

# P-51 MUSTANG G.S.



**1.60 cubic inch displacement 2-cycle (Glow)**

**1.80 cubic inch displacement 4-cycle (Glow)**

**Requires : 6-channel radio w/ 7 standard servos and 2 low profile retract servos**

## Specifications

<b>Wing Span</b>	<b>80.5 in / 2040 mm</b>
<b>Wing Area</b>	<b>1155 sq in / 74.5 sq dm</b>
<b>Flying Weight</b>	<b>15 lbs / 6800 g</b>
<b>Fuselage Length</b>	<b>70.5 in / 1790 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

# P-51 MUSTANG G.S.

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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. Warranty will not cover any parts modified by customer.
- 3 Symbols used throughout this instruction manual comprise of the following :-



Apply epoxy glue.



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



Apply thread locker



Must be purchased separately !



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).



Pierce the shaded portion  
covering film.



Pay close attention here!



Do not overlook this symbol !

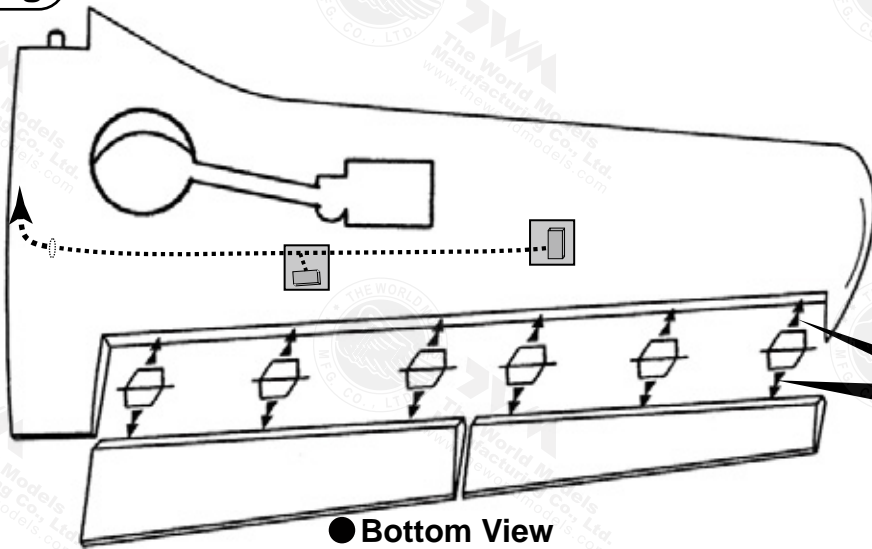


## Parts List

1. MAIN WING -- 1 pair
  2. RETRACTABLE LANDING GEAR --1 set  
RETRACTABLE LANDING GEAR COVER -- 1 pair  
M2 NUT -- 12 pcs  
SCREW PM2x8mm -- 12 pcs  
WASHER d2xD4mm -- 24 pcs  
BALSA 2.5x21x86mm (For Main Wheel Cover) -- 2 pcs
  3. WING TUBE Ø25.4x730mm -- 1 pc.  
WING TUBE Ø9.6x394mm -- 1 pc.
  4. SCREW PM3x75mm -- 2 pcs  
WASHER d3xD7mm -- 8 pcs  
SCREW PM3x12mm -- 2 pcs  
M3 NYLON INSERT LOCK NUT -- 2 pcs  
M3 NUT -- 2 pcs  
ALUMINUM PLATE 2.3mm (For Main Wing) -- 4 pcs
  5. LINKAGE CONNECTOR Ø2.1mm HW7111060 -- 2 sets  
COVERING FILM 45x80mm -- 2 pcs
  6. SCREW PWA2x8mm -- 16 pcs  
PLYWOOD 2x65x80.5mm (Aileron & Flap Servo Stand) -- 4 pcs  
BALSA 8x18x21mm (For Aileron & Flap Servo) -- 8 pcs
  7. SCREW PB2x30mm -- 6 pcs  
SCREW PB2x25mm -- 6 pcs  
FUEL TUBE Ø6x5mm -- 8 pcs  
STRAPER PL4112102 -- 4 pcs  
CLEVIS PL4112103 -- 4 pcs  
TRI-HORN M3x14mm (L) PL4111185 -- 4 sets  
PUSHROD Ø1.8x80mm w/ Threads (For Aileron Servos) -- 2 pcs  
PUSHROD Ø1.8x85mm w/ Threads (For Flap Servos) -- 2 pcs
  8. FUSELAGE -- 1 pc.  
STRABILIZER & ELEVATOR -- 1 set  
STRABILIZER TUBE Ø9.6x260mm -- 1 pc.  
SCREW PWA3x12mm -- 2 pcs
  9. SCREW PB2x20mm -- 6 pcs  
FUEL TUBE Ø6x5mm -- 2 pcs  
CLEVIS PL4112103 -- 2 pcs  
TRI-HORN M3x14mm (L) PL4111185 -- 2 sets  
PUSHROD Ø1.8x685mm w/ Threads (For Elevator) -- 2 pcs
  10. VERTICAL FIN & RUDDER -- 1 set
  11. TAIL LANDING GEAR PL7100002 -- 1 set  
TAIL WHEEL Ø30mm PL3111300 -- 1 pc.  
COLLAR Ø2.6mm w/ set screw -- 1 set  
SCREW PA3x12mm -- 2 pcs
  12. SCREW PB2x30mm -- 3 pcs  
TRI-HORN M3x14mm (L) PL4111185 -- 1 set  
FUEL TUBE Ø6x5mm -- 1 pc.  
CLEVIS PL4112103 -- 1 pc.  
PUSHROD Ø1.8x845mm w/ Threads (For Rudder) -- 1 pc.
  13. ENGINTE MOUNT PL5911120 -- 1 set  
SOCKTE HEAD SCREW M6x30mm -- 4 pcs  
WASHER d6xD15mm -- 4 pcs  
BLIND NUT M6xD18mm HW130600S -- 4 pcs  
WOODEN DOWEL Ø7x10mm (For Firewall) -- 4 pcs
  14. FUEL TANK 800cc PL1111810N -- 1 set  
CABLE TIE 1.5x8x400mm -- 1 pc.  
DOUBLE-SIDE TAPE 40x160mm -- 1 pc.
  15. SPINNER (w/ alu.back plate) Ø127mm PH22W1270 --1 set  
THROTTLE PUSHWIRE Ø1.2x460mm -- 1 pc.  
PLASTIC TUBE d2xD3x280mm -- 1 pc.  
ANTI-VIBRATION MOUNT 4C-120 PL5214095 -- 1 set  
INCLUDE: SOCKET HEAD SCREW M4x35mm -- 4 pcs  
SCREW KM3x20mm -- 8 pcs  
WASHER d4xD12mm -- 8 pcs  
NYLON INSERT LOCK NUT M3 -- 8 pcs  
NYLON INSERT LOCK NUT M4 -- 4 pcs  
ALUMINUM PLATE 1x12x75mm (For Engine Mount) -- 1 pc.
  16. COWLING -- 1 pc.  
TRANSPARENT 3D TEMPLATE -- 1 pc.  
SCREW PWA2.6x12mm -- 4 pcs  
SILICON GROMMET d1.5xD6.5mm PL1265035 -- 4 pcs
  17. UNDER COWLING -- 1 pc.  
SCREW PWA2.6x12mm -- 2 pcs  
SCREW PWA2.3x8mm -- 6 pcs  
SILICON GROMMET d1.5xD6.5mm PL1265035 -- 8 pcs
  18. LINKAGE CONNECTOR Ø2.1mm HW7111060 -- 1 set
  19. PLYWOOD 3x41x152.5mm (For Throttle Servo Stand) -- 1 pc.  
PLYWOOD 3x10x20mm (For Throttle Servo Stand) -- 1 pc.  
PLYWOOD 6x10x41mm (For Throttle Servo Stand) -- 1 pc.  
PLYWOOD 9x40x142mm (For Elevator Servo Stand) -- 1 pc.  
PLYWOOD 9x40x142mm (For Rudder Servo Stand) -- 1 pc.  
BALSA 6x6x40mm (For Elevator&Rudder Servos Stand) -- 4 pcs  
PUSHROD CONNECTOR PL4410010 -- 1 set  
STRAPER PL4112102 -- 2 pcs  
FUEL TUBE Ø6x5mm -- 2 pcs  
PUSHROD Ø1.8x55mm (For Elevator) -- 1 pc.  
SPONGE 60x70x143mm (For Radio Equipment) --1 pc.
  20. SCREW HM4x40mm -- 2 pcs  
WASHER d4xD15mm -- 2 pcs  
PLYWOOD 3x25x128mm (Wing Protection) -- 1 pc.
  21. SCREW PWM3x13mm -- 3 pcs  
AIR SCOOP -- 1 pc.
  22. CANOPY -- 1 pc.  
PILOT PC001102A -- 1 pc.  
DOUBLE SIDED TAPE 6x600mm -- 1 pc.  
SCREW PWA2.3x12mm -- 6 pcs  
SILICON GRONNET d1.5xD6.5mm PL1265035 -- 6 pcs
  23. DCALS: A100SDEC -- 1 set
- COVERING:-  
TOUGHLON STL100 WHITE  
TOUGHLON STL201 BLACK  
TOUGHLON STL312 BRIGHT RED  
TOUGHLON STL330 CADMIUM YELLOW  
TOUGHLON STL351 DARK BLUE  
TOUGHLON STL370 SILVER



# 1 Main Wing

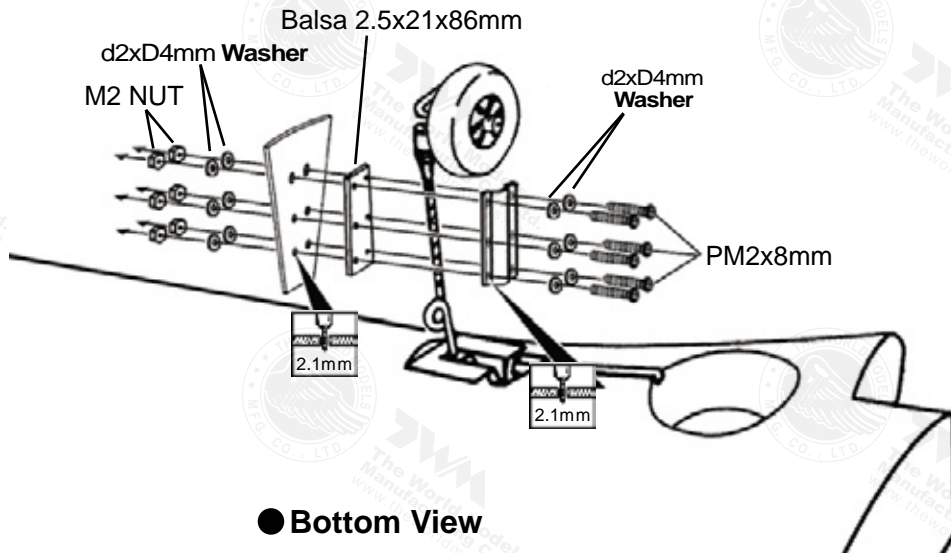


**L/R**

● Bottom View

# 2 Retractable Landing Gear

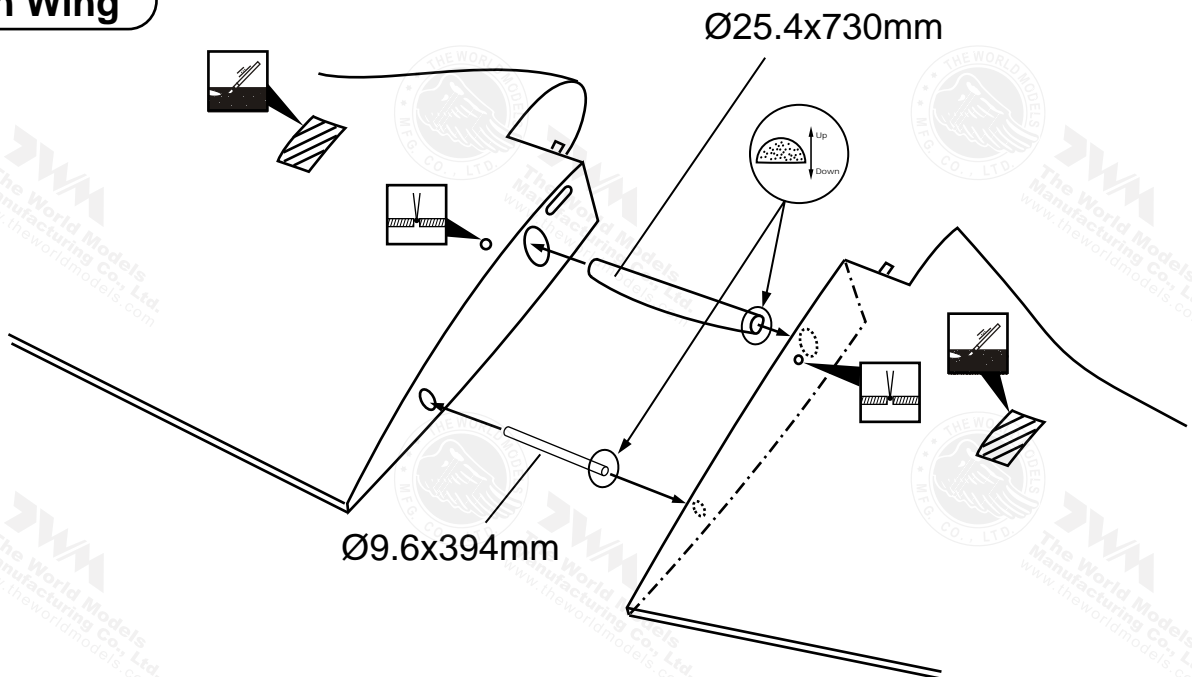
- PM2x8mm Screw — 12
- d2xD4mm Washer — 24
- M2 NUT — 12



● Bottom View

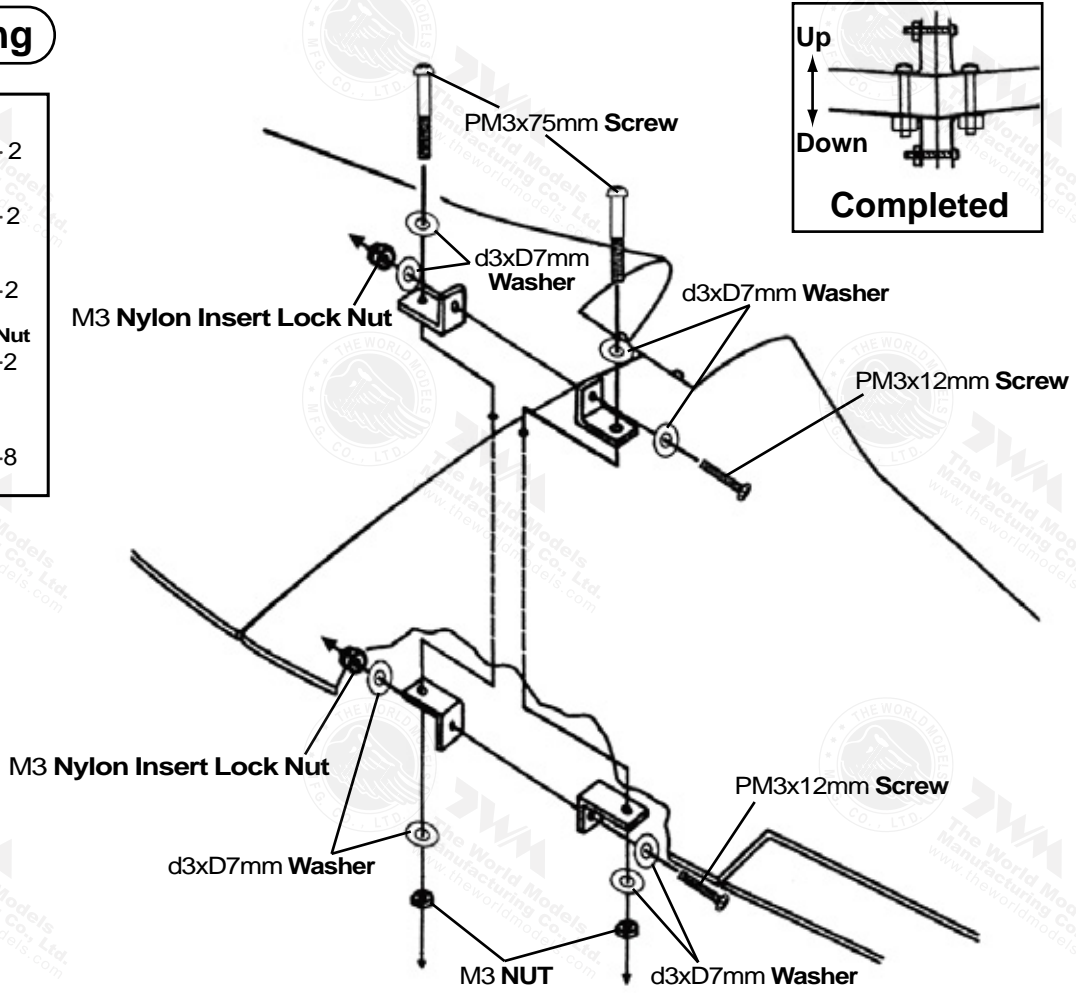
**L/R**

# 3 Main Wing



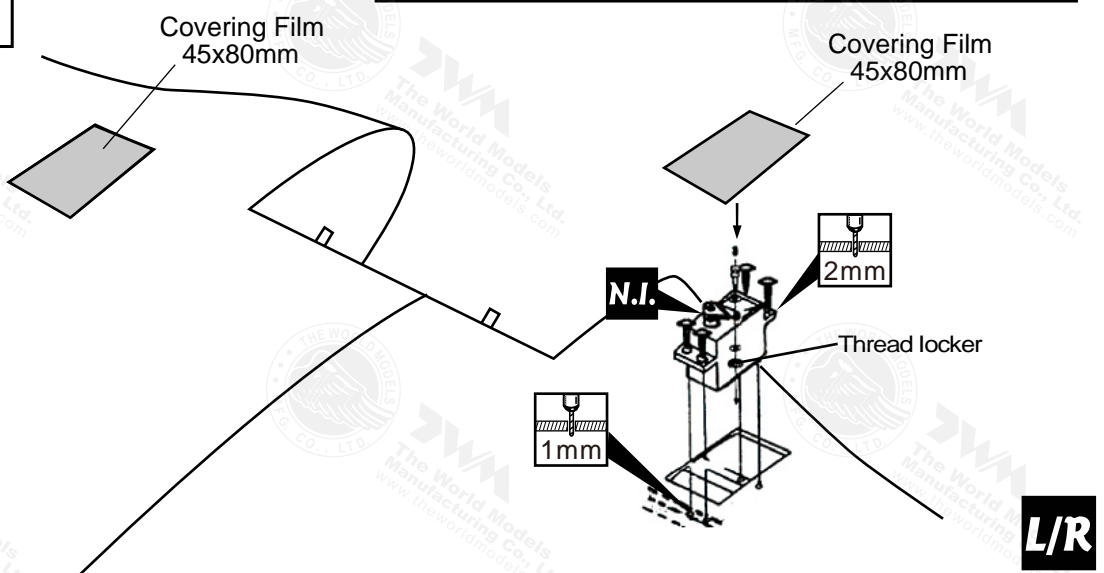
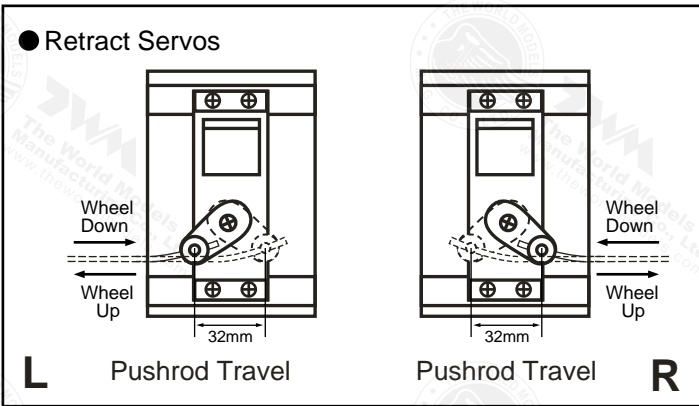
## 4 Main Wing

- PM3x75mm Screw — 2
- PM3x12mm Screw — 2
- M3 NUT — 2
- M3 Nylon Insert Lock Nut — 2
- d3xD7mm Washer — 8




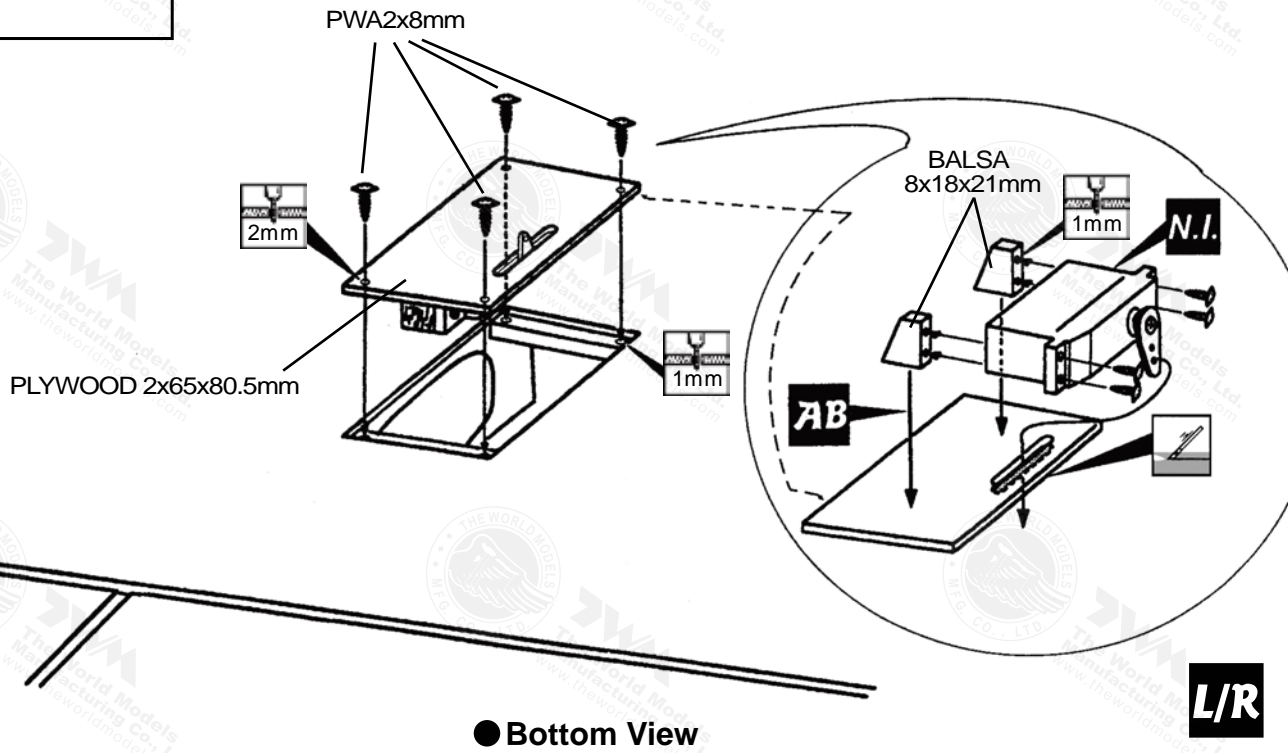
## 5 Landing Gear Servo

- LINKAGE CONNECTOR**
- 3mm Screw — 2
  - Linkage Connector — 2
  - 2mm Nut — 2
  - 2mm Washer — 2
  - 2mm Washer — 4




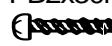
## 6 Flap & Aileron Servo

**PWA2x8mm Screw**  
 16

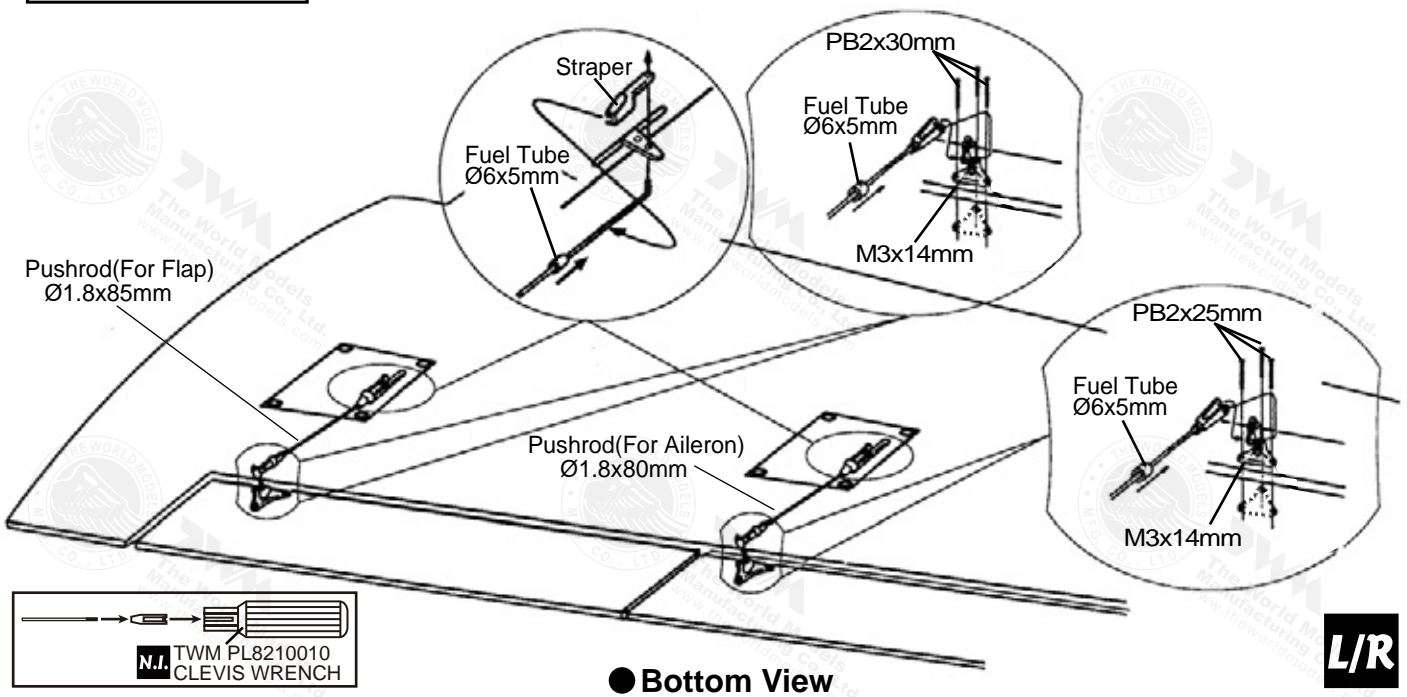


## 7A Flap & Aileron Servo

**PB2x25mm Screw**  
 6

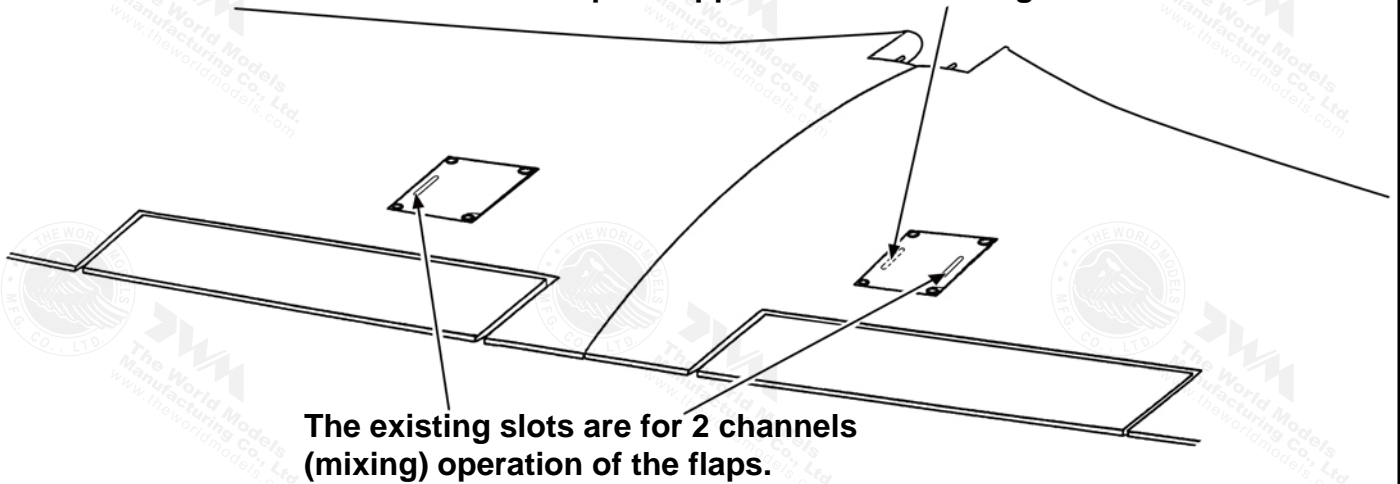
**PB2x30mm Screw**  
 6

● Ø1mm pilot holes for World Models tri-horn are pre-drilled.  
 Please look for pin-hole marks at under side of control surfaces.



## 7B Flap Servo

If you use one channel operation of the flaps, connect the two servos by Y-harness and cut slot on one of the servo holder plate opposite to the existing slot.



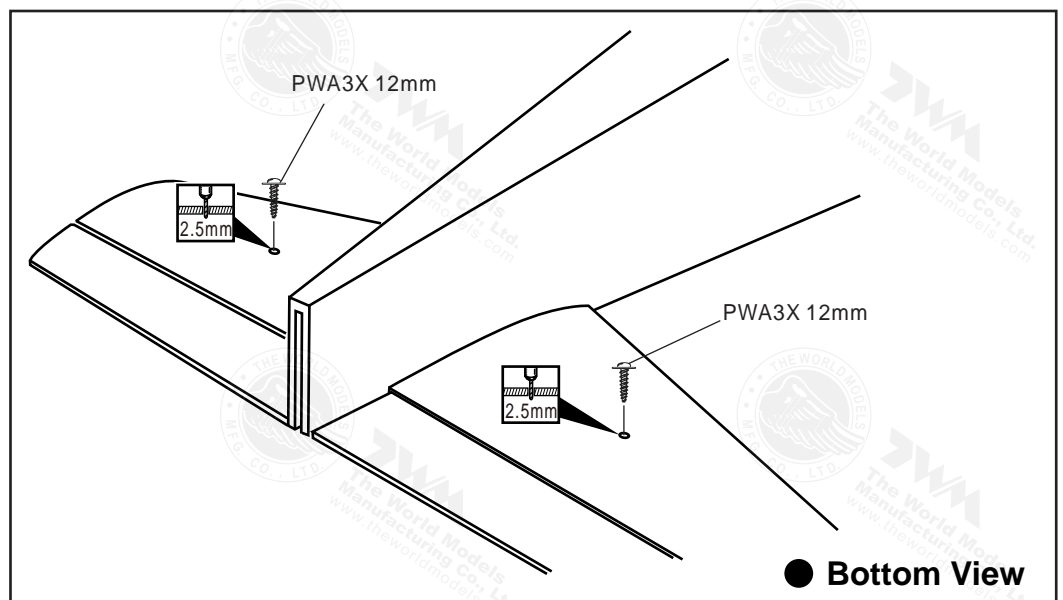
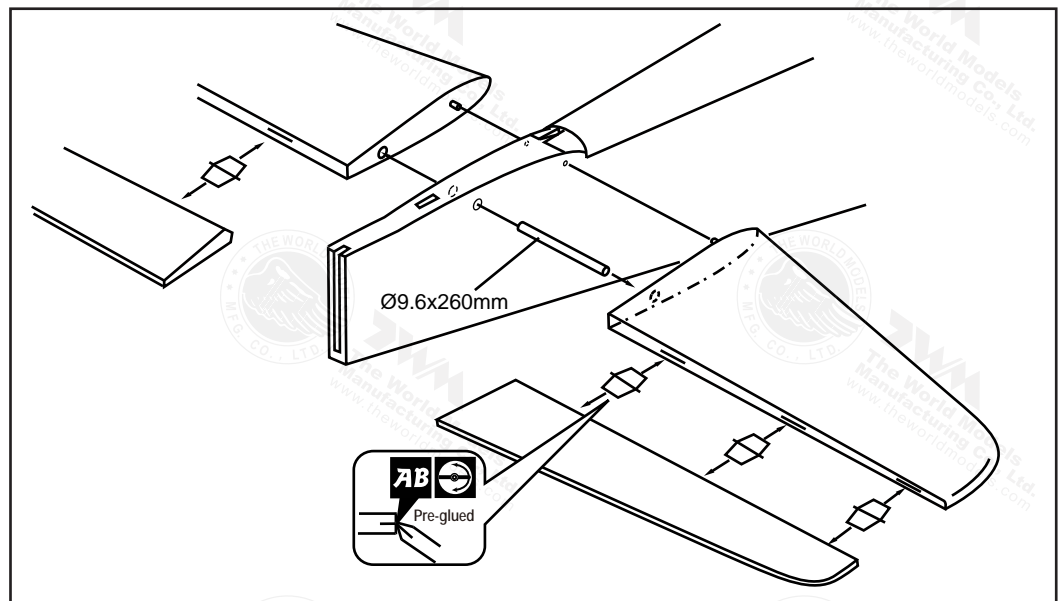
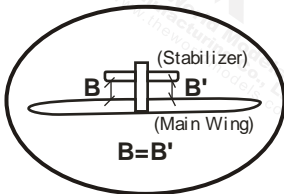
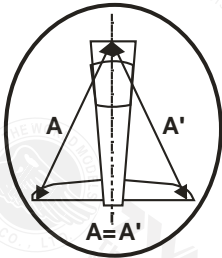
The existing slots are for 2 channels (mixing) operation of the flaps.

● Bottom View

## 8 Stabilizer & Elevator

PWA3X 12mm Screw

2



● Bottom View

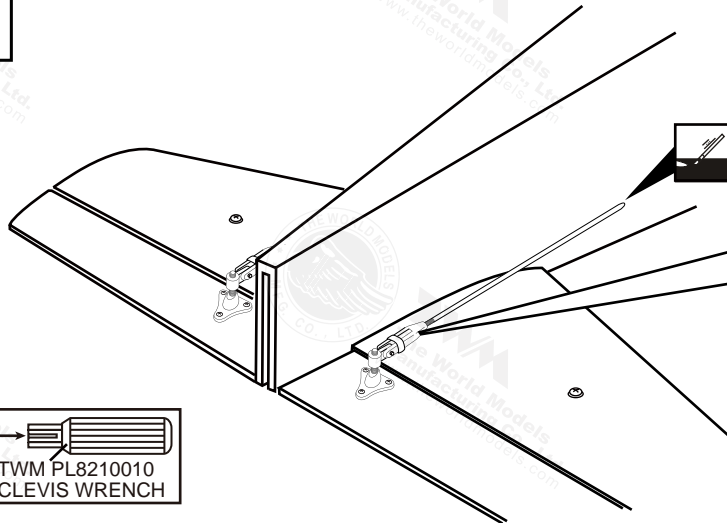
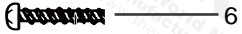
L/R



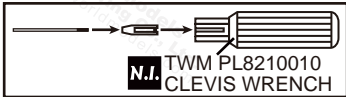
## 9 Elevator Pushrod

Ø1mm pilot holes for World Models tri-horn are pre-drilled.  
Please look for pin-hole marks at under side of control surfaces.

PB2x20mm Screw

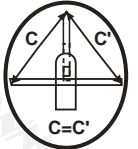
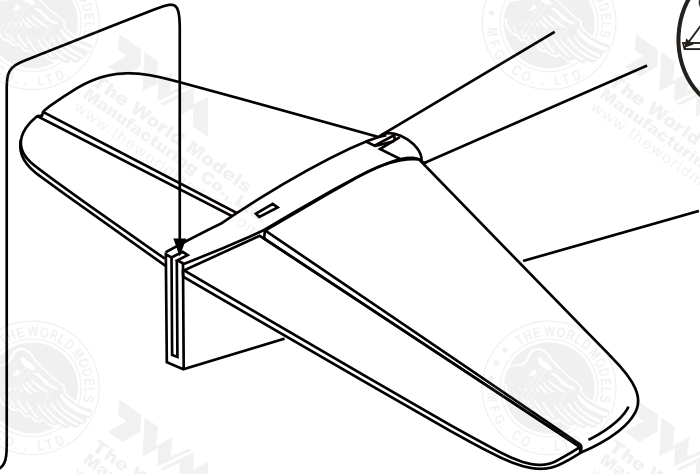
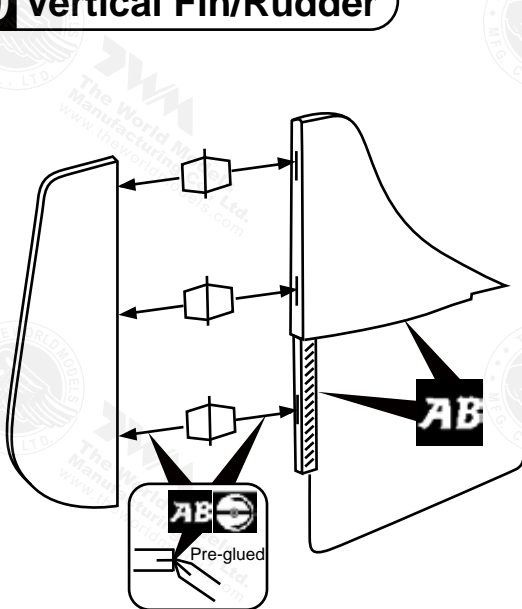


**L/R**



● Bottom View

## 10 Vertical Fin/Rudder



## 11 Tail Landing Gear

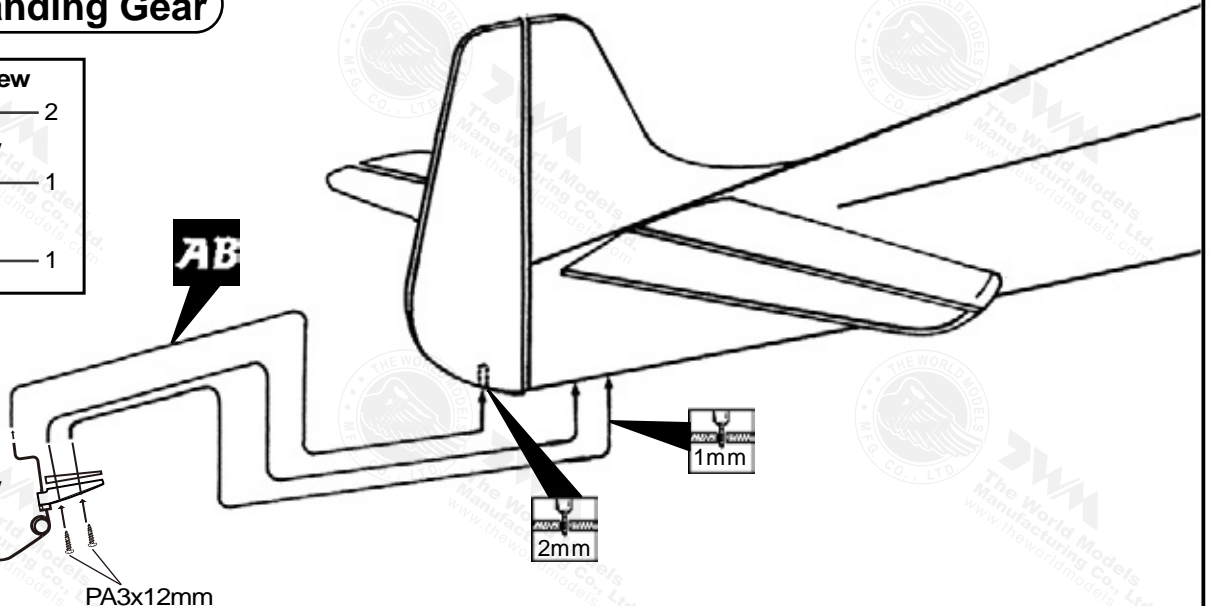
PA3x12mm Screw



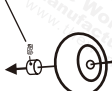
3mm Set Screw



2.1mm Collar



3mm Set Screw

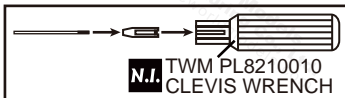
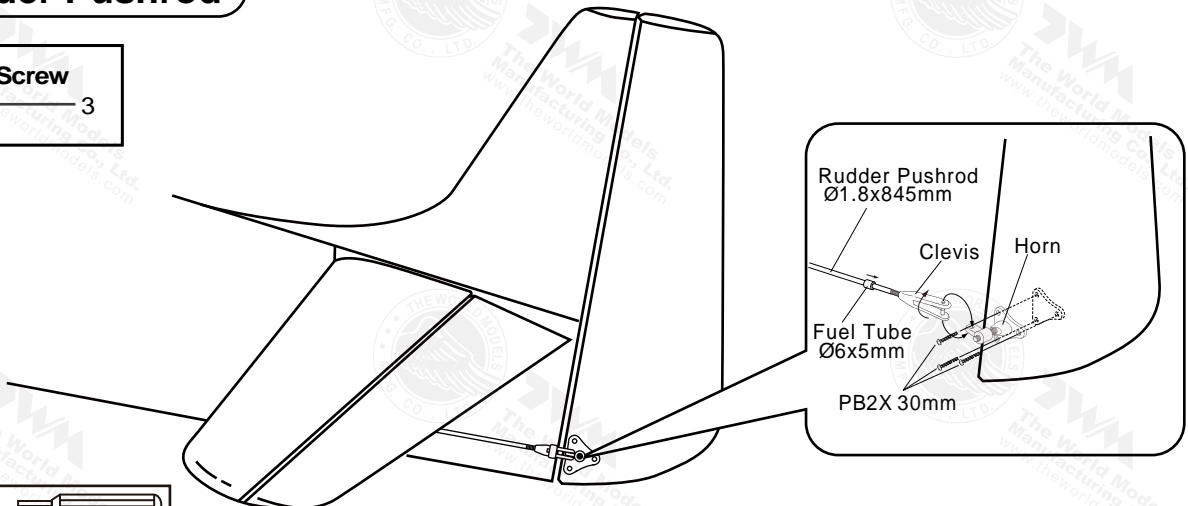
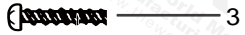


PA3x12mm



## 12 Rudder Pushrod

PB2x30mm Screw



Ø1mm pilot holes for World Models tri-horn are pre-drilled. Please look for pin-hole marks at side of control surfaces.

## 13 Engine Mount

M6x30mm Socket Head Screw



d6xD15mm

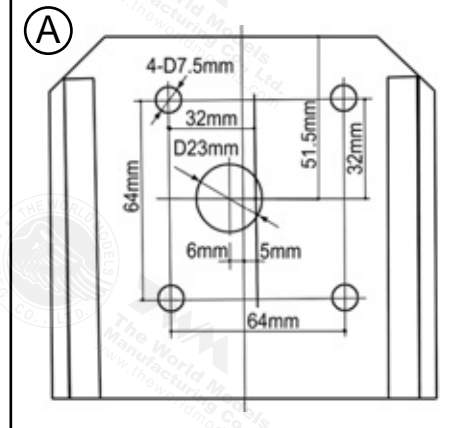
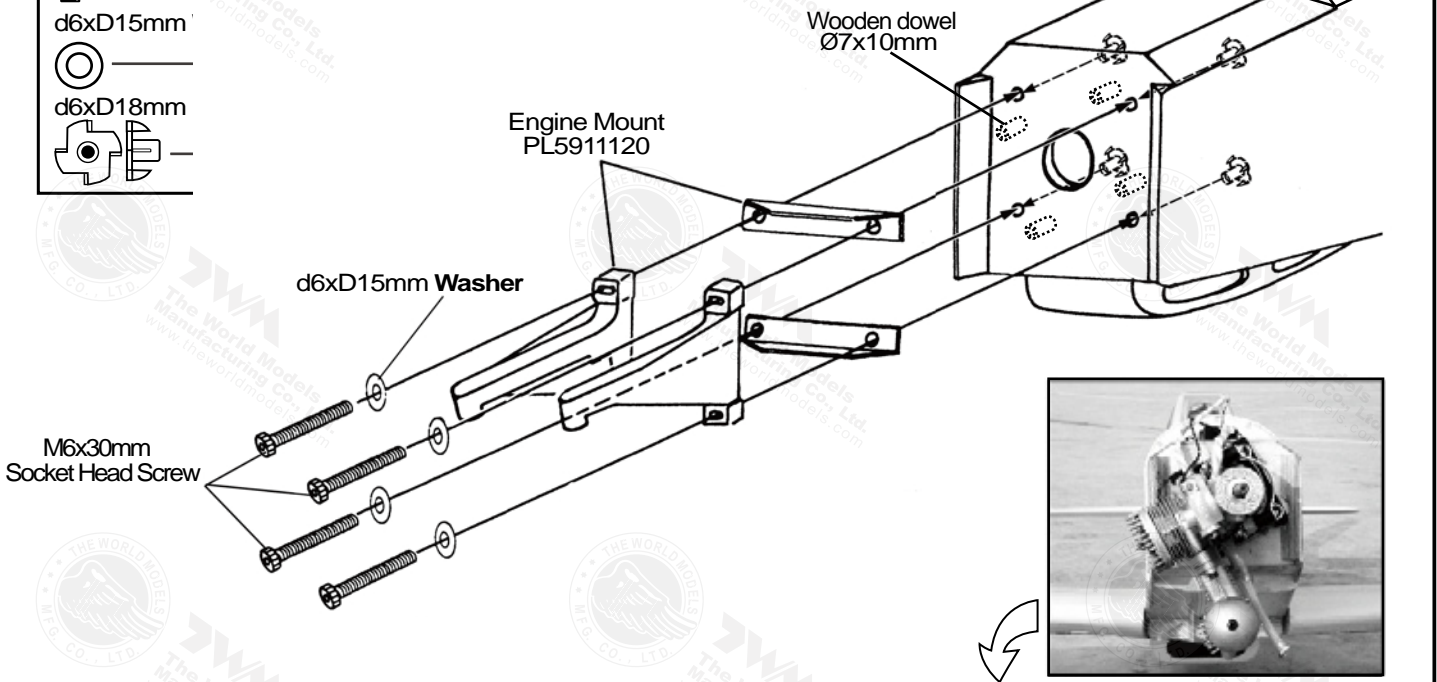


d6xD18mm

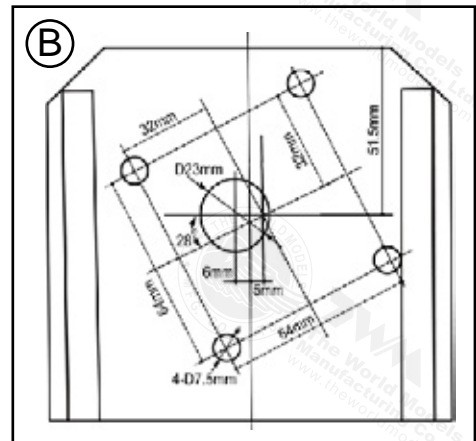


● Apply thread locker to screws.

! Blind nuts are off-centered to keep the spinner at the fuselage axis.

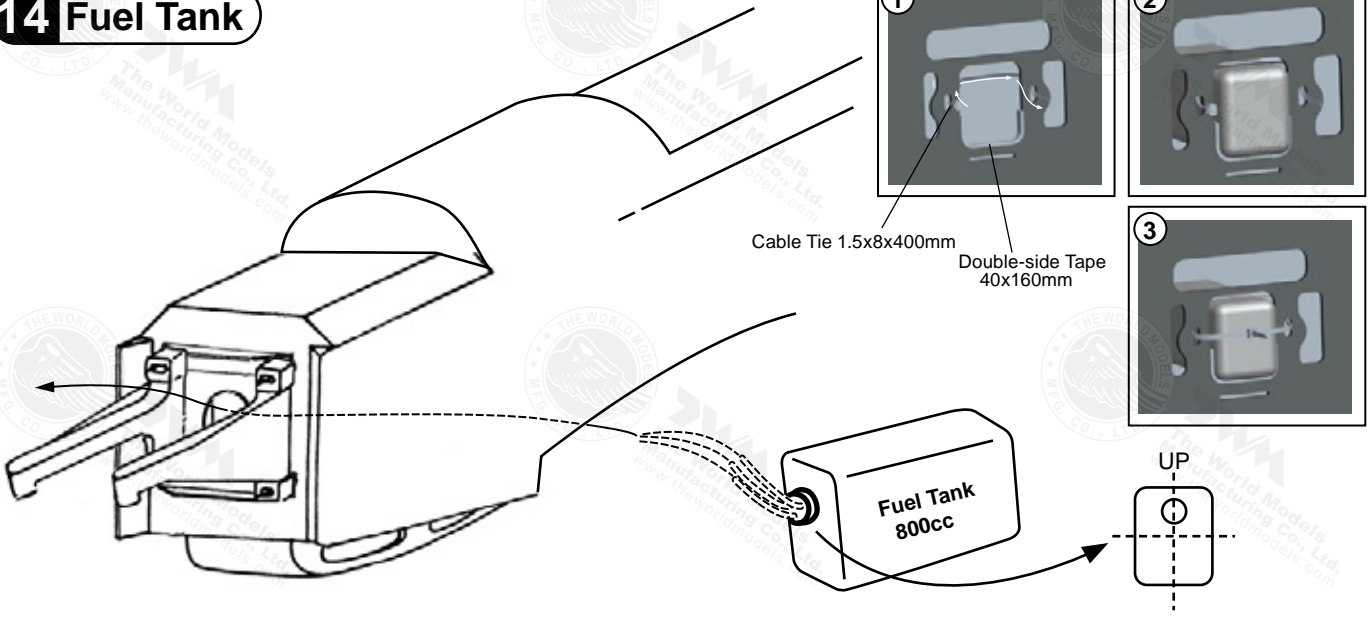


A. Inverted mount with Pitts type muffler.



B. Inverted mount for stock muffler installation.

# 14 Fuel Tank



# 15 Engine

- M4x35mm Socket Head Screw — 4
- d4xD12mm Washer — 8
- M3 Nylon Insert Lock Nut — 8
- M4 Nylon Insert Lock Nut — 4
- KM3x20mm Screw — 8

**!** Illustration is for inverted mounting. You can mount the engine upright or sideways simply by rotation the engine mount. Thrust angles will not be affected.

Plastic tube d2xD3x280mm

Throttle Pushwire Ø1.2x460mm

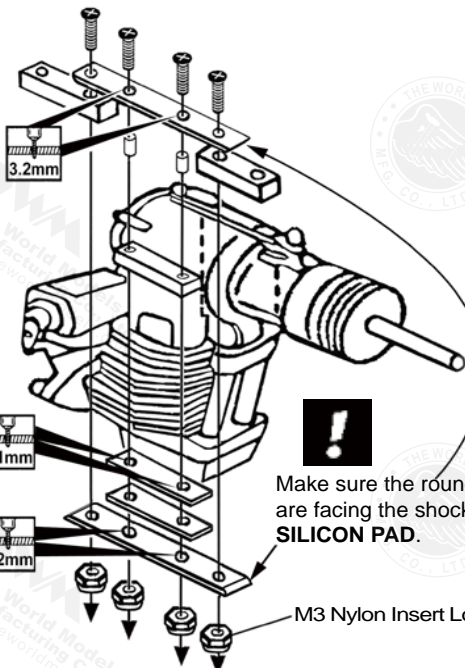
M4 Nylon Insert Lock Nut  
d4xD12mm Washer

AB

d4xD12mm Washer

M4x35mm Socket Head Screw

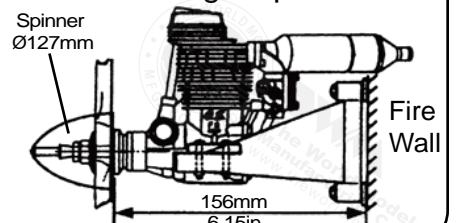
## ANTI-VIBRATION MOUNT INSTALLATION



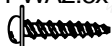

**!** Make sure the rounded edges are facing the shock absorbing SILICON PAD.

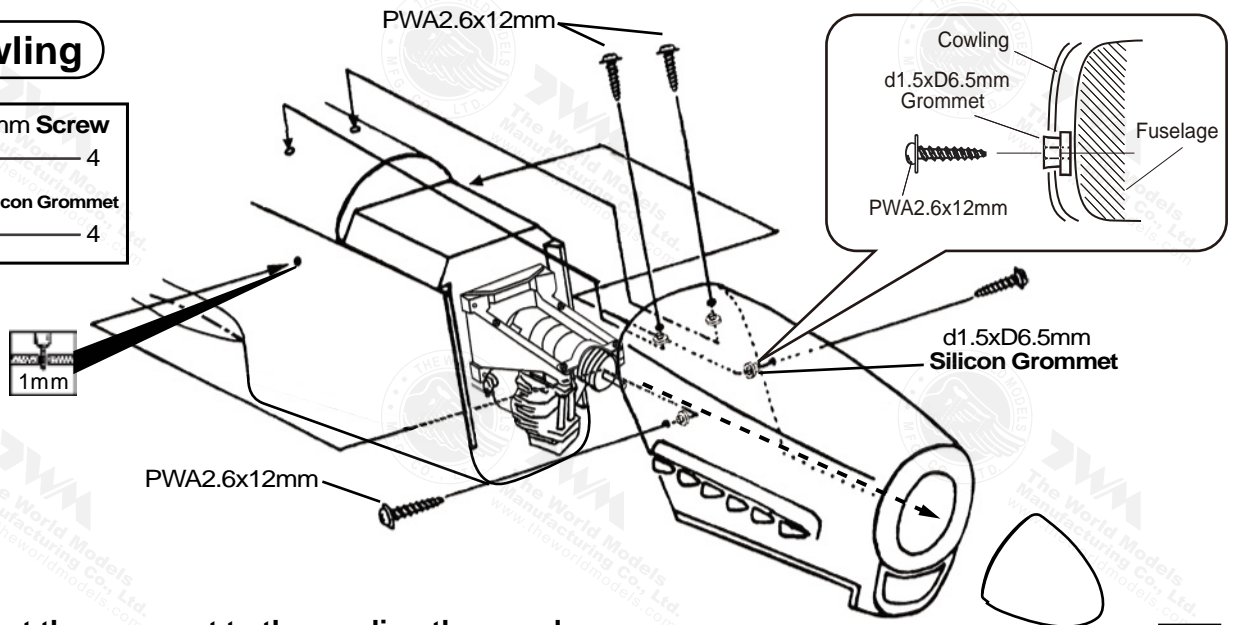
L/R

## Install Engine position



## 16 Cowling

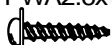


	PWA2.6x12mm Screw	4
	d1.5xD6.5mm Silicon Grommet	4

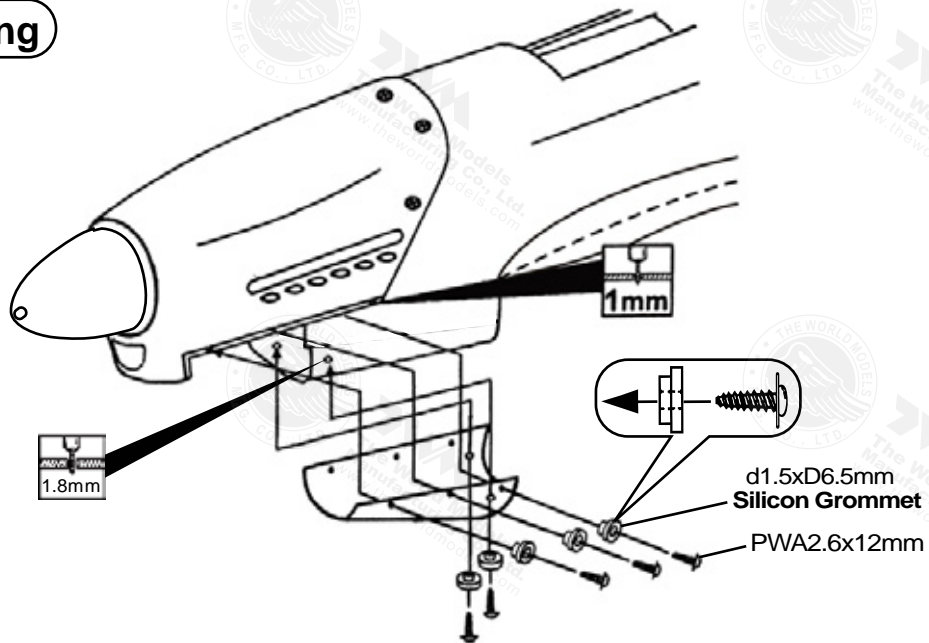


- First insert the grommet to the cowling then apply screw. Please refer to the attached sheet for usage of the transparent 3D template.

**L/R**





## 17 Under Cowling

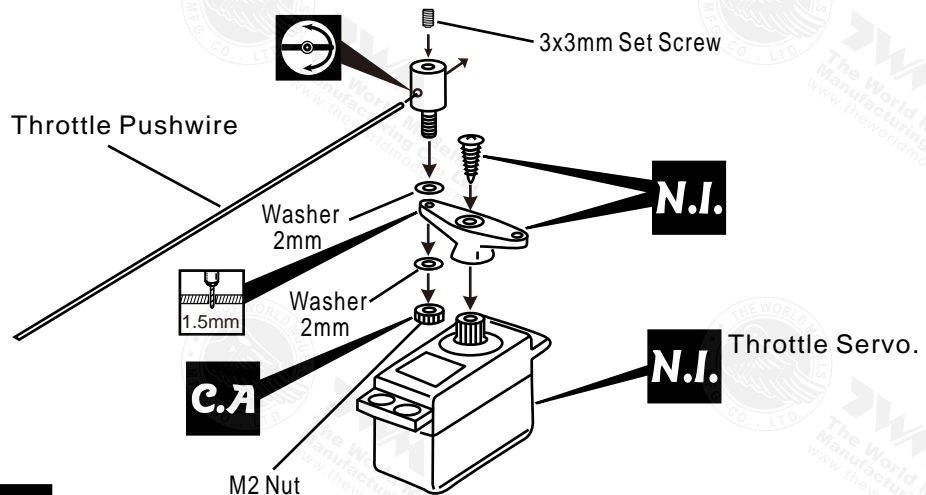
	PWA2.6x12mm Screw	2
	PWA2.3x8mm Screw	6
	d1.5xD6.5mm Silicon Grommet	8



**L/R**

## 18 Servo Set

	3x3mm Set Screw	1
	Linkage Connector	1
	M2 Nut	1
	2mm Washer	2

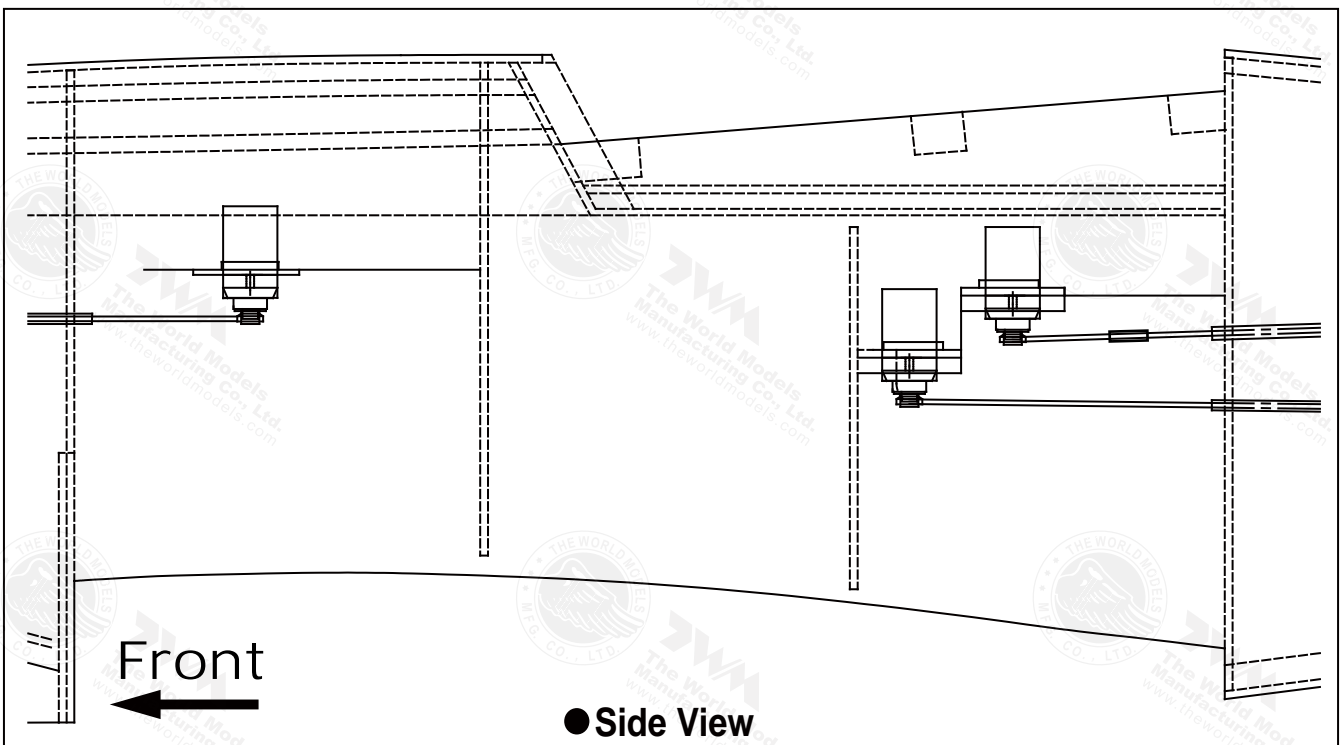
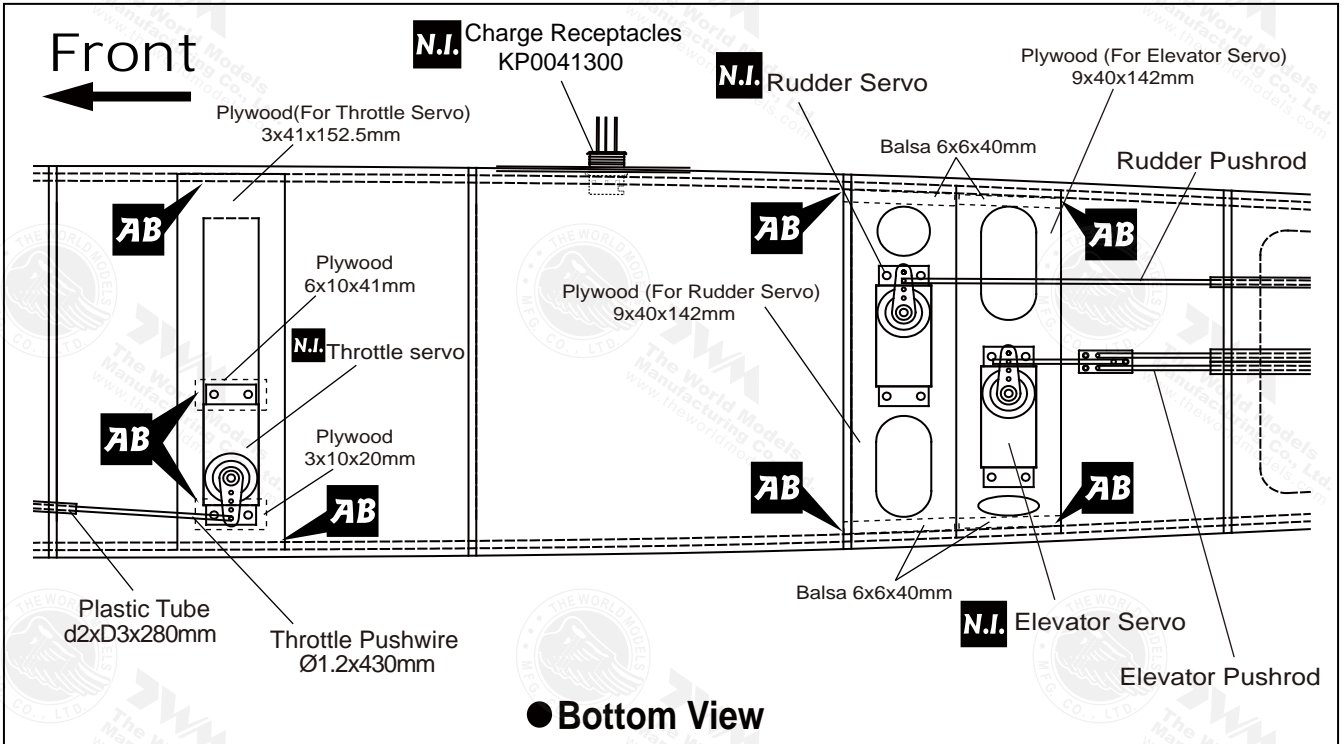
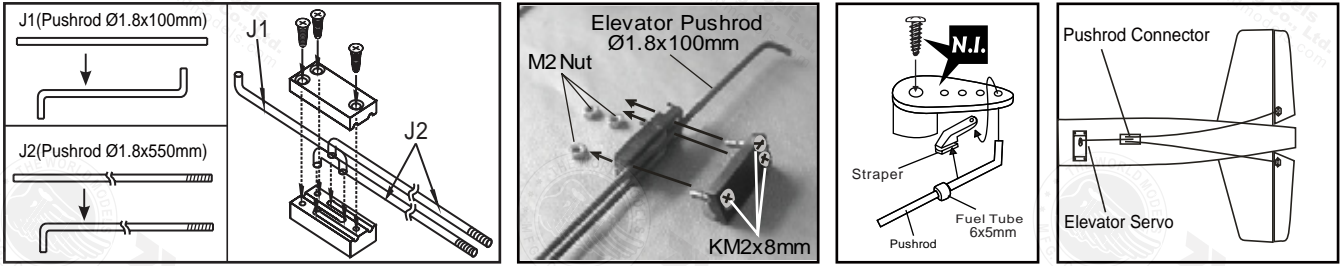


Please refer to the attached sheet for linkage connector installation.



# 19 Radio Equipment

● Install and arrange the servos as shown in the diagram.



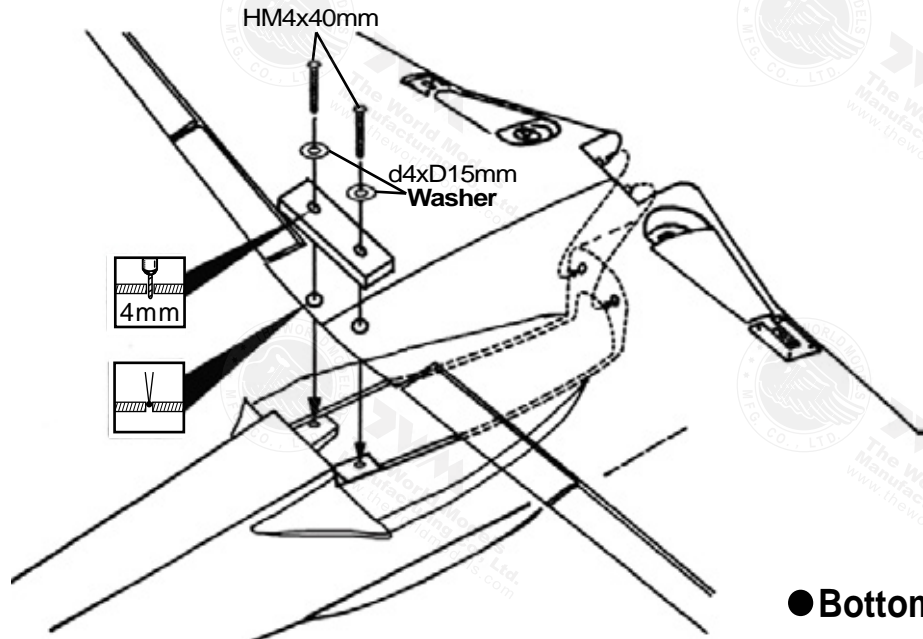
## 20 Main Wing

HM4x40mm Screw

— 2

d4xD15mm Washer

— 2

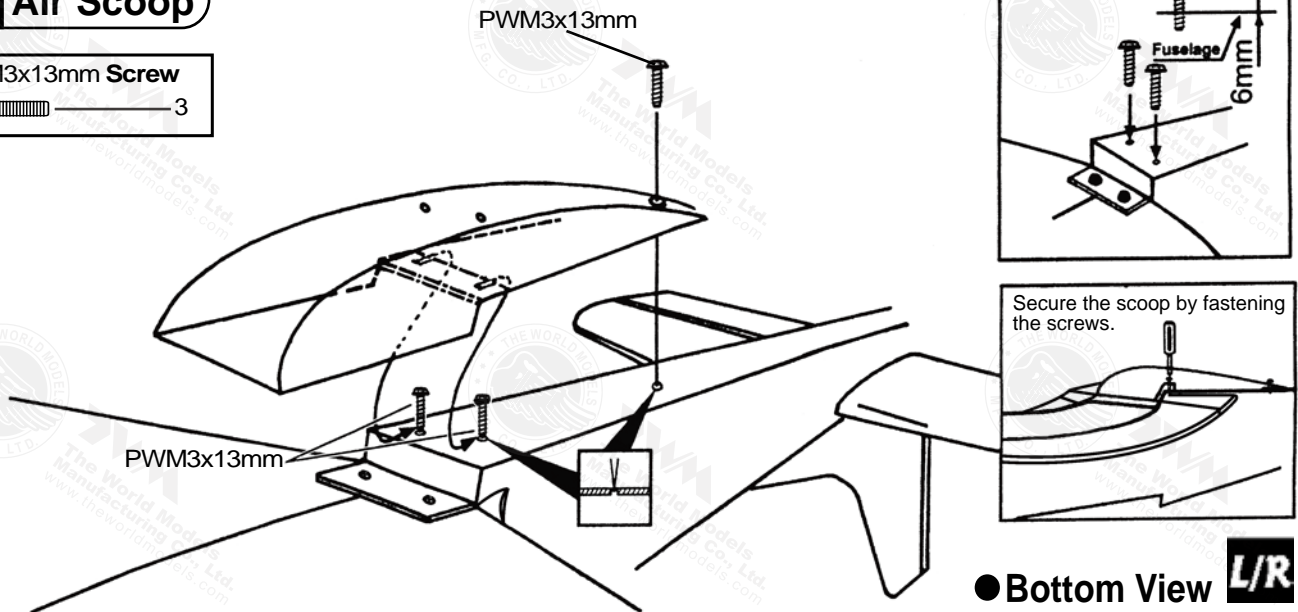


● Bottom View

## 21 Air Scoop

PWM3x13mm Screw

— 3



● Bottom View L/R

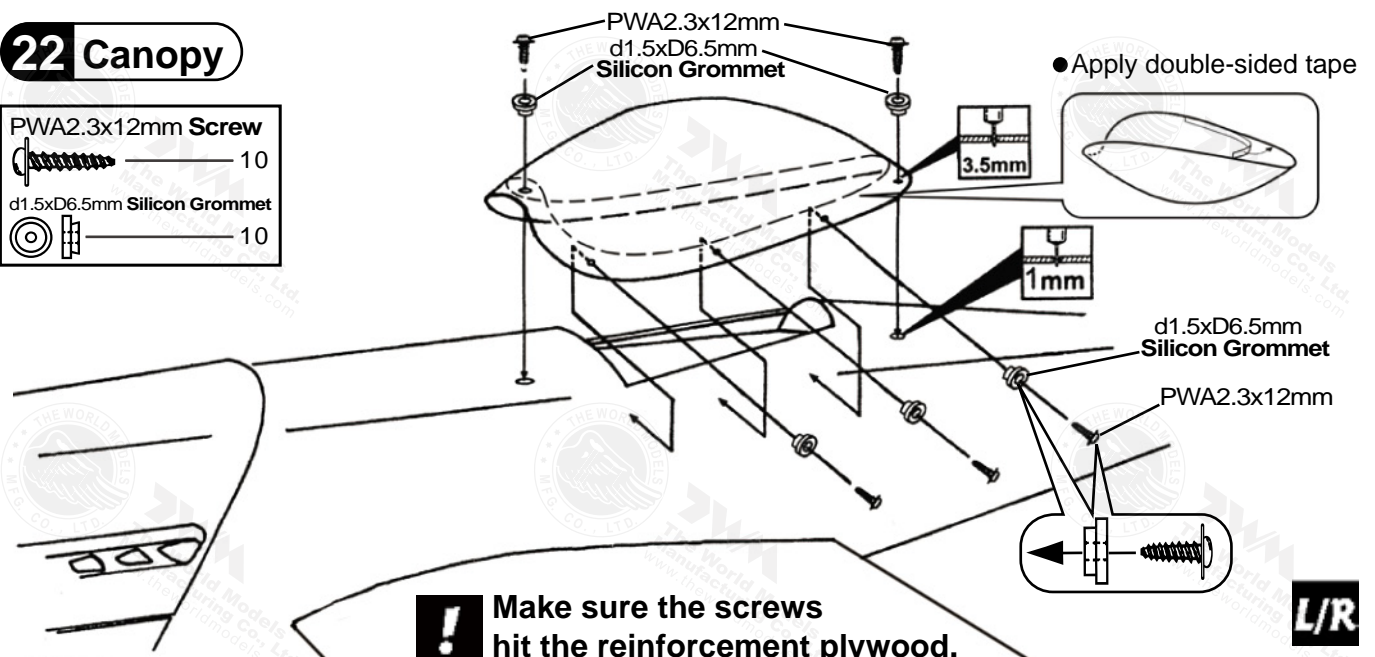
## 22 Canopy

PWA2.3x12mm Screw

— 10

d1.5xD6.5mm Silicon Grommet

— 10

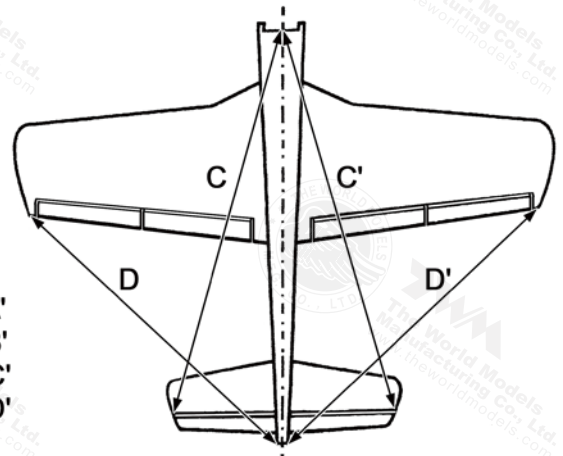
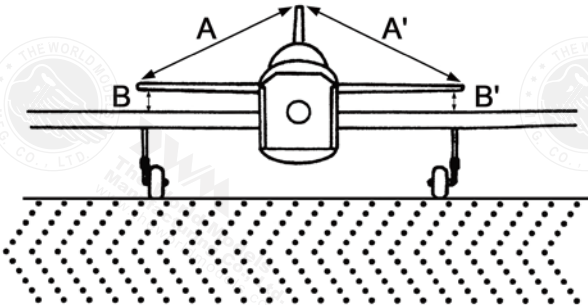


**!** Make sure the screws hit the reinforcement plywood.

L/R

## 23 Wing Setting

● Adjust the wing and fuselage configuration as shown in the diagrams.



A = A'  
B = B'  
C = C'  
D = D'

## 24 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.

Elevator



Rudder



Flap

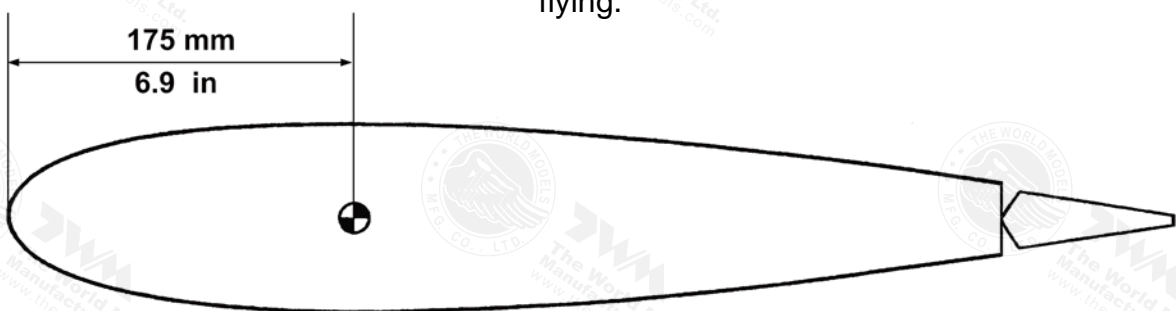


Aileron



## 25 C.G.

The ideal C.G. position is **175mm (6.9 in)** behind the leading edge measured at where the wing meets the fuselage. In order to obtain the C.G. specified, add weight to the fuselage or move the battery position. Check the C.G. before flying.





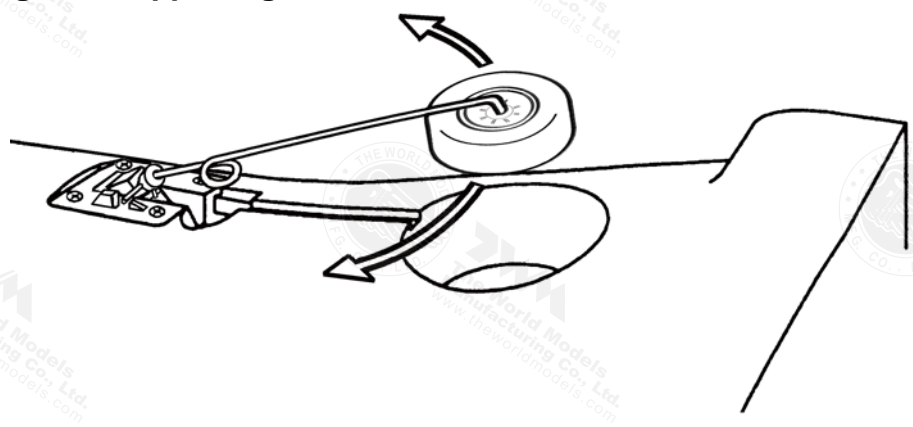
# Warning!

## 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.
- # **P-51 MUSTANG G.S.** is specially designed to be powered by **2C 160** or **4C 180** engine (Glow), using a more powerful engine does not mean better performance. In fact, over powered engine may cause structural 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.

## Landing Gear

Should you need to bend the landing gear wire, use the radio control to open or close the gear to 25% from fully retracted position and switch off the receiver. It is safer to bend the wire in this position. Bending the wire in fully open position may damage the supporting structure.

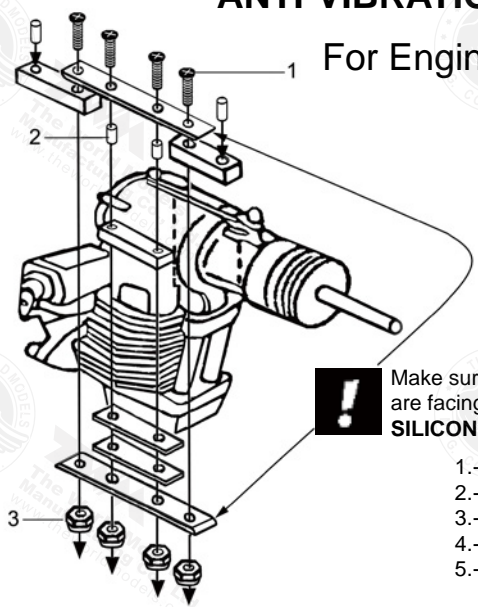


## ANTI-VIBRATION MOUNT INSTALLATION

1

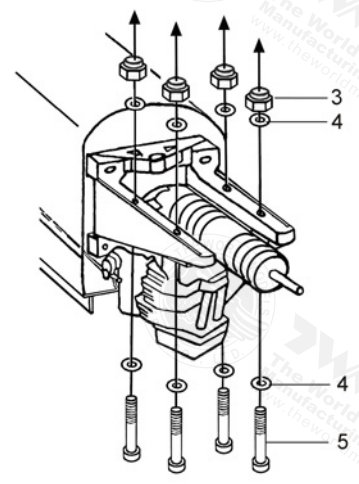
For Engine Mount (PL591120)

2



**!** Make sure the rounded edges are facing the shock absorbing SILICON PAD.

- 1.----- KM3x18mm Screw
- 2.----- Copper Tube
- 3.----- M3 Nylon Insert Lock Nut
- 4.----- 3mm Washer
- 5.----- PM3x35mm



L/R

## **Flying Tips**

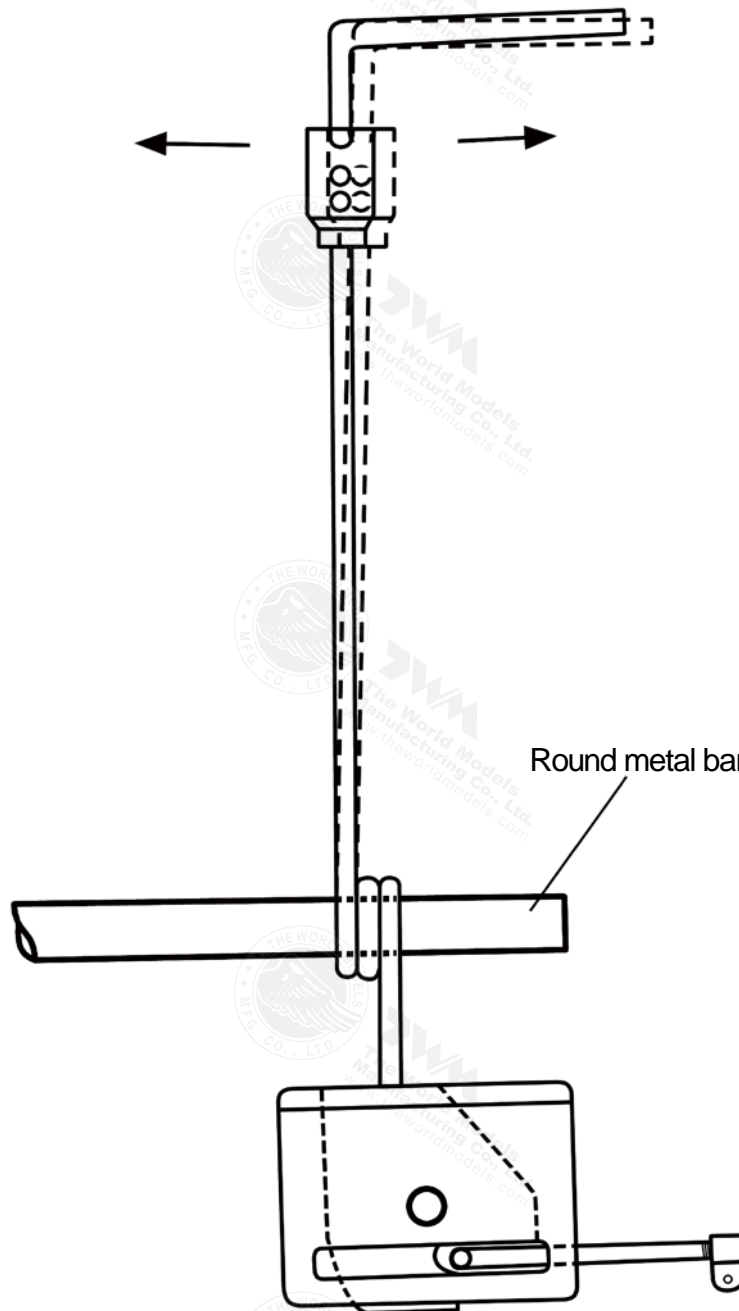
1. Due to location of landing wheel ahead of plane C.G., hard landing may cause the wing to bounce up, This when combines with high landing speed may cause the plane to rise up, stall and result in even harder landing. Please use long landing approach. Descend the plane slowly until it touches down smoothly on the runway.
2. We recommend delaying the installation of wheel covers (section 3 of manual) until you are familiar with the flying characteristics of the model after the first few flights. Operate the retracts in low air speed, as the wheel covers may induce large drag during high air speed and cause difficulties in retracting the wheels. Adjust the angle of the wheel covers to minimize drag.
3. When flaps are lowered, nose of model will rise. Check effect of flaps at higher altitude altitude to avoid surprises during landing.

# When Flaps are lowered, nose of model will rise. The nose-up varise with the speed at which the models is flying when you lower the flaps and the extent to which they are lowered. Check effect of flaps at higher altitude to avoid surprises during landing. You may apply down trim of the elevator to compensate for the nose-up effect when lowering the flaps. Taking off with flaps lowered is not recommended, as the increased drag may require a longer runway and more engine power for the model.



Bob's

**Should you require to bend the landing gear wire, please insert a round metal bar into the spring ring and apply force there as leverage. Bending the wire directly may damage the mounting block structure.**

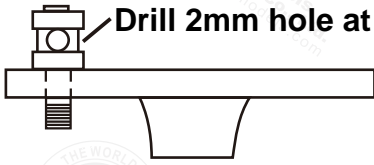




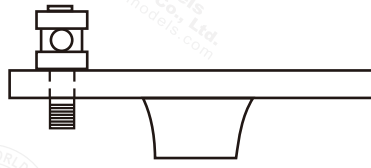
# LINKAGE CONNECTOR

## HW7111050 & HW7111060

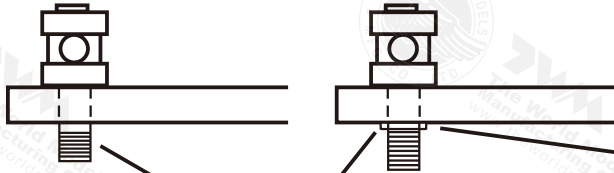
Drill 2mm hole at servo horn.



Insert linkage connector into servo horn.

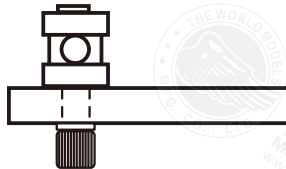


Make sure shoulder of screw is cleared from servo horn. Add washer to reduce play if necessary.



Shoulder

Tighten up the round nut against the shoulder. Apply CA or permanent thread locker.



After fastening the round nut, make sure that the linkage connector can rotate freely.

## Product Registration Form (US Customers)

We would like to share with you any relevant information regarding your model, including product news and free upgrade parts when applicable. Please fill in the following and send to AirBorne Models, 4749-K, Bennett Drive, Livermore, CA 94551 USA.

1. Name: \_\_\_\_\_

2. Address: \_\_\_\_\_

3. Phone #: \_\_\_\_\_ E-mail: \_\_\_\_\_

4. Model: \_\_\_\_\_

Wing QC# \_\_\_\_\_ Fuselage QC# \_\_\_\_\_  
(QC numbers are stamped on wing and fuselage)

5. Date of Purchase: \_\_\_\_\_

6. Store Name: \_\_\_\_\_

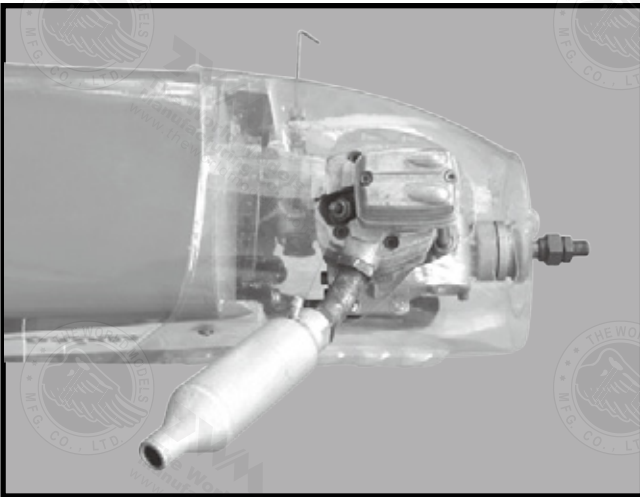
Please call AirBorne Models at 925 371 0922 for any assistance in filling this form. Thank you very much for purchasing our product.

# Usage of the transparent 3D template



This transparent 3D template is used for position guidance of the actual cutting of the pre-painted cowling.

1



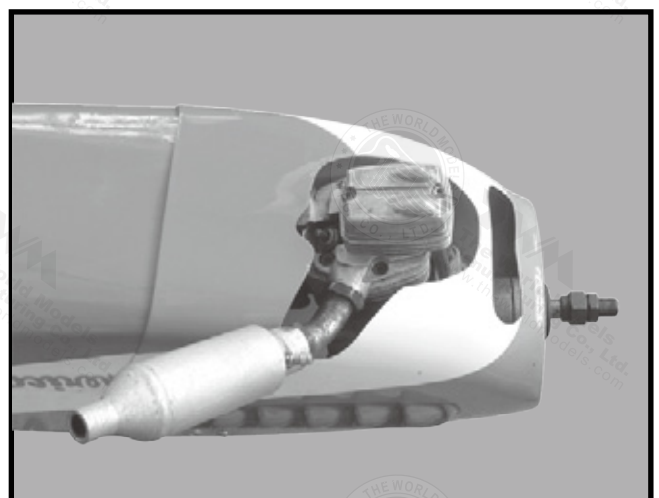
2



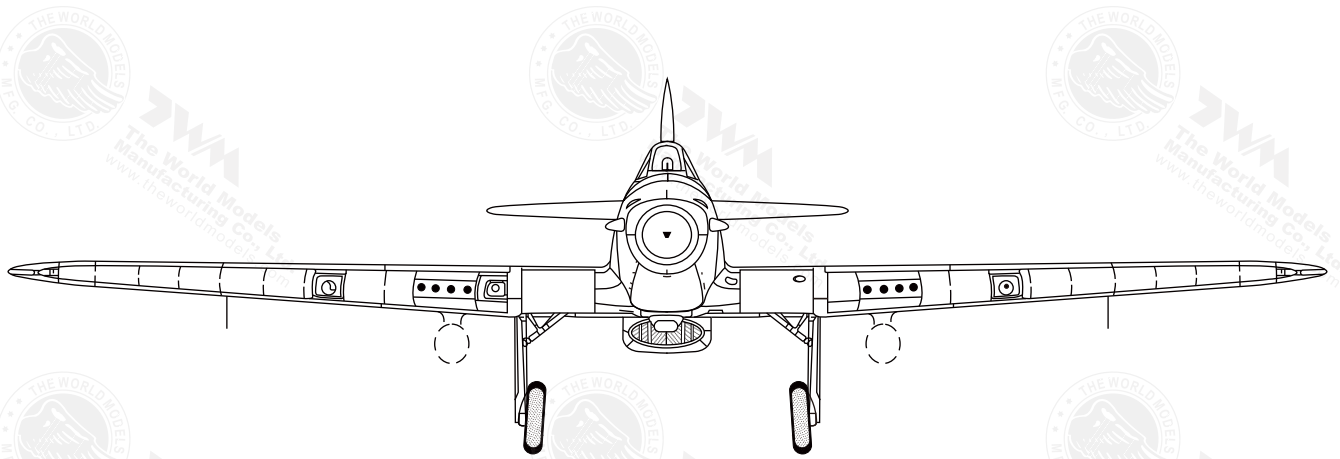
3



4



Simply cut the transparent 3D template to fit your engine and exhaust pipe, then slide onto the actual cowling and use as template to mark the openings required for final cutting.



**Ducted Fan**

**Pattern**

**Warbirds**

**Funfly**

**Scale**

**Electric**

**Sports**

**Glider**

**Trainer**

**Boat**

**Accessories**

**Covering**

(Lightex / Toughlon)



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