

零戦

ZERO G.S.

INSTRUCTION MANUAL



1.60 cubic inch displacement 2stroke (glow)

Radio required: 6 channels, 9 servos airplane radio

Specifications

Wing Span	80.0 in / 2030 mm
Wing Area	1085 sq in / 70.0 sq dm
Flying Weight	15.5 lbs / 7100 g
Fuselage Length	67.0 in / 1700 mm

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.**
FACTORY PRE-FABRICATED
ALMOST-READY-TO-FLY (ARF) SERIES
MADE IN CHINA
www.theworldmodels.com

零戦 ZERO G.S.

INDEX

BEFORE YOU BEGIN	P. 1
PARTS LIST	P. 2
ASSEMBLY	P. 3 - 12
SAFETY PRECAUTIONS	P. 13 - 15

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 be difficult to extend to the good 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!

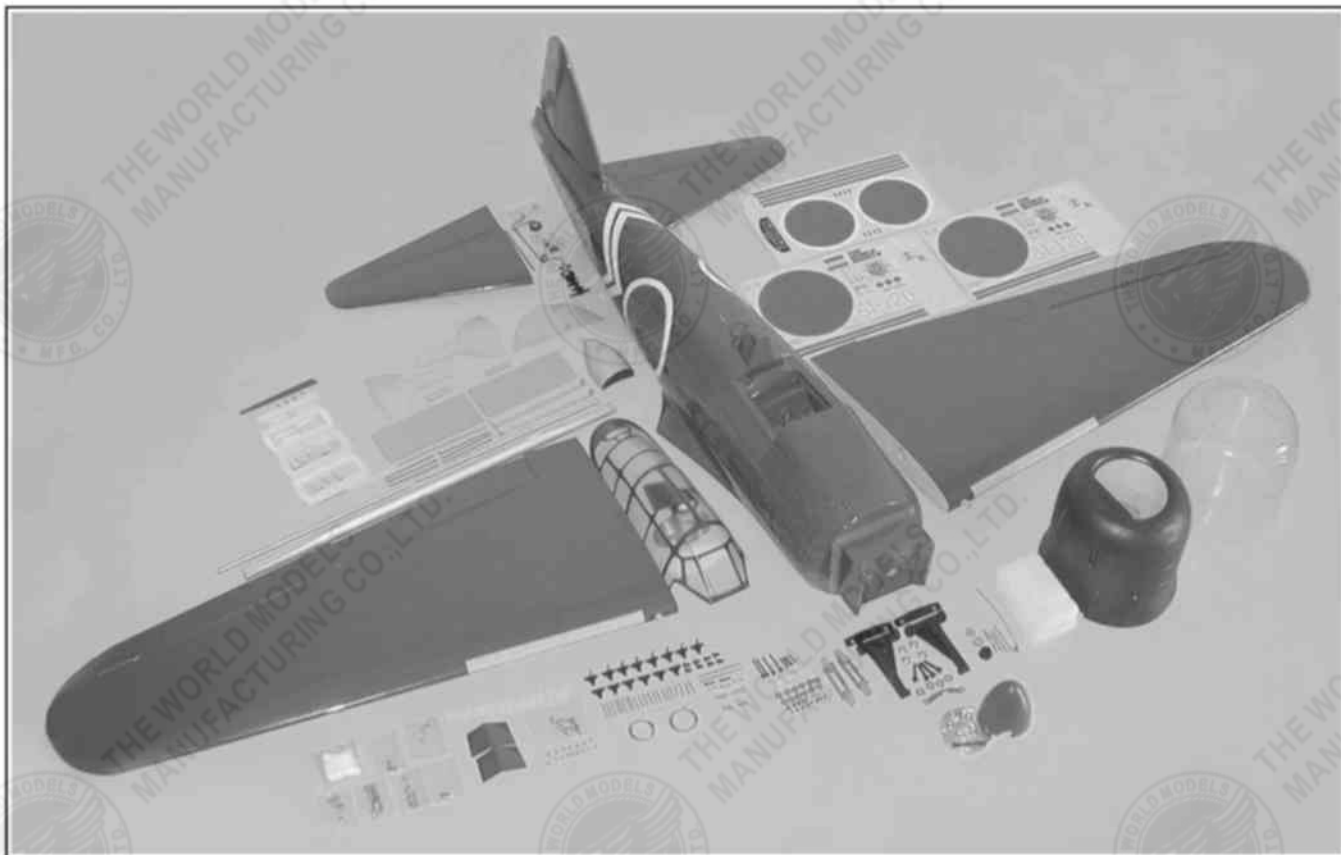


Warning!

Do not overlook this symbol!



Pierce the shaded portion
covering film.

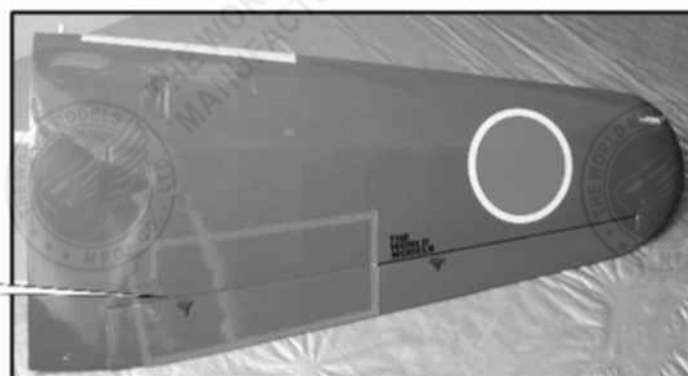


Parts list

1. FUSELAGE -- 1 pc.
2. MAIN WING -- 1 pair
3. STABILIZER & ELEVATOR -- 1 set
4. VERTICAL FIN & RUDDER -- 1 set
5. PILOT (#PC001102B) -- 1 pc.
6. CANOPY -- 1 set
7. ENGINE MOUNT PL5911120 -- 1 set
8. FUEL TANK 800cc -- 1 set
9. COWLING -- 1 pc
TRANSPARENT 3D TEMPLATE -- 1 pc.
10. SPINNER Ø89mm -- 1 pc.
11. SPONGE 10 x 80 x 200 mm (For Radio Equipment) -- 2 pcs
SPONGE 10 x 46 x 57 mm (For Canopy) -- 1 pc.
12. MAIN LANDING GEAR COVER -- 1 set
13. AIR SCOOP -- 1 set
14. TAIL LANDING GEAR -- 1 set
15. TAIL WHEEL Ø30mm -- 1 pc.
16. ELEVATOR LINKAGE -- 1 set
17. PUSHROD & PULLWIRE: --
COPPER TUBE d2 x D2.4 x 8 mm (For Elevator & Rudder) -- 8 pcs
RIGGING COUPLER Ø1.8 x 27 mm w/Threads (For Elevator & Rudder) -- 4 pcs
RIGGING Z BEND Ø1.8 x 27 mm (For Elevator & Rudder) -- 4 pcs
METAL ROD Ø1.8 x 100 mm w/threads (For Aileron) -- 2 pcs
METAL ROD Ø1.8 x 105 mm w/threads (For Flap & Elevator) -- 4 pcs
WIRE Ø1 x 850 mm (For Elevator) -- 2 pcs
WIRE Ø1 x 1040 mm (For Rudder) -- 2 pcs
18. THROTTLE PUSHWIRE Ø1.2 x 345 mm
w/Plastic tube d2 x D3 x 110 mm -- 1 set
19. WOODEN PARTS: --
BALSA 6 x 6 x 41 mm (For Throttle, Elevator & Rudder Servos Stand) -- 6 pcs
BALSA 8 x 8 x 128mm (For Fixing Fuel Tank) -- 1 pc.
BALSA 8 x 18 x 21mm (For Aileron & Flap Servos Stand) -- 8 pcs
PLYWOOD 2 x 70 x 73 mm (Aileron & Flap Servos Stand) -- 4 pcs
PLYWOOD 6 x 61 x 133 mm (Throttle, Elevator & Rudder Servos Stand) -- 3 pcs
20. PLASTIC PARTS: --
CLEVIS -- 10 pcs
SILICON GROMMET d1.5 x D6.5 mm (For Canopy) -- 8 pcs
SILICON GROMMET d2.5 x D8.5 mm (For Cowling) -- 4 pcs
STRAPER -- 6 pcs
TRI-HORN M3 x 14 mm(L) -- 6 sets
TRI-HORN M3 x 14 mm(L) (w/o Base For Rudder) -- 2 sets
COVERING FILM (For Retract Servos) -- 2 pcs
DOUBLE-SIDED TAPE -- 2 pcs
WING PROTECTION -- 1 pc.
21. METAL PARTS: --
LINKAGE CONNECTOR 2.1mm -- 3 sets
COLLAR 2.6 mm -- 1 pc.
ALUMINUM PLATE 2 mm (For Wing) -- 4 pcs
ALUMINUM PLATE 2 x 12 x 75 mm (For Engine Mount) -- 1 pc
ALUMINUM PLATE 1.5 x 12 x 205.6 mm (For Cowling) -- 2 pcs
WING TUBE D9.5 x 382 mm -- 1 pc.
WING TUBE D25.4 x 750 mm -- 1 pc.
STABILIZER TUBE D9.5 x 458 mm -- 1 pc.
BLIND NUT 6 mm -- 4 pcs
NUT 2 mm -- 15 pcs
NUT 3 mm -- 2 pcs
NYLON INSERT LOCK NUT 3 mm (For Wing & Cowling) -- 6 pcs
SCREW PA3 x 12 mm -- 8 pcs
SCREW PA3 x 14 mm -- 3 pcs
SCREW PM2 x 8 mm -- 12 pcs
SCREW PM2 x 25 mm -- 12 pcs
SCREW PM2 x 30 mm -- 9 pcs
SCREW PM3 x 10 mm -- 4 pcs
SCREW PM3 x 75 mm -- 2 pcs
SCREW PM4 x 45 mm -- 2 pcs
SCREW PWA2 x 12 mm -- 22 pcs
SCREW PWA2.3 x 8 mm -- 8 pcs
SOCKET HEAD SCREW M3 x 15 mm -- 2 pcs
SOCKET HEAD SCREW M6 x 30 mm -- 4 pcs
WASHER d2 x D4 mm -- 24 pcs
WASHER d3 x D7 mm -- 20 pcs
WASHER d4 x D15 mm -- 2 pcs
WASHER d6 x D15 mm -- 4 pcs
22. ANTI-VIBRATION MOUNT 4C-120 -- 1 set
(INCLUDE: SOCKET HEAD SCREW M4 x 35 mm -- 4 pcs
SCREW KM4 x 20 mm -- 8 pcs
WASHER d4 x D12 mm -- 12 pcs
NYLON INSERT LOCK NUT 4mm -- 12 pcs
23. FUEL TUBE Ø6 x 5 mm -- 16 pcs
24. DECALS: ST200061 -- 1 set

1 Flap & Aileron

L/R



2 Flap & Aileron Servos

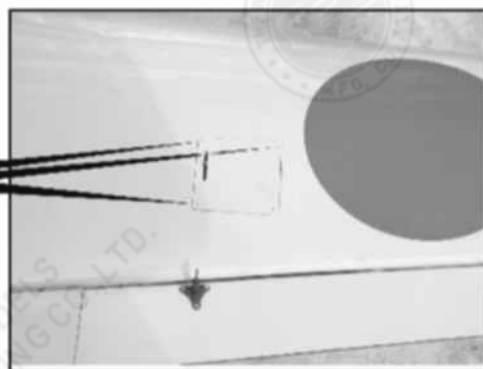
PWA2 x 12mm Screw



PM2 x 25mm Screw

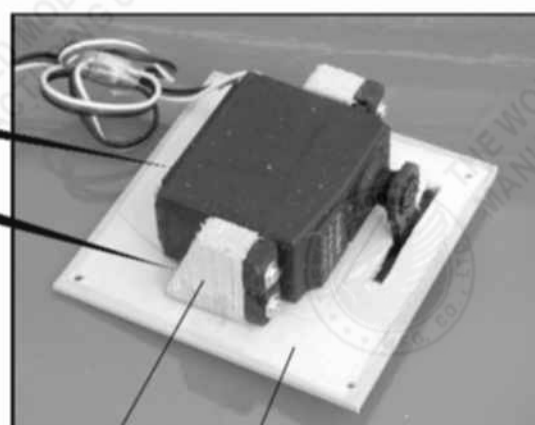


PM2 x 30mm Screw

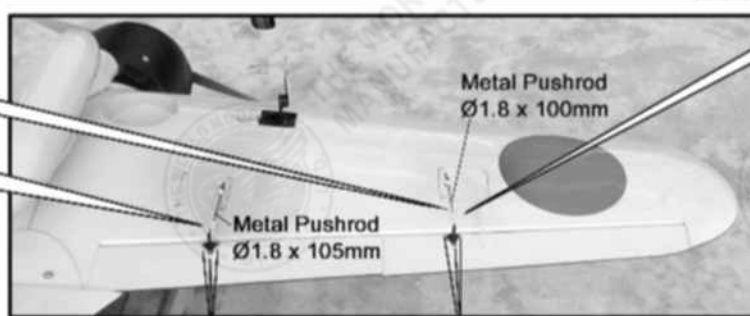
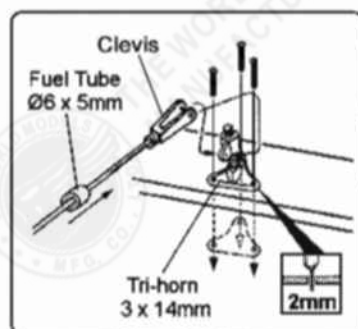
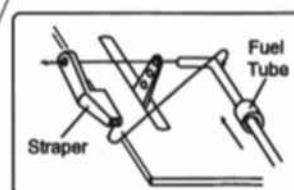


N.I.

AB



Balsa 8 x 18 x 21mm
Plywood 2 x 73 x 70mm

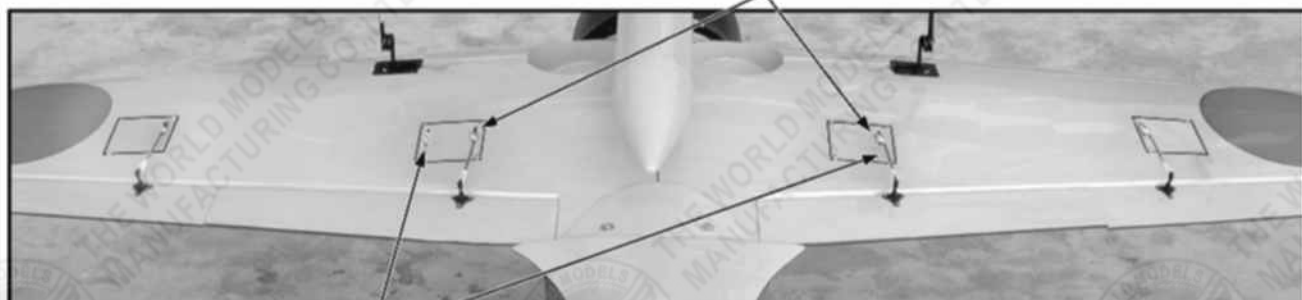


PM2 x 30mm

PM2 x 25mm

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

! 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.

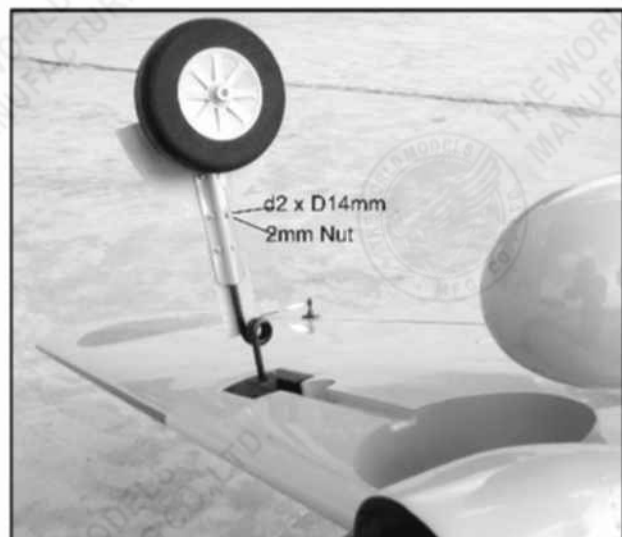
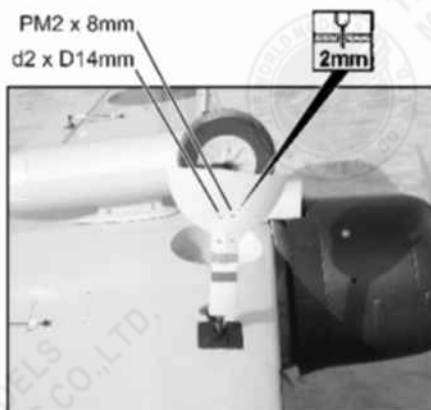


• The existing slots are for 2 channels (mixing) operation of the flaps.

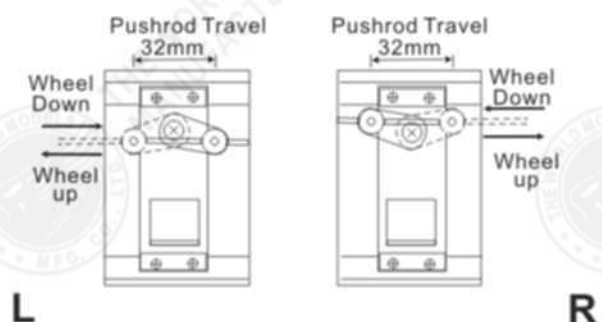
3 Landing Gear & Retract Servos

PM2 x 8mm Screw	12
2mm Washer	24
2mm Nut	12

L/R



● Retract Servos



N.I.

Covering Film



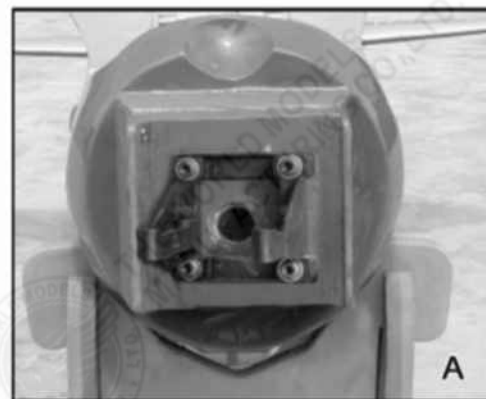
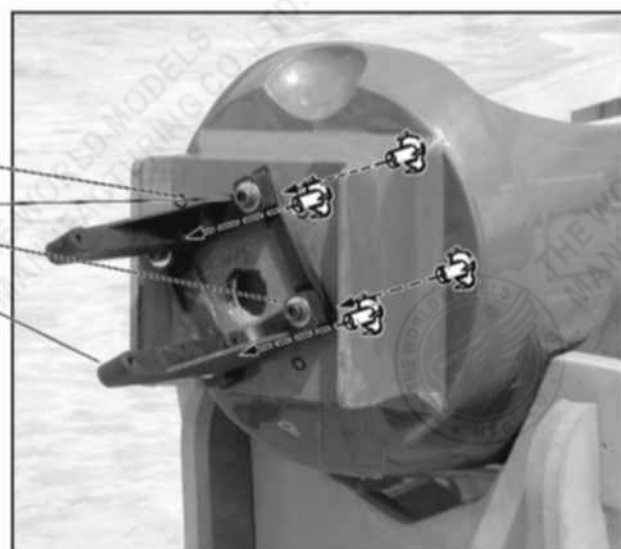
4 Engine Mount

M6 x 30mm Screw	4
d6 x D15mm Washer	4
d6 x D18mm Blind Nut	4

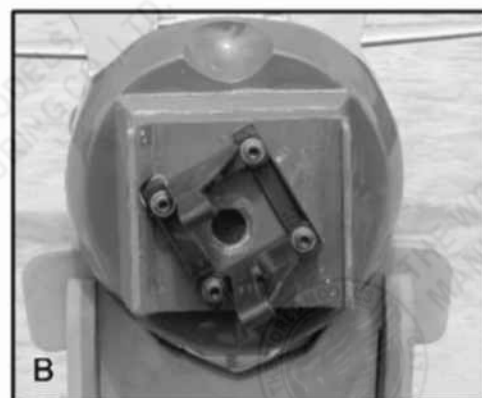
● Apply thread locker to screws.

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

Wooden dowel
Ø7.5 x 10mm
M6 x 30mm
d6 x D12mm
Engine Mount
PL 5911120

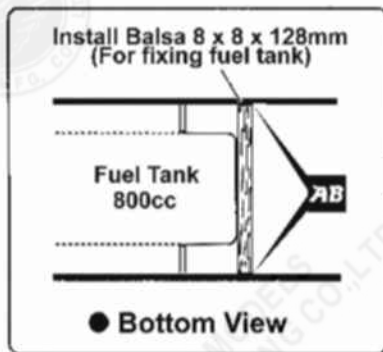


A: Inverted mount with Pitts type muffler.

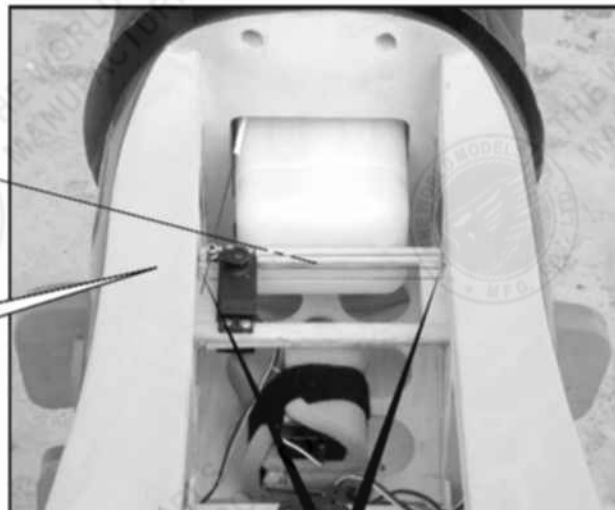


B: Inclined mount for stock muffler installation.

5 Fuel Tank



Balsa 8 x 8 x 128mm



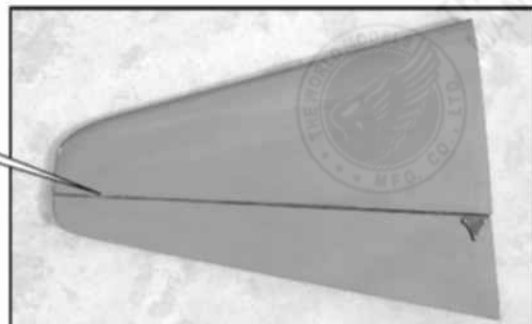
AB

6 Stabilizer & Elevator

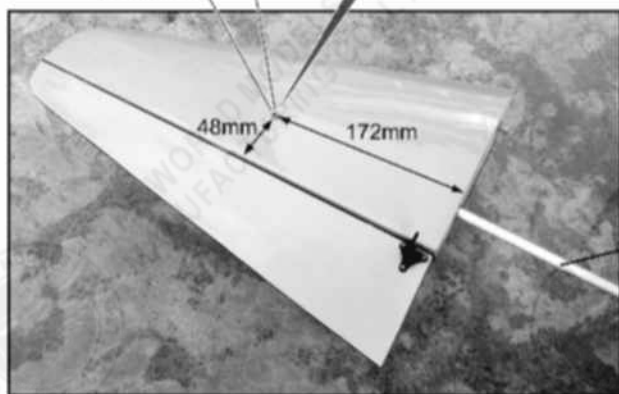
PA3 x 12mm Screw



d3 x D7mm Washer



PA3 x 12mm
d3 x D7mm



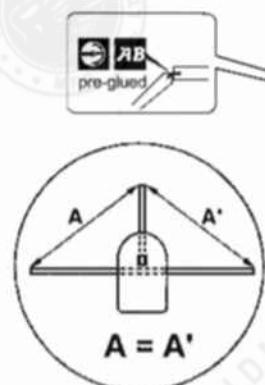
L/R



PA3 x 12mm
d3 x D7mm



7 Vertical Fin & Rudder



8 Tail landing Gear

PA3 x 12mm Screw

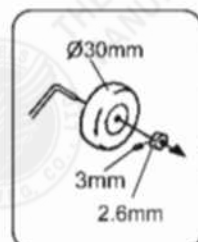
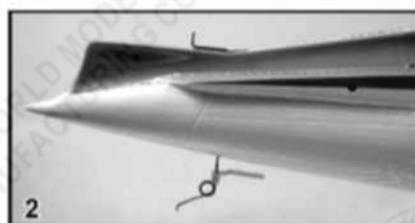
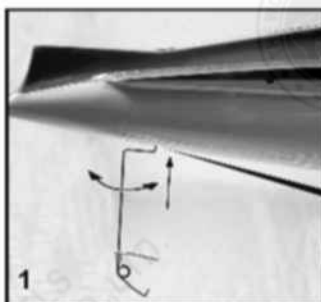
3mm Set Screw

2.6mm Wheel Collar

1

1

1



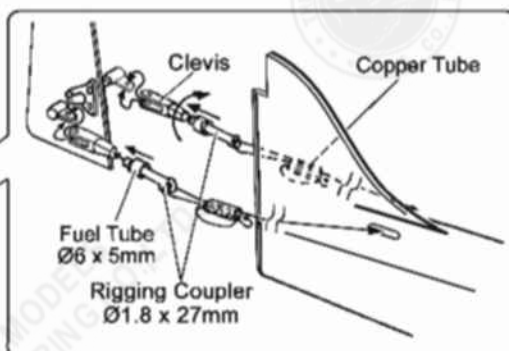
9 Rudder Pullwire

PM2 x 30mm Screw

2mm Nut

3

3



Wire Ø 1 x 850mm

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

10 Elevator Pushrod

PWA2 x 12mm **Screw**

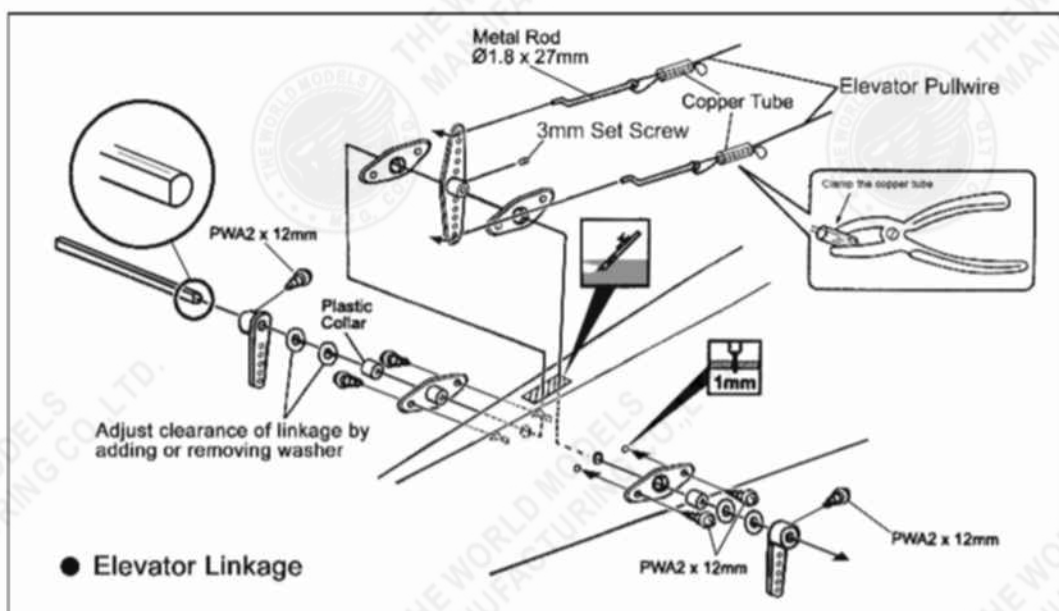
3 x 3mm **Set Screw**

PM2 x 25mm **Screw**

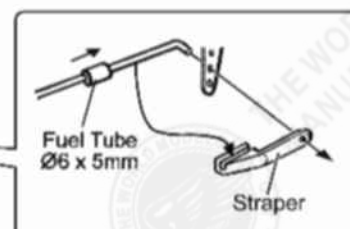
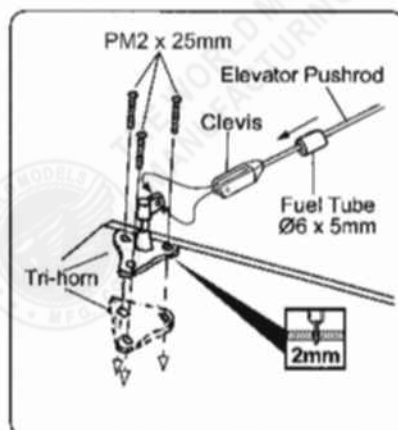
PM2 x 25mm **Screw**

PM2 x 25mm **Screw**

PM2 x 25mm **Screw**



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



- **Bottom View**

11 Servo Set

LINKAGE CONNECTOR

3 x 3mm Set Screw

3

Linkage Connector

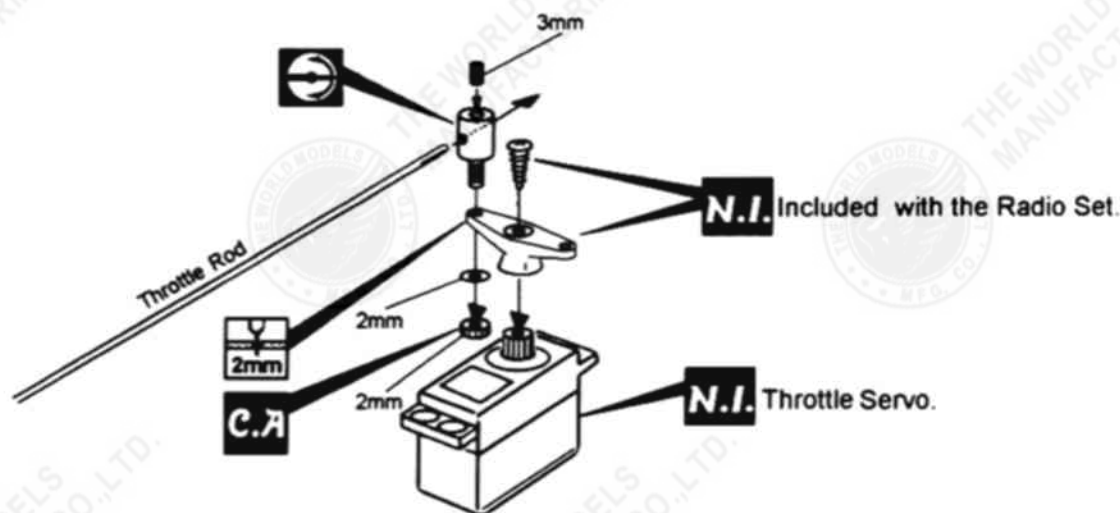
3

2mm Nut

3

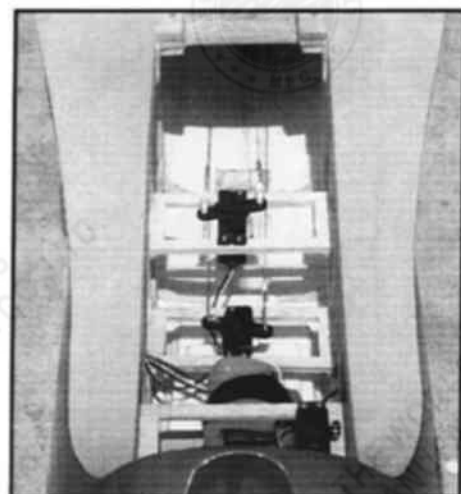
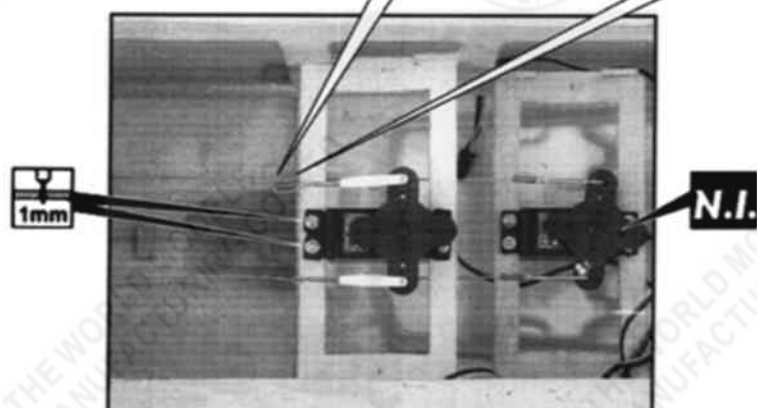
2mm Washer

3

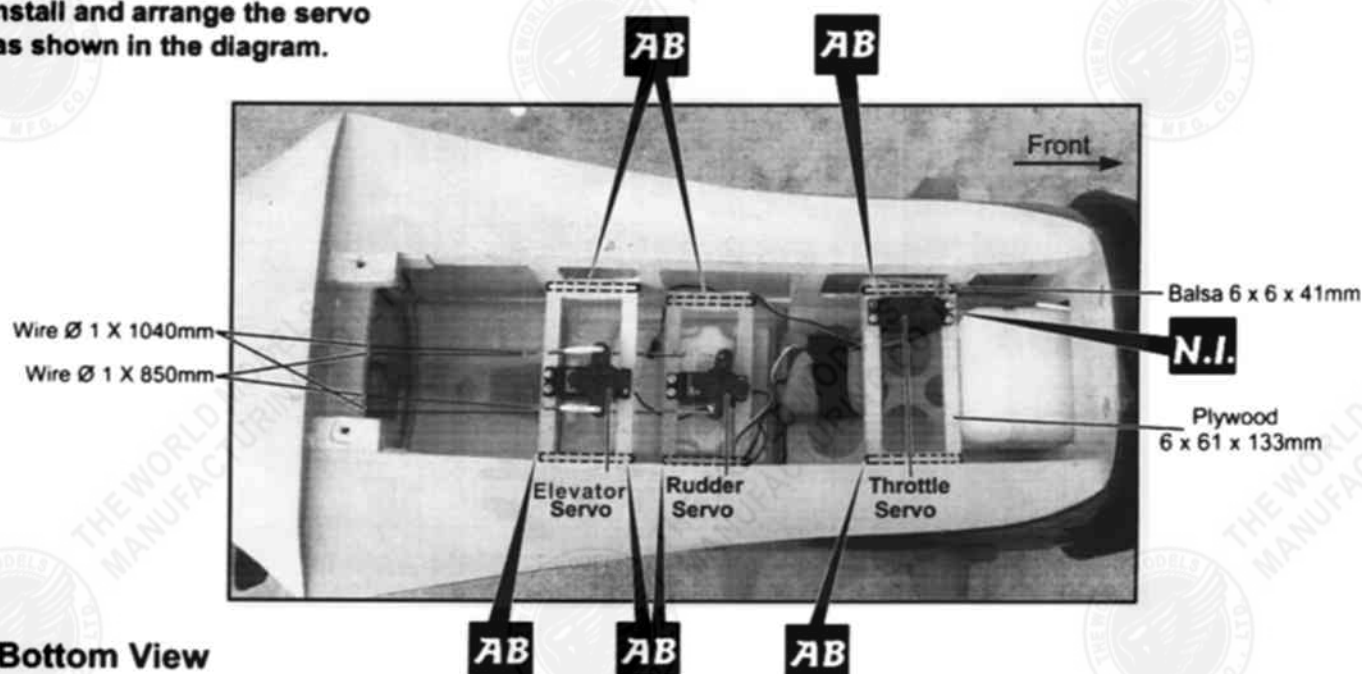


! Please refer to attached sheet for linkage connector installation.

12 Servos



- Install and arrange the servo as shown in the diagram.



- Bottom View

13 Engine

M4 x 35mm Screw

— 4

d4 x D12mm Washer

— 12

3mm Nylon Insert Lock Nut

— 8

4mm Nylon Insert Lock Nut

— 4

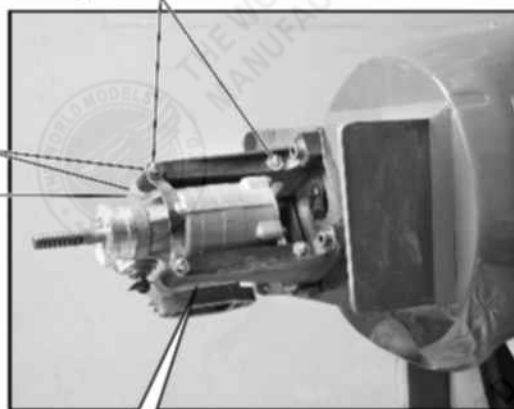
KM3 X 20mm Screw

— 8

4mm Nylon Insert Lock Nut

4mm Washer

M4 x 35mm

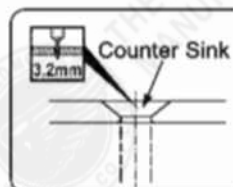


Plastic tube
d2 x D3 x 110mm

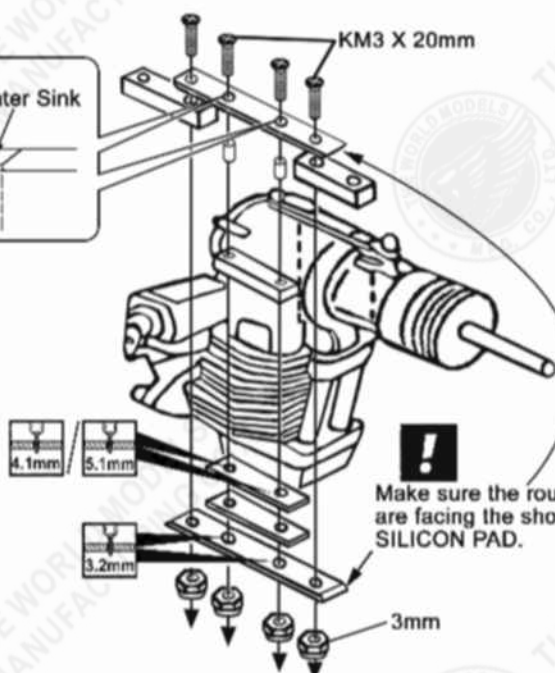
Throttle Pushwire
Ø1.2 x 345mm



ANTI-VIBRATION MOUNT INSTALLATION



Counter Sink



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

L/R

! 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.

● Install Engine position



L/R

14 Cowling

PM3 x 10mm Screw

— 4

d2.5 x D8.5mm Silicon Grommet

— 4

3mm Nylon Insert Lock Nut

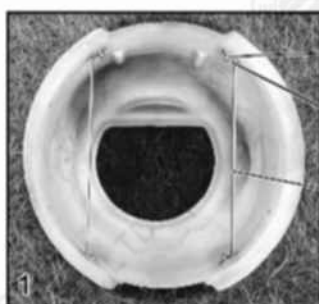
— 4

d3 X D7mm Washer

— 8

PA3 x 12mm Screw

— 4



PM3 x 10mm

3mm Washer

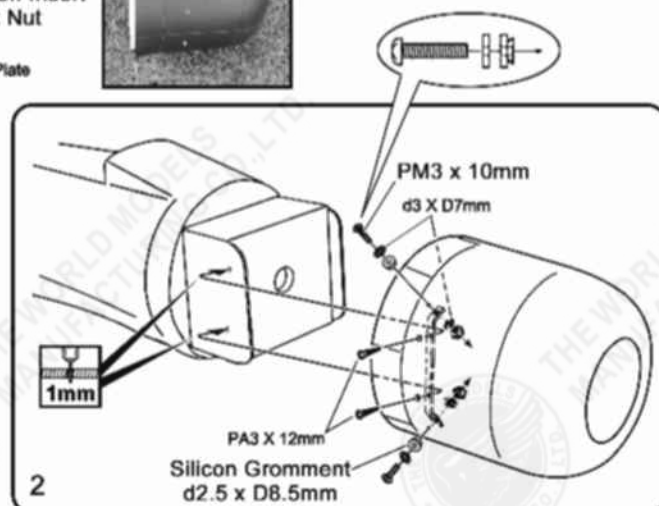
Silicon Grommet

3mm Nylon Insert Lock Nut

Aluminum Plate



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



2

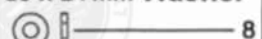
L/R

15 Main Wing

PM3 x 75mm Screw



d3 x D7mm Washer



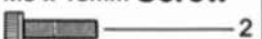
PM4 x 45mm Screw



d4 x D15mm Washer



M3 x 15mm Screw



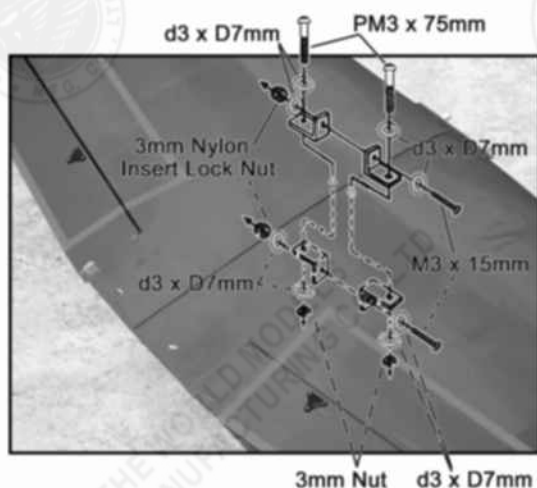
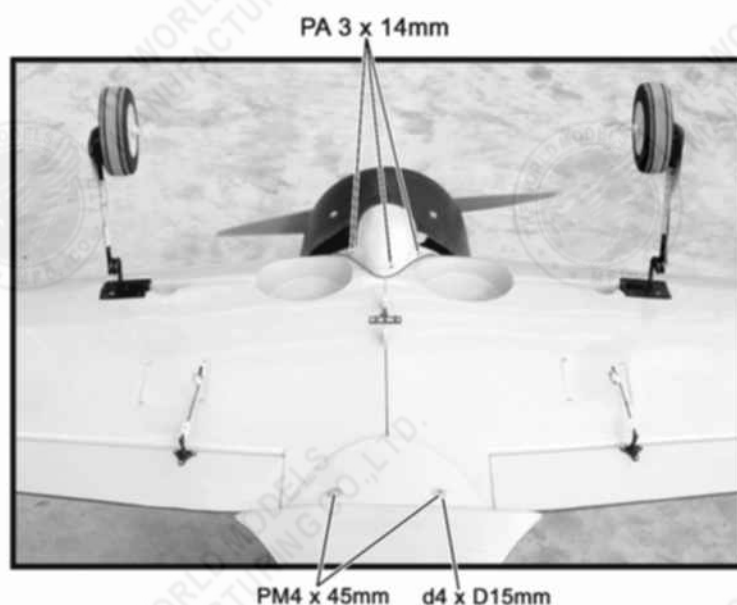
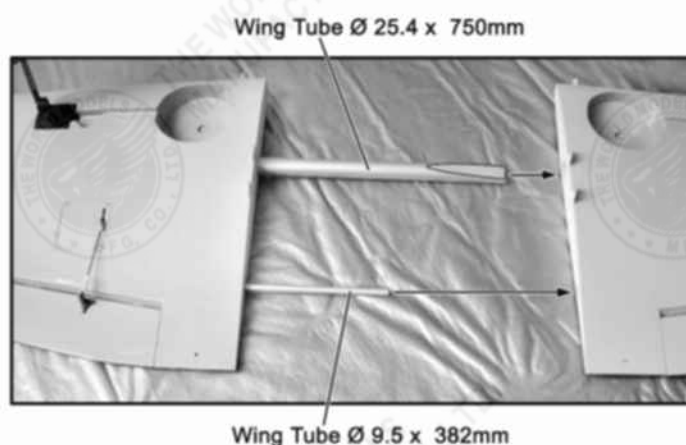
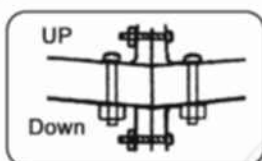
3mm Nylon Insert Lock Nut



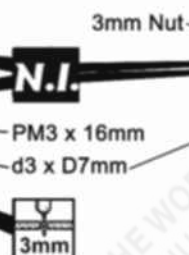
3mm Nut



PA3 x 14mm Screw



● Installation of the optional drop tank.



16 Canopy

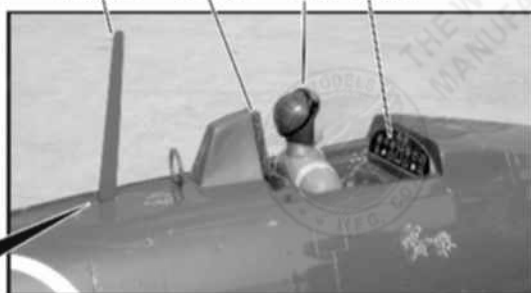
PWA2.3 x 8mm Screw

d1.5 x D6.5mm Silicon Grommet

8

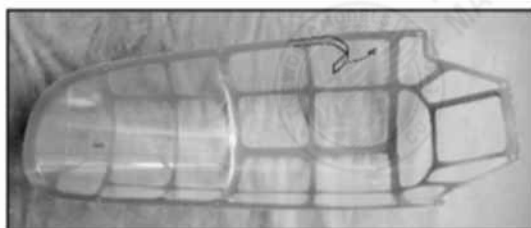
8

Antenna Sponge Pilot Decals



AB

● Apply double-sided tape



Silicon Grommet
d1.5 x D6.5mm

PWA2.3 x 8mm

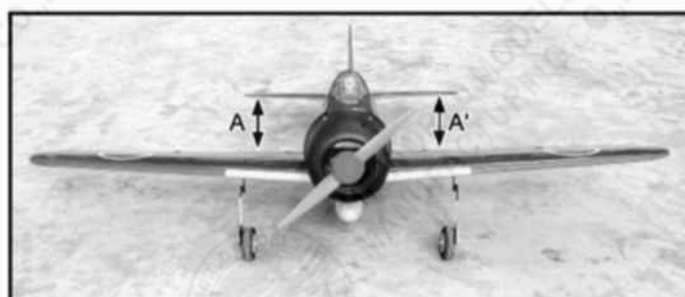
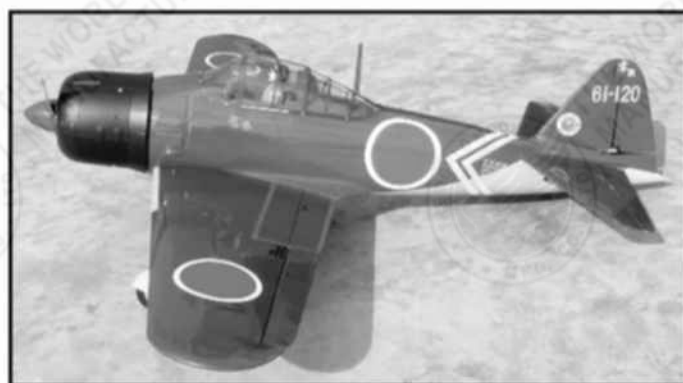
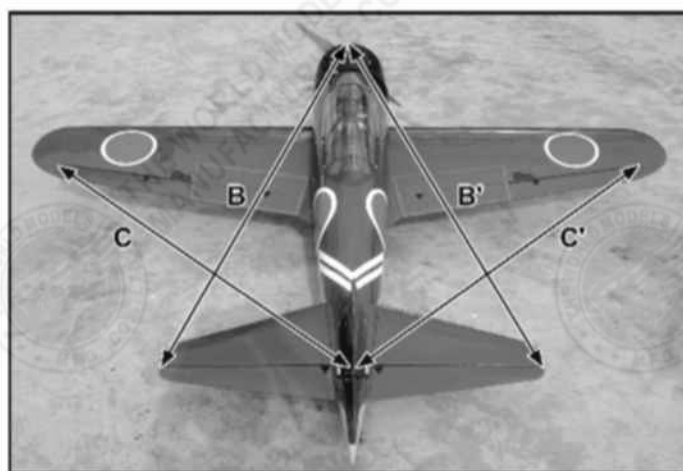


L/R

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

17 Wing Setting

Adjust the wing and fuselage configuration
as in the diagrams.

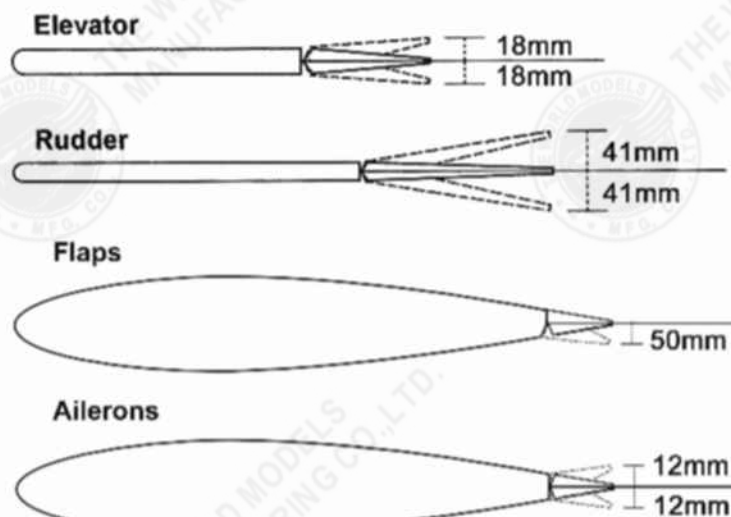


A = A'

B = B'

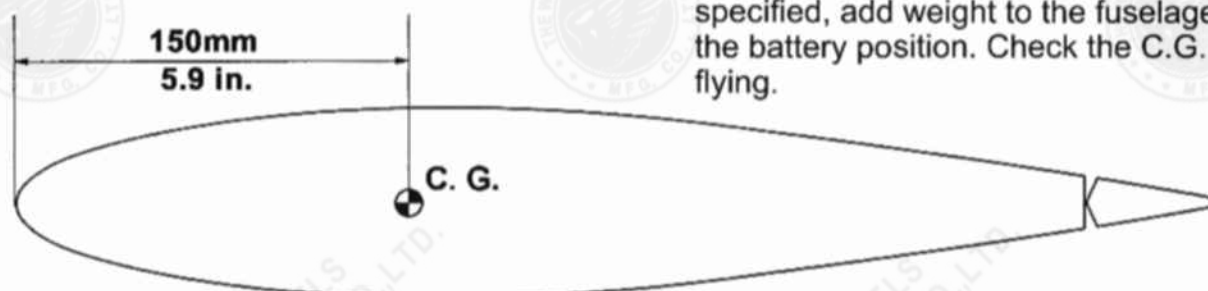
C = C'

18 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.


19 C. G.



The ideal C.G. position is 150mm (5.9 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

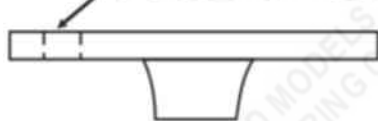
- # First time flyer should never fly by himself / herself. Assistance from experienced flyer is absolutely necessary.
- # Pre-flight adjustment must be done before flying, it is very dangerous to fly a badly pre-adjusted aircraft.
- #  **ZERO G.S.** is specially designed to be powered by 1.60 2 stroke glow 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.
- # When Flaps are lowered, nose of model will rise. The nose-up varies with the speed at which the model 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.

ADDENDUM

LINKAGE CONNECTOR

HW7111030 & HW7111060

Drill 2mm hole at servo horn.



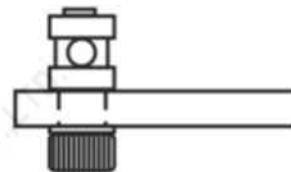
Insert linkage connector into servo horn.



Make sure shoulder of screw is cleared from servo horn.

Add washer to reduce play if necessary.

Shoulder

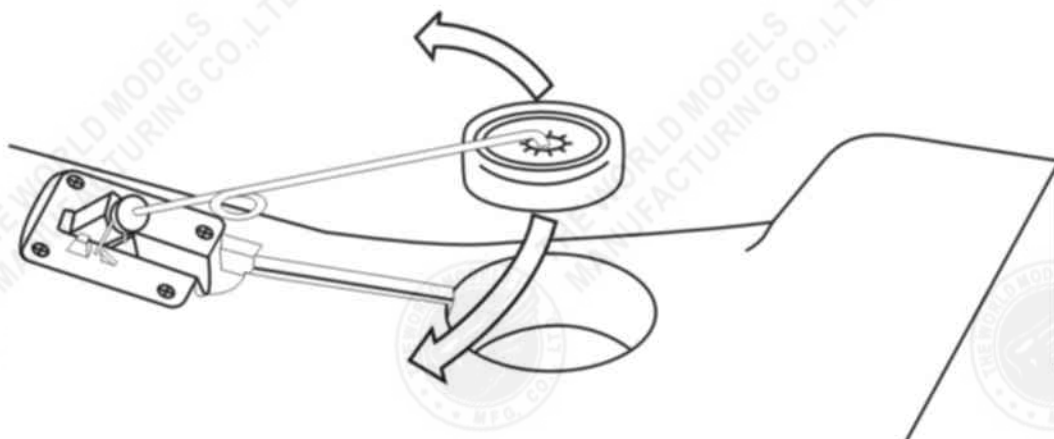


Tighten up the round nut against the shoulder. Apply CA or permanent thread locker.

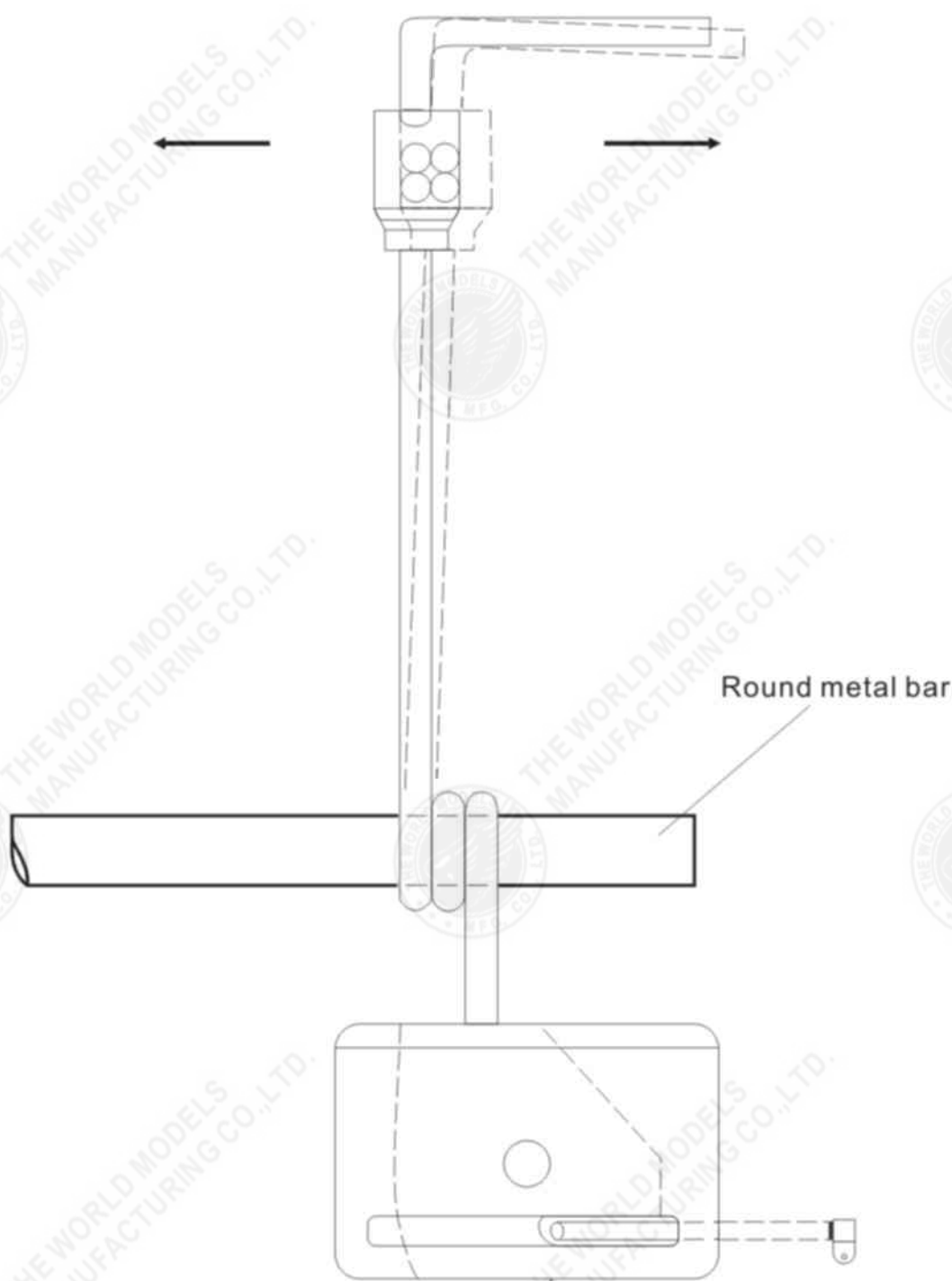
After fastening the round nut, make sure that the linkage connector can rotate freely.

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 safe to bend the wire in this position. Bending the wire in fully open position may damage the supporting structure.



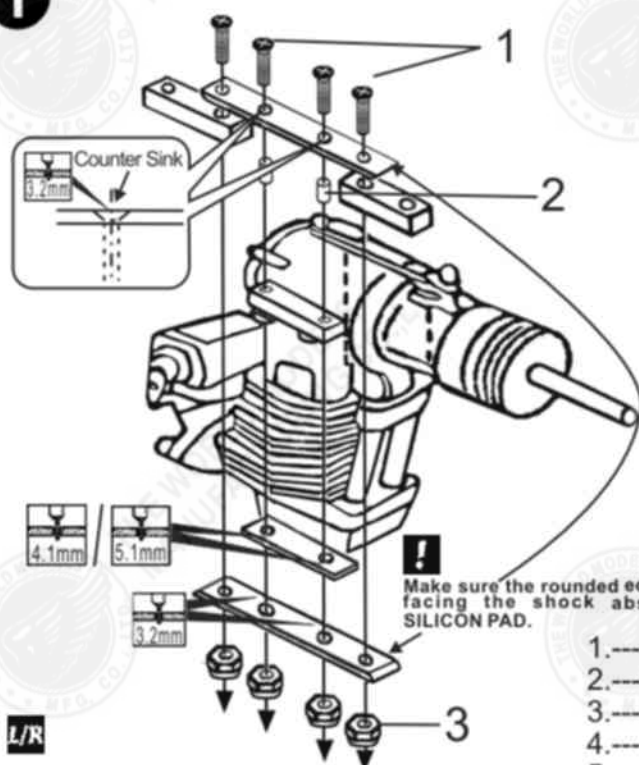
Should you require to bend the landing gear wire, please insert a round metal bar into the spring coil and apply force there as leverage. Bending the wire directly may damage the mounting block structure.



ANTI-VIBRATION MOUNT INSTALLATION

For Engine Mount (PL5911120)

1



- 1.---- KM3x20mm Screw
- 2.---- Copper Tube
- 3.---- M3 Nylon Insert Lock Nut
- 4.---- M4 Nylon Insert Lock Nut
- 5.---- 4mm Washer
- 6.---- M4x35mm Screw

2

