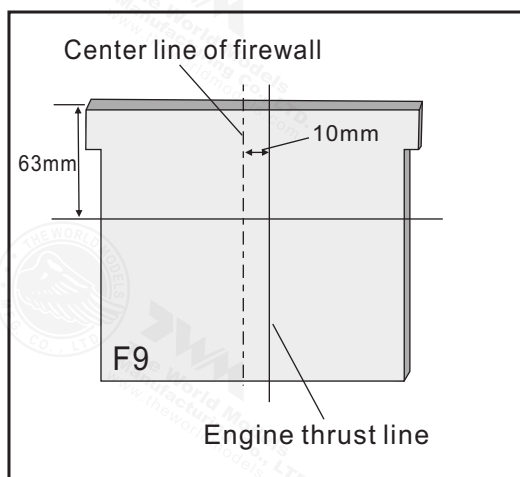


**L/R**

## 12 Fuel Tank

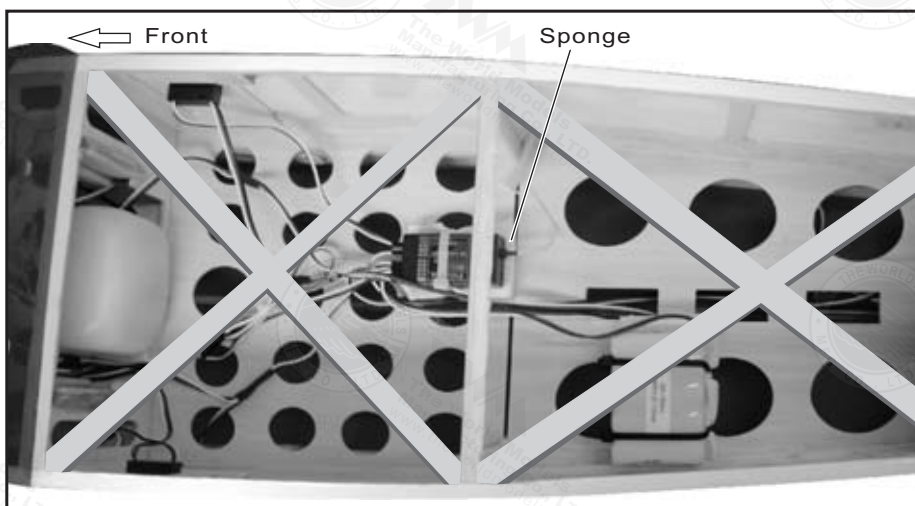


## 13 Engine



## 14 Radio Equipment

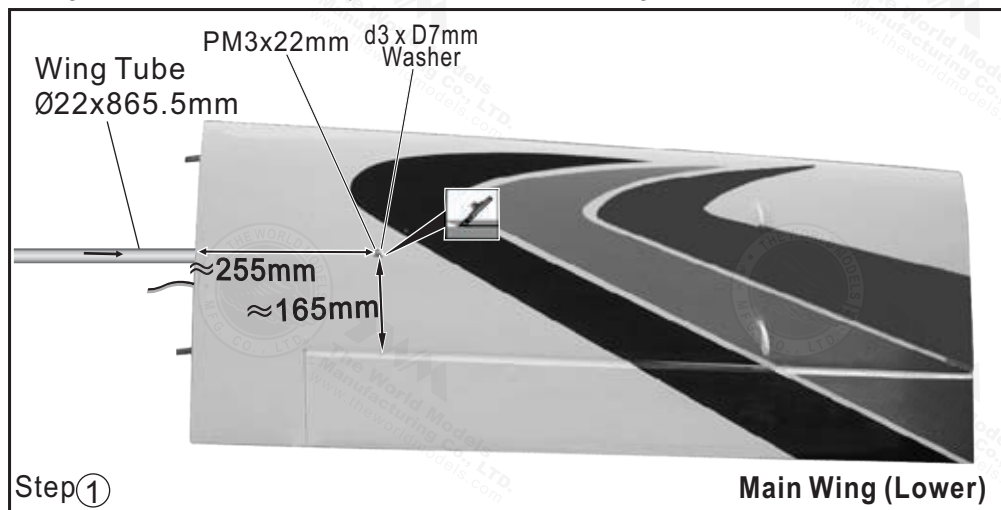
● Install and arrange the receiver and battery as shown in the diagram.



## 15 Main Wing (Lower)

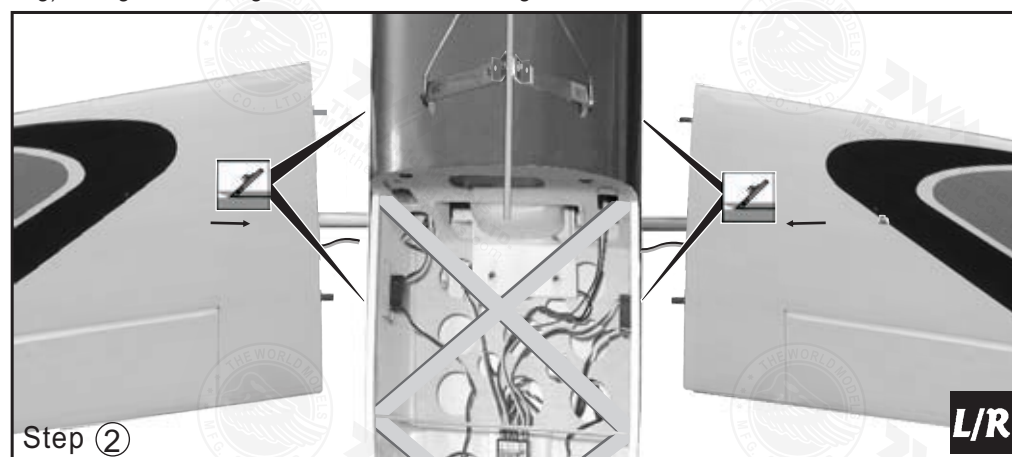
|                  |   |
|------------------|---|
| PM3x22mm Screw   | 1 |
| PA3x22mm Screw   | 1 |
| d3 x D7mm Washer | 2 |

Step 1. Insert the aluminum wing tube ( $\varnothing 22 \times 865.5 \text{mm}$ ) with the pre-drilled hole end into the right wing (lower). Align the lines marked at the wing root and wing tube, then apply the PM3x22mm machine screw through the pre-drilled hole on top of the wing. (Please confirm the alignment of the hole by putting a 2.5mm diameter rod through the pre-drilled wing hole before applying the screw.) The hole on the wing tube is pre-thread, do not over tighten the PM3 screw, the set up is for future removal of the wing.

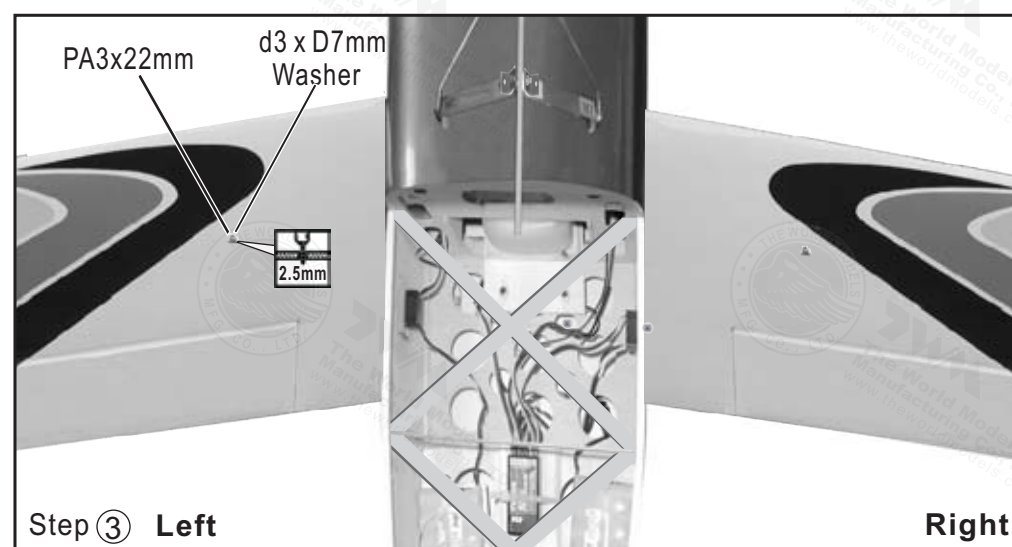


Step 2. Install the right wing to the fuselage by inserting the wing tube (now attached to the right wing) through the fuselage, then install the left wing.

### ● Top View



### ● Top View



Step 3. Make sure the wings are resting against the fuselage tightly. Locate the pre-drilled 2mm hole at top of left wing, and drill along with 2.5mm drill bit until it passes through the wing tube. Apply the PA3x22mm self-tapping screw.

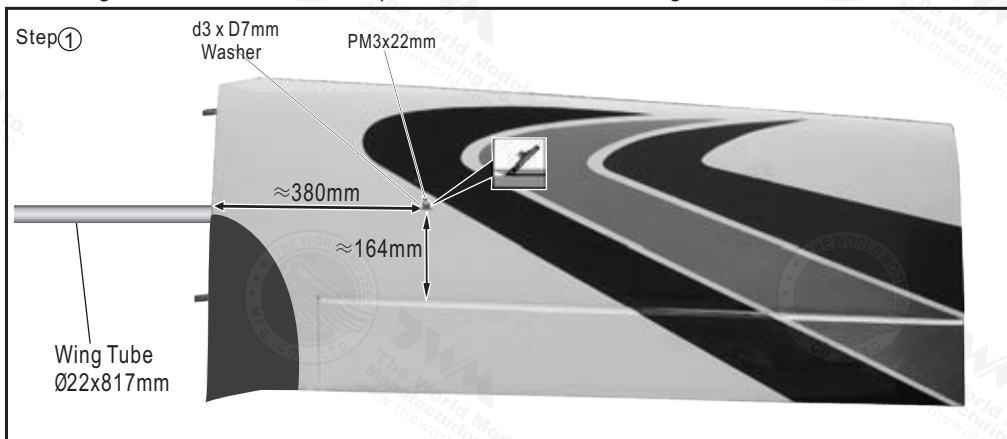
Note : It is recommended that the wing tube stays with the left wing. Removal of the wings could be achieved by removing the right wing machine screw, the right wing then the left wing with wing tube. If removal of wing tube from left wing is also required, it is recommended that instead of applying self-tapping screw in step 3, you pre-tap with M3 thread cutter and apply M3 machine screw.



## 16 Main Wing (Upper)

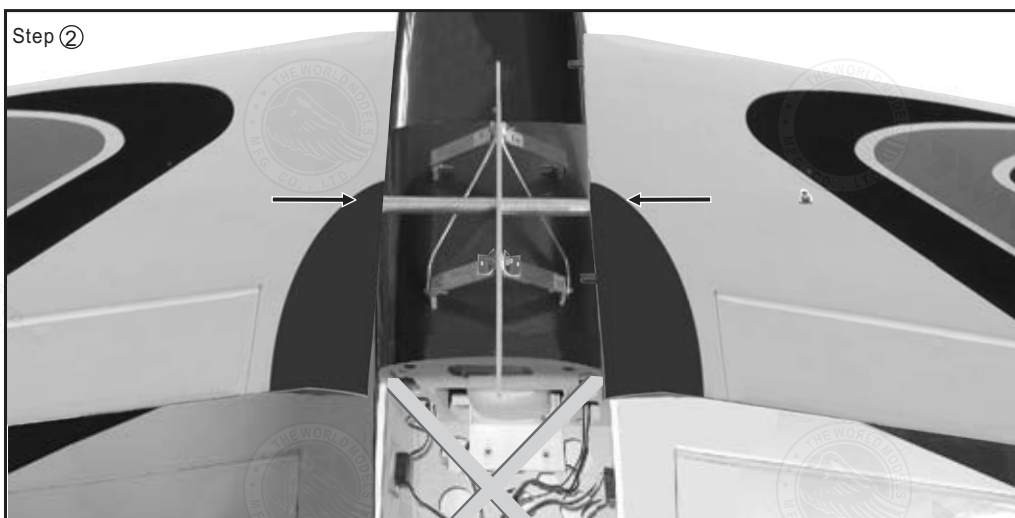
|                  |   |
|------------------|---|
| PM3x22mm Screw   | 1 |
| PA3x22mm Screw   | 1 |
| d3 x D7mm Washer | 2 |

Step 1. Insert the aluminum wing tube (Ø22x817mm) with the pre-drilled hole end into the right wing (upper). Align the lines marked at the wing root and wing tube, then apply the PM3x22mm machine screw through the pre-drilled hole on top of the wing. (Please confirm the alignment of the hole by putting a 2.5mm diameter rod through the pre-drilled wing hole before applying the screw.) The hole on the wing tube is pre-thread, do not over tighten the PM3 screw, the set up is for future removal of the wing.

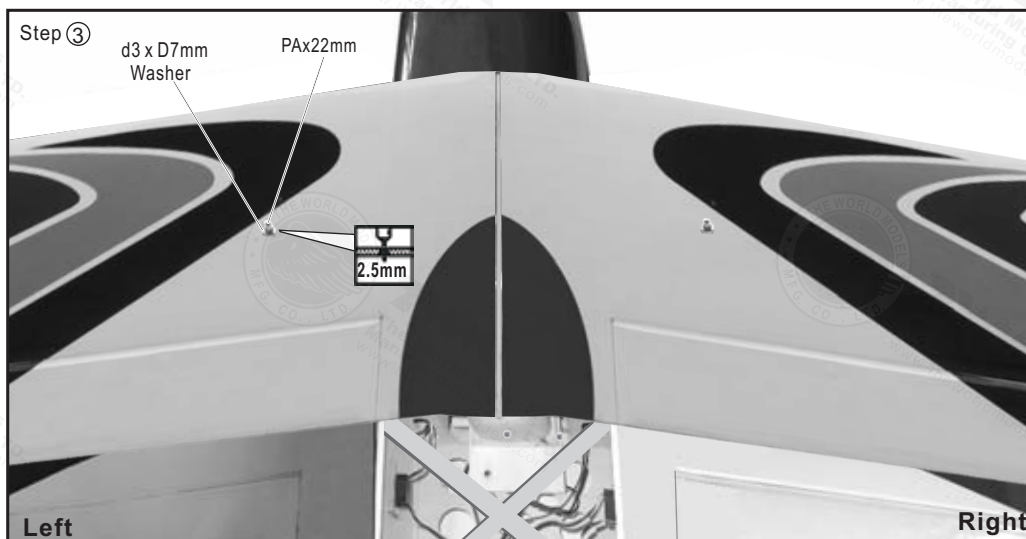


Step 2. Install the right wing to the center wing cabane by inserting the wing tube (now attached to the right wing) through the cabane, then install the left wing.

### ● Top View



### ● Top View

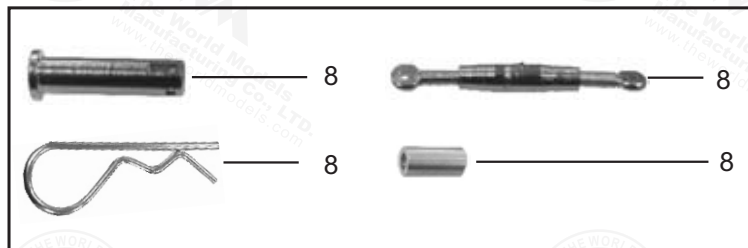


Step 3. Make sure the wings are resting against the center wing cabane tightly. Locate the pre-drilled 2mm hole at top of left wing, and drill along with 2.5mm drill bit until it passes through the wing tube. Apply the PA3x22mm self-tapping screw.

Note : It is recommended that the wing tube stays with the left wing. Removal of the wings could be achieved by removing the right wing machine screw, the right wing then the left wing with wing tube. If removal of wing tube from left wing is also required, it is recommended that instead of applying self-tapping screw in step 3, you pre-tap with M3 thread cutter and apply M3 machine screw.

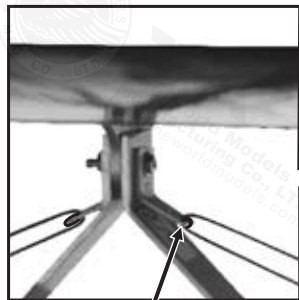


## 17 Outer Wing Cabanes & Flying Wire

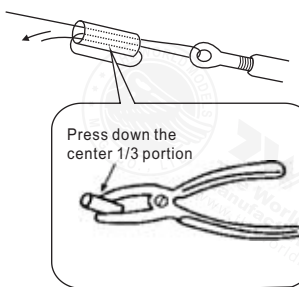
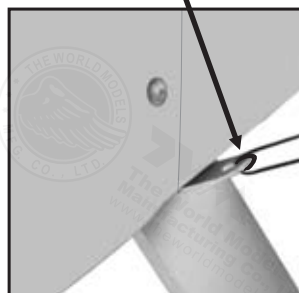
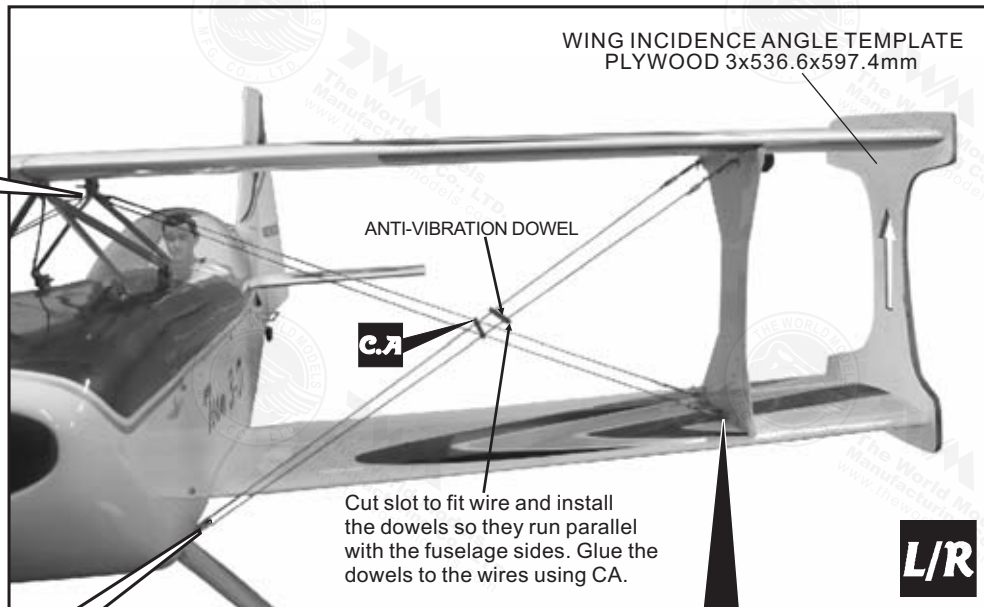


**Outer wing cabane should fit to the outside of outer wing cabane mounts.**

With the wing incidence angle template still in place, position the side cabanes, mark and drill the side cabane mounts and fasten with PM3x18mm screw and nut.

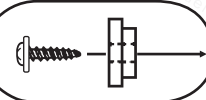
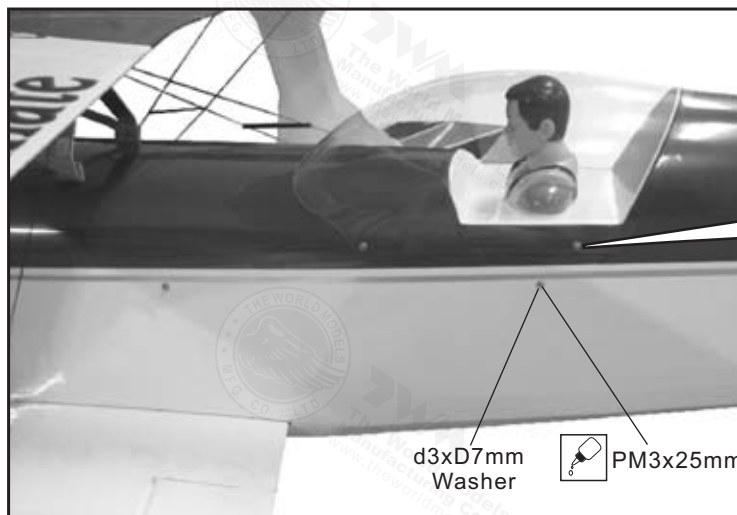
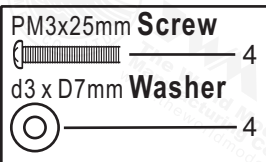


Once assembled, wire will remain permanently attached to center cabane and fuse bracket. Make sure that you triple wrap the wire in both places.



## 18 Canopy

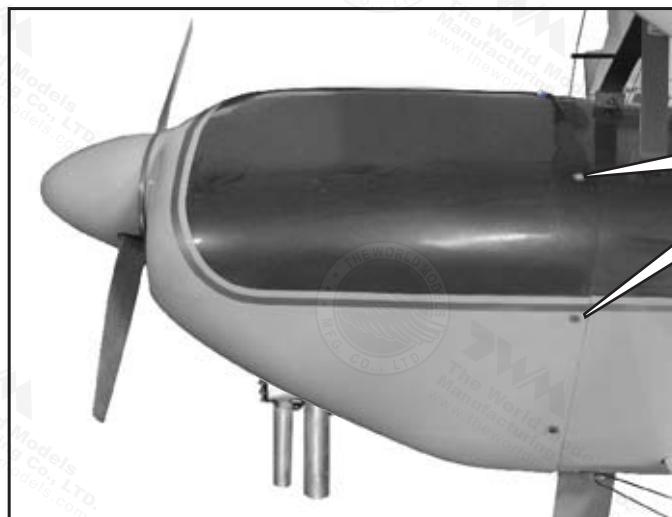
- First insert the grommet to the canopy then apply screw.



L/R

## 19 Cowling & Spinner

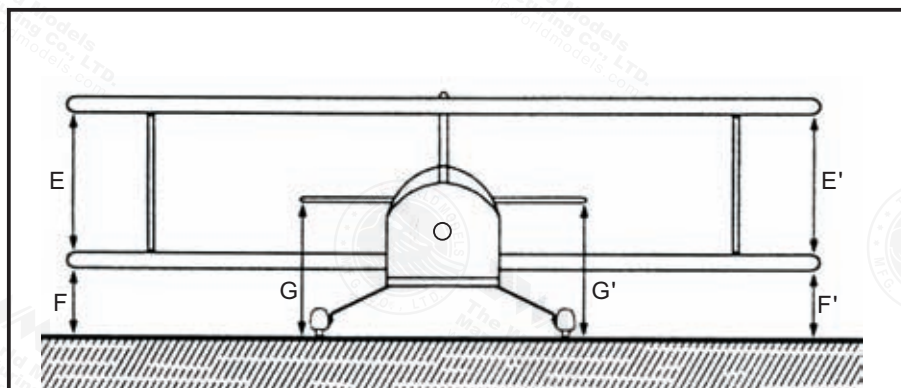
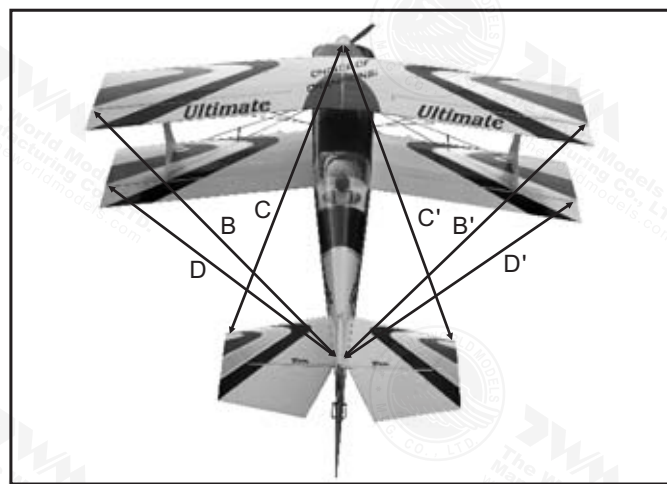
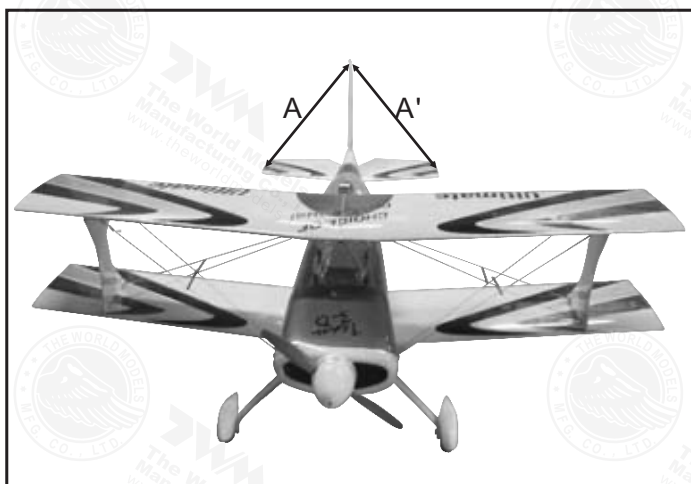
- First insert the grommet to the cowling then apply screw.



L/R

## 20 Wing Setting

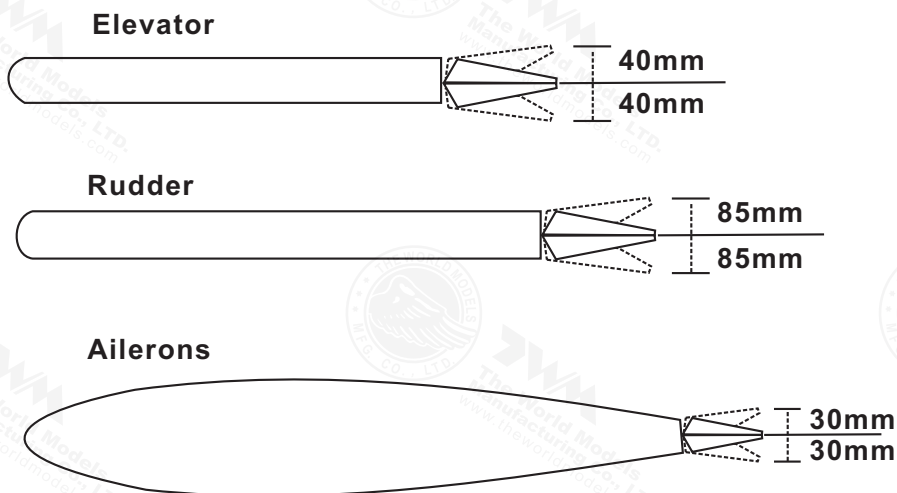
- Adjust the wing and fuselage configuration as in the diagrams.



$$A=A' \quad B=B' \quad C=C' \quad D=D' \quad E=E' \quad F=F' \quad G=G'$$

## 21 Control Throws

Adjust the control throws as shown in the diagram. These throws are good for general flying. You can adjust according to your personal preference.



## 22 C.G.

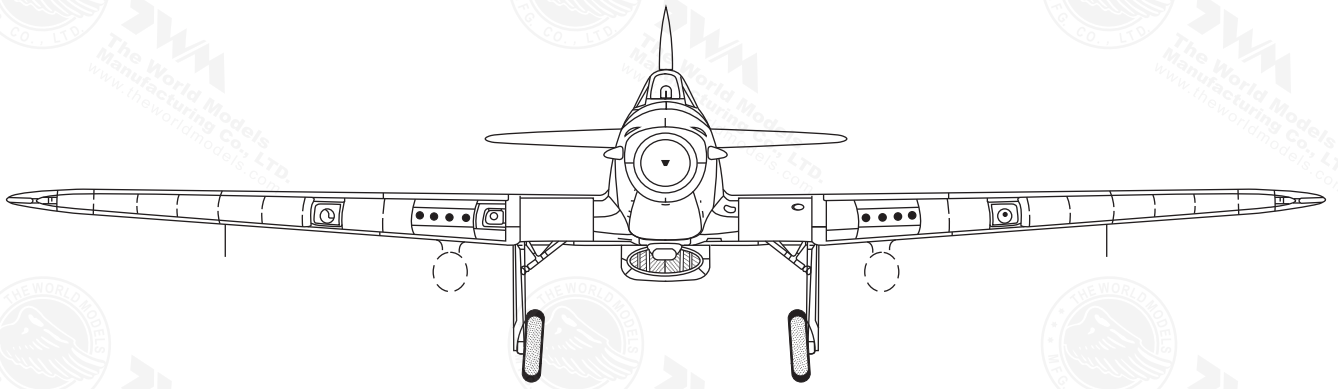
The ideal C.G. position is at center of top wing. You can Check the C.G. by hanging the plane with wire around the top wing tube. unscrew the right wing bolt will leave a gap for the wire. In order to obtain the C.G. specified, add weight to the fuselage or move the battery position. Check the C.G. before flying.



## ! Warning!

### Important Safety Precautions

- # First time flyer should never fly by himself / herself. Assistance from experienced flyer is absolutely necessary.
- # Pre-flight adjustment must be done before flying, it is very dangerous to fly a badly pre-adjusted aircraft.
- # **42% Ultimate** is specially designed to be powered by **150cc-200cc** gasoline engine, using a more powerful engine does not mean better performance. In fact, over powered engine may cause severe damage and injuries.
- # Make sure the air field is spacious, never fly the plane too close to people and never get too close to a running propeller.
- # If you find wrinkles on the covering as a result of weather changes, you can use hot iron to remove the wrinkles. Please begin with lower temperature setting and gradually raise the temperature until the wrinkles are gone. Too hot an iron may damage the covering.
- # Check and re-tighten up all factory assembled screws, use thread locker if applicable.



Ducted Fan

Pattern

Warbirds

Funfly

Scale

Electric

Sports

Glider

Trainer Boat

Accessories

Covering

(Lightex /oughlon)



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