FUN WORLD-EP₄₀₀

HIGH PERFORMANCE
KM0203800
Outrunner Motor Included!

Max Speed 26500 rpm
Operating Power 180 W
Operating Voltage 6-12 V
Operating Current 15 A
Peak Current 20 A (max 15 s)
Shaft diameter 2.3 mm
Diameter 28 mm
Length 26mm
Weight 50 g

ALMOST-READY-TO-FLY
ARF

Outrunner Motor

Requires : **4 - channel radio w/ 4 micro servos,**
20A Brushless ESC, 3 cells 11.1V
2100 mAh Li-Po battery & charger.

Specifications

Wing Span	**39.5 in / 1000mm**
Wing Area	**421 sq in / 27.2 sq dm**
Flying Weight	**25.4 oz / 720g**
Fuselage Length	**39.5 in / 1000mm**

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 electric 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.

FUN WORLD-EP 400

INDEX

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 : -

AB Apply epoxy glue.

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

L/R 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.

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

N.I. Must be purchased separately!

! Pay close attention here!

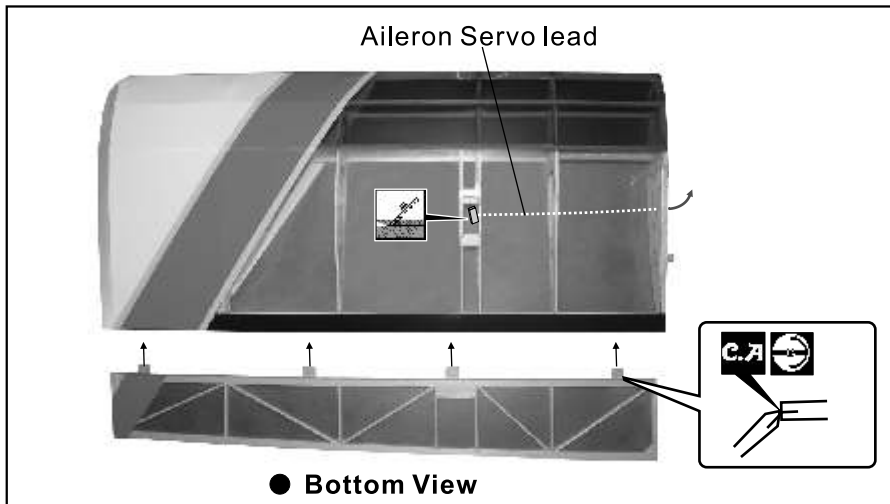**! Warning!**

Do not overlook this symbol!

Pierce the shaded portion covering film.

Parts List

1. MAIN WING -- 1 pair

2. PUSHROD Ø1.4x105mm w/ Threads (For Aileron) -- 2 pcs
   STRAPER -- 2 pcs
   CLEVIS -- 2 pcs
   FUEL TUBE d2xD4x4mm -- 4 pcs
   HORN -- 2 sets
   SCREW PM2x10mm -- 4 pcs

3. FUSELAGE -- 1 pc.
   STABILIZER & ELEVATOR -- 1 set

4. VERTICAL FIN & RUDDER -- 1 set

5. TAIL LANDING GEAR -- 1 set
   PLASTIC COLLAR d1XD5x2mm -- 2pcs
   TAIL WHEEL Ø23mm -- 1 pc.
   ALUMINUM PLATE 0.3mm -- 1pc.
   SCREW PA2x8mm -- 2 pcs
   SCREW PM2x8mm -- 1 pc.
   M2 NUT -- 1 pc.

6. MAIN LANDING GEAR -- 1 set
   MAIN WHEEL Ø40mm -- 2 sets
   COLLAR 2.6mm w/ set screw -- 2 pcs
   LANDING WIRE STRAPS PL4114030 -- 3 pcs
   SCREW PA2.3x10mm -- 6 pcs

7. PUSHROD Ø1.4x420mm w/ Threads (For Elevator) -- 2 pcs
   CLEVIS -- 2 pcs
   HORN -- 2 sets
   SCREW PM2x10mm -- 4 pcs
   FUEL TUBE d2xD4x4mm -- 2 pcs

8. PUSHROD Ø1.4x510mm w/ Threads (For Rudder) -- 1 pc.
   CLEVIS -- 1 pc.
   FUEL TUBE d2xD4x4mm -- 1 pc.
   HORN -- 1 set
   SCREW PM2x10mm -- 2 pcs

9. KM0203800 OUTRUNNER MOTOR (Ø2.3mm) -- 1 set
   400 GEARBOX -- 1 set
   FOLDING PROPELLER SET(11X5) -- 1 set
   SPINNER Ø36mm -- 1 set
   COWLING -- 1 pc.
   SCREW PWA2x8mm -- 4 pcs

10. PUSHROD Ø1.4x100mm (For Elevator) -- 1 pc.
    PUSHROD CONNECTOR PL4410020 -- 1 set
    FUEL TUBE d2xD4x4mm -- 2 pcs
    STRAPER -- 2 pcs
    SPONGE 10x50x150mm -- 1 pc.
    BATTERY TIE 200mm -- 1 pc.
    DOUBLE-SIDED TAPE 30x35mm -- 1 pc.
    SCREW PM2x10mm -- 2 pcs
    WASHER d2xD5mm -- 2 pcs
    M2 NYLON INSERT LOCK NUT -- 2 pcs
    MOUNTING PLATE PL4114015 -- 2 pcs
    PLYWOOD 2x56x95mm -- 1 pc.
    BALSA 1.5x56x205mm -- 1 pc.

11. CANOPY -- 1 pc.
    SCREW PWA2x8mm -- 4 pcs

12. EYE SCREW PA2.5x10x23mm -- 2 pcs
    WING TUBE Ø9.6x240mm -- 1 pc.
    RUBBER BAND D30x1mm -- 2 pcs

13. DECALS -- 1 set

● COVERING:--
    LIGHTEX SGX000 TRANSPARENT
    LIGHTEX SGX030 TRANSPARENT YELLOW
    LIGHTEX SGX100 WHITE
    LIGHTEX SGX050 TRANSPARENT BLUE
    LIGHTEX SGX241 TURQUOISE
    LIGHTEX SGX360 VIOLET
    LIGHTEX SGX330 CADMIUM YELLOW
    LIGHTEX SGX313 PINK
    LIGHTEX SGX201 BLACK
    LIGHTEX SGX251 SKY BLUE
    LIGHTEX SGX250 BLUE
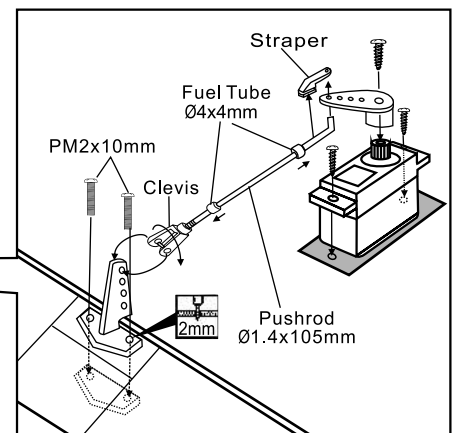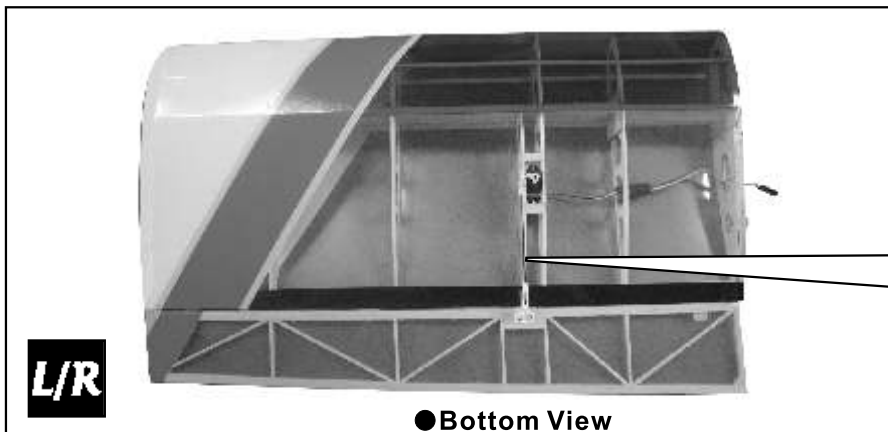   LIGHTEX SGX311 FERRARI RED
    LIGHTEX SGX310 RED

1 Main Wing

Aileron Servo lead

● Apply instant type CA glue to both sides of each hinge.
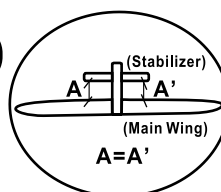
● Bottom View
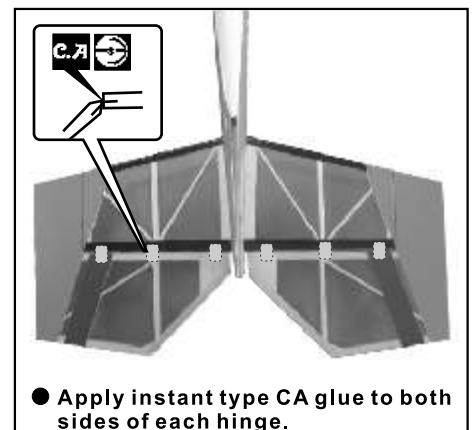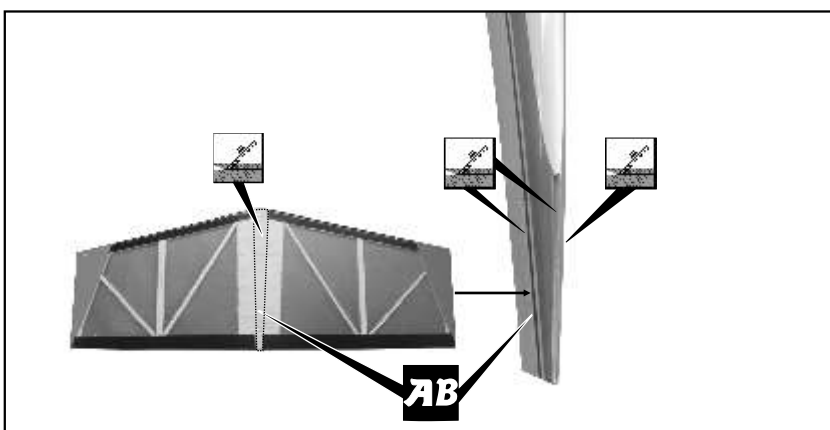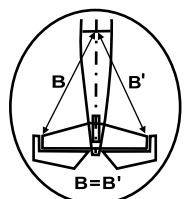
C.A

L/R

2 Aileron Servo

PM2x10mm **Screw** 4

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

L/R

●Bottom View
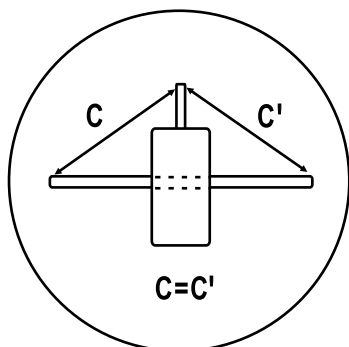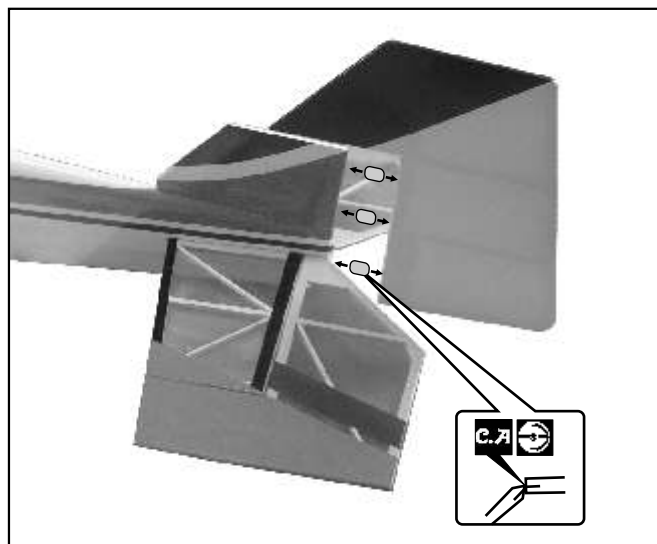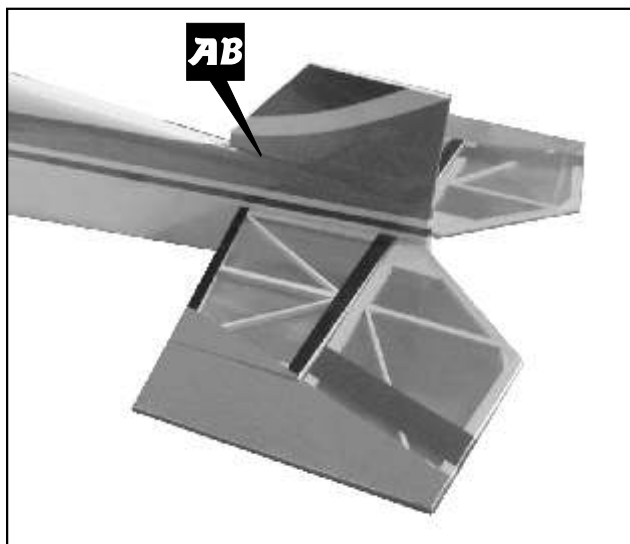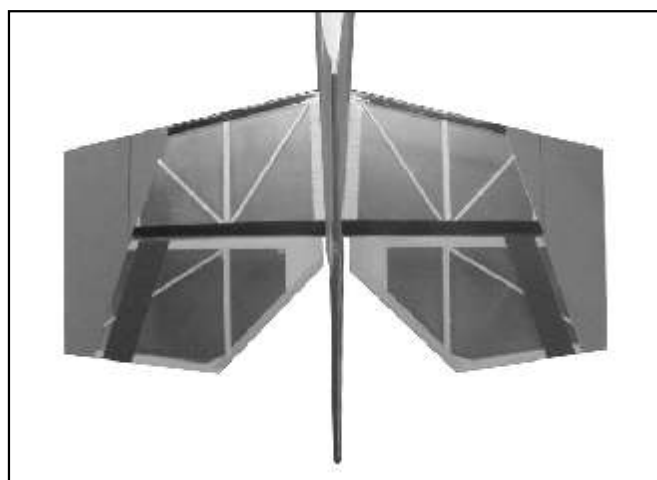
Straper

Fuel Tube
Ø4x4mm

PM2x10mm

Clevis

2mm

Pushrod
Ø1.4x105mm

3 Stabilizer & Elevator

(Stabilizer)
A ↕ ↕ A'
(Main Wing)
A=A'

Temporary install the main wing, adjust leveling of the stabilizer to make it as parallel to the main wing as possible.

B' ↔ B'
B=B'

AB

C.A

● Apply instant type CA glue to both sides of each hinge.

4 Vertical Fin & Rudder

AB

C   C'

C=C'

● Apply instant type CA glue to both sides of each hinge.

C.A

● Completed

## 5 Tail Landing Gear

PA2x8mm **Screw** —————— 2
PM2x8mm **Screw** —————— 1
M2 **NUT** —————— 1

Wheel Ø23mm

PA2X8mm

C.A   C.A

Plastic Collar

M2 Nut

PM2X8mm

1.5mm

2mm
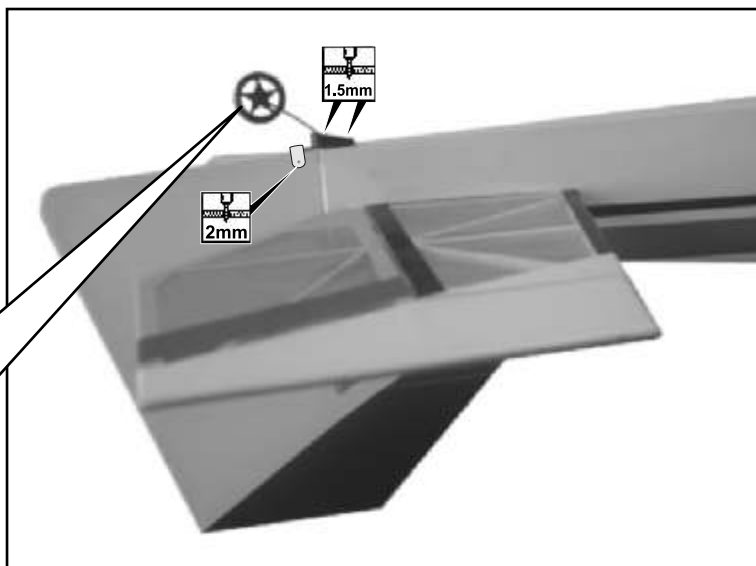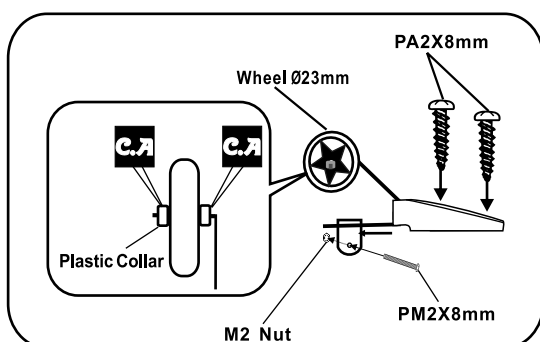
● Bottom View

6 Main Landing Gear

PA2 .3x10mm **Screw** ———— 6
2.6mm **Collar** ———— 2

2.6mm Collar

M3x3mm Set Screw

Front ↑

PA2 .3x10mm

1.5mm

Landing wire straps

● **Bottom View**
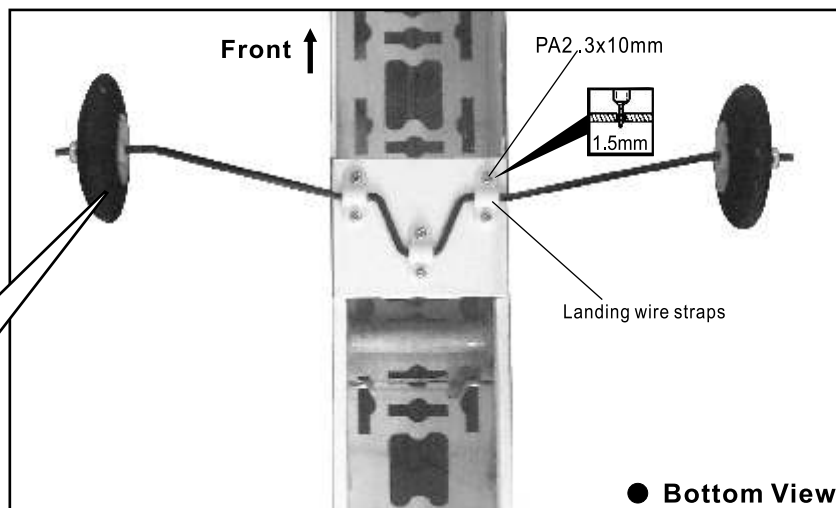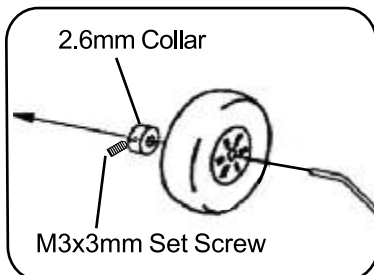
L/R

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7 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.
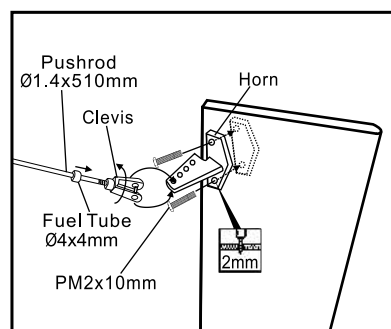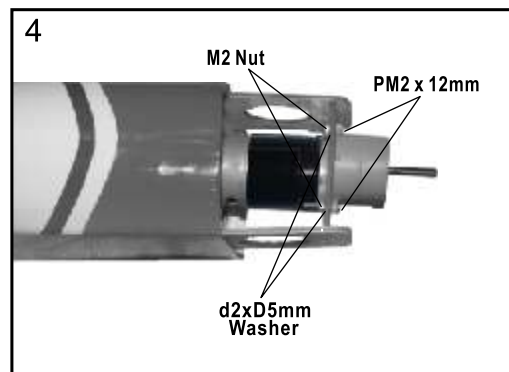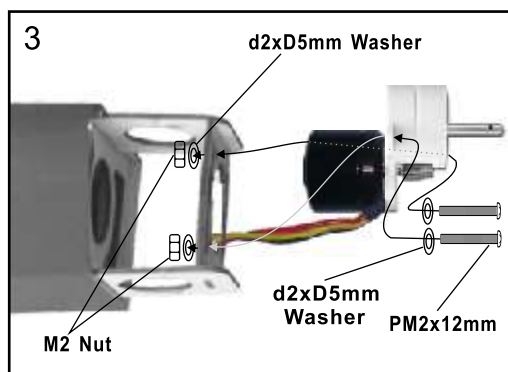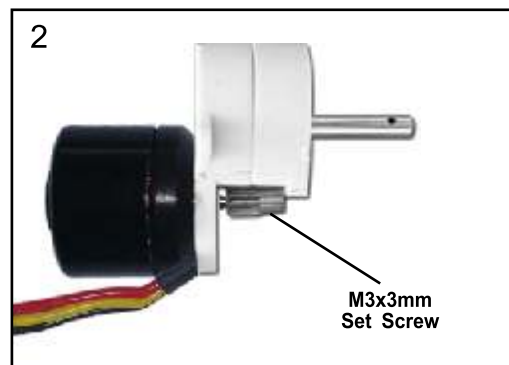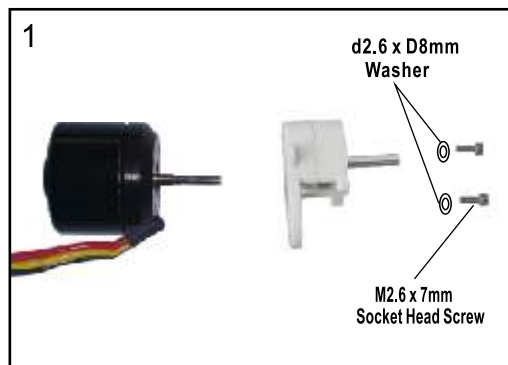
PM2x10mm **Screw** ———— 4

PM2x10mm

Pushrod
Ø1.4x420mm

Clevis

Fuel Tube
Ø4x4mm

Horn

2mm

≈18mm   ≈165mm

● **Bottom View**
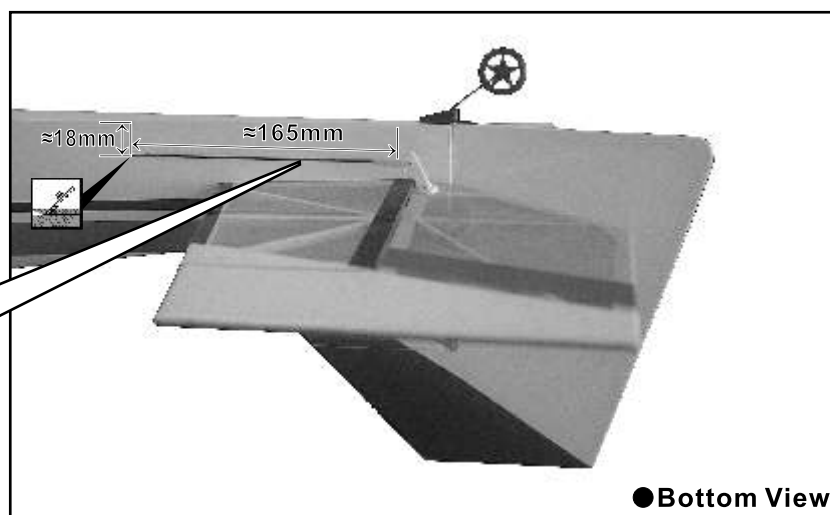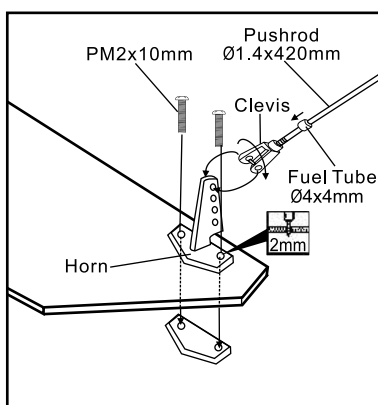
L/R

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8 Rudder Pushrod

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

PM2x10mm **Screw** ———— 2

Pushrod
Ø1.4x510mm

Horn

Clevis

Fuel Tube
Ø4x4mm

PM2x10mm

2mm

≈11mm   ≈82mm

● **Bottom View**
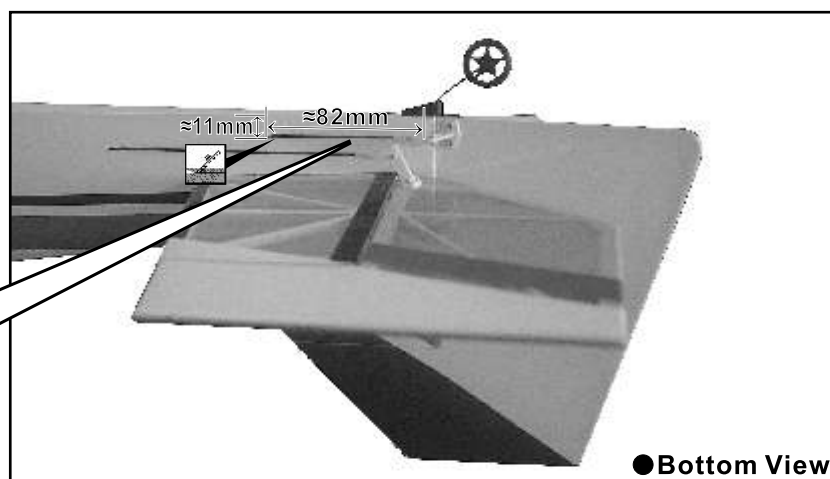
M2.6 x 7mm **Socket Head Screw** — 2

PM2 x 12mm **Screw** — 4

PWA2 x 8mm **Screw** — 4

PA2.6 x 8mm **Screw** — 2

M2 **Nut** — 2

d2 x D5mm **Washer** — 4

d2.6 x D8mm **Washer** — 2

M3x3mm **Set Screw** — 1

● TO ALLOW FOR BACKLASH OF MATCHING GEAR, PUT A PIECE OF THIN PAPER BETWEEN THE GEARS AND THEN TIGHTEN THE M2.6X7mm SCREWS. REMOVE THE PAPER BEFORE FLYING.
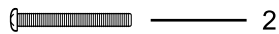
Paper

1

d2.6 x D8mm Washer

M2.6 x 7mm Socket Head Screw

2

M3x3mm Set Screw

3

d2xD5mm Washer

M2 Nut

d2xD5mm Washer

PM2x12mm

4

M2 Nut

PM2 x 12mm
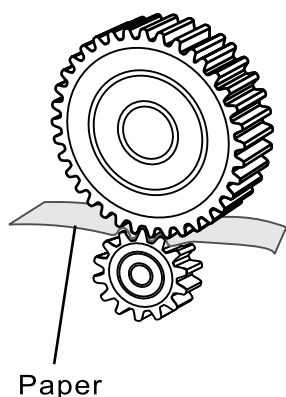
d2xD5mm Washer

● Make sure rotating motor casing is not in contact with wirings or anything.

5

PM2 x 12mm

PM2 x 12mm

● Don't over-tighten the PM2 screws, let the propeller blades align themselves when spinning.

6

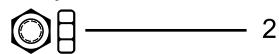**7**

M3x3mm Set Screw

Steel Wire Ø1.2x35mm

8

PA2.6 x 8mm

Spinner

1.5mm
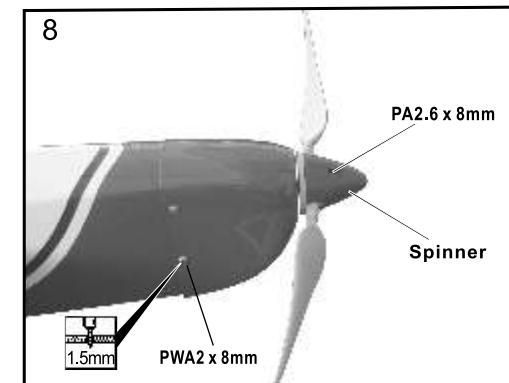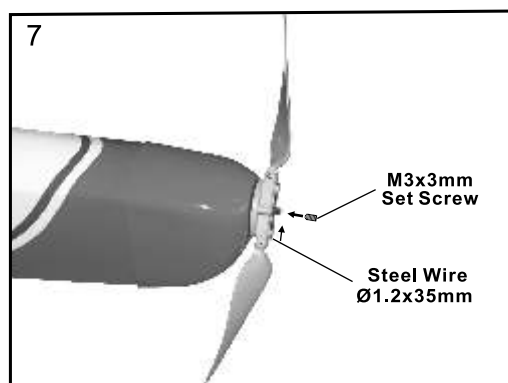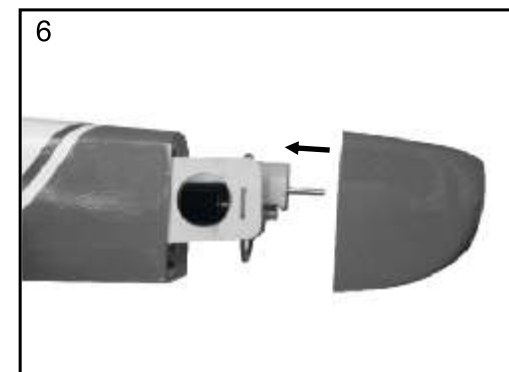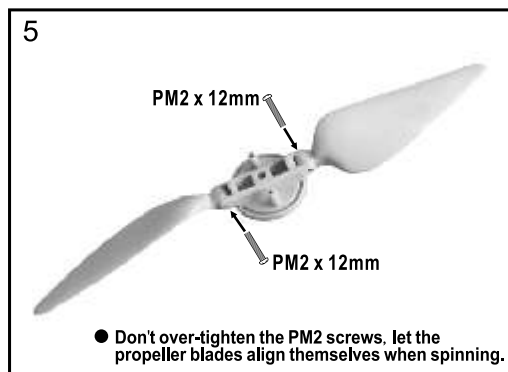
PWA2 x 8mm

10 Radio Equipment

PM2 x10mm **Screw** ——— 2

M2 **Nylon Insert Lock Nut** ——— 2

d2 x D5mm **Washer** ——— 2
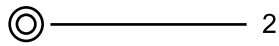
● **Receiver wrapped up in sponge**

Elevator Servo

Pushrod Connector   Elevator Servo   Battery Tie   Battery   Double-Sided Tape   Speed Control

Straper

Rudder Servo

Rudder Pushrod
Ø1.4x510mm

Fuel Tube
Ø4x4mm

Sponge

Front

Elevator Pushrod
Ø1.4x100mm

KA1.7x6mm

d2xD5mm
Washer   PM2 x10mm   Balsa
1.5x56x205mm   d2xD5mm
Washer   PM2 x10mm   Plywood
2x56x95mm

Mounting Plate

2mm

2mm

Mounting Plate

M2 Nylon Insert Lock Nut

M2 Nylon Insert Lock Nut

11 Canopy

PWA2x8mm **Screw** ——— 4

1mm

PWA2x8mm

L/R

P.7

Eye Screw
PA2.5x10x23mm

AB

Up
Bottom
90°

L/R

● **Bottom View**

Wing Tube
Ø9.6x240mm

Lead to Aileron Servo

● **Bottom View**

L/R

Rubber Band

● **Bottom View**
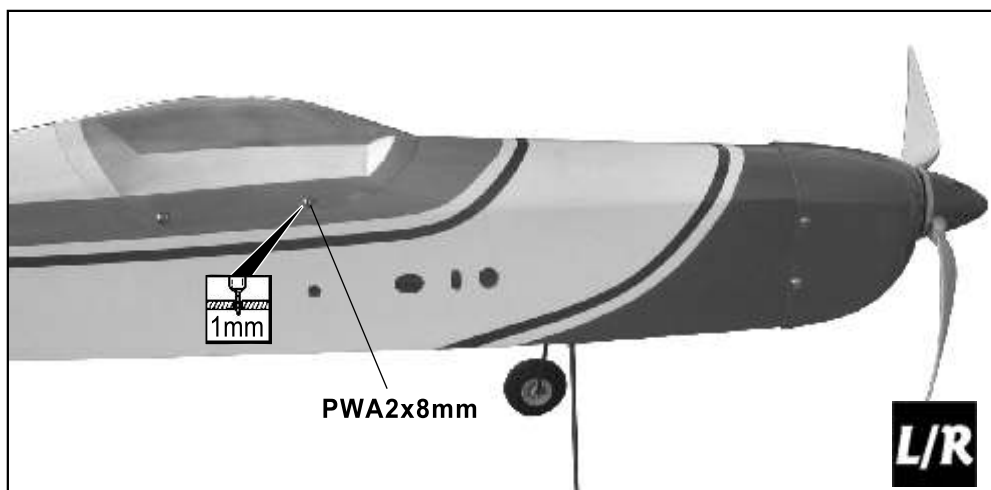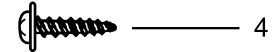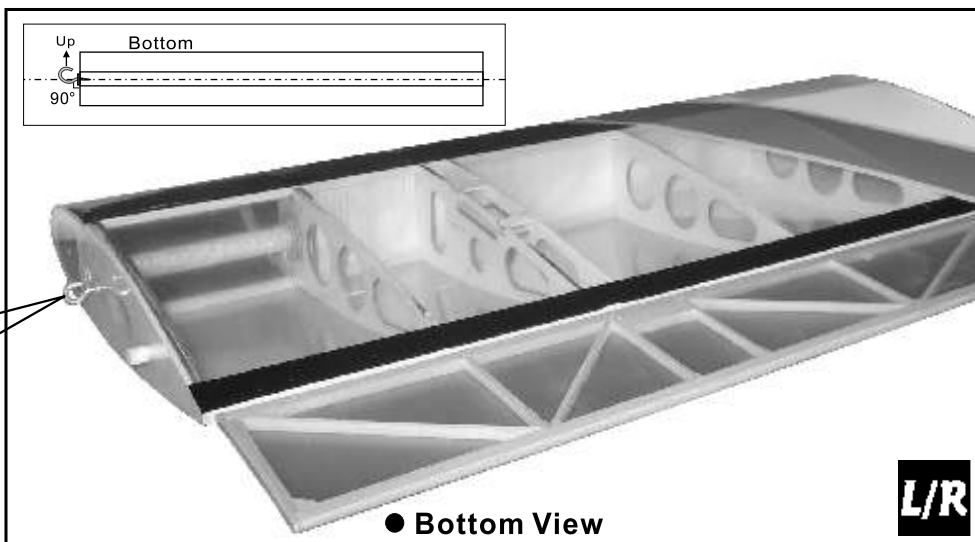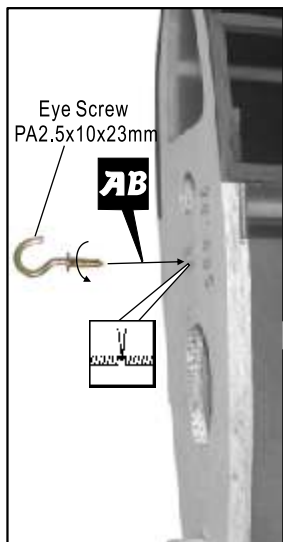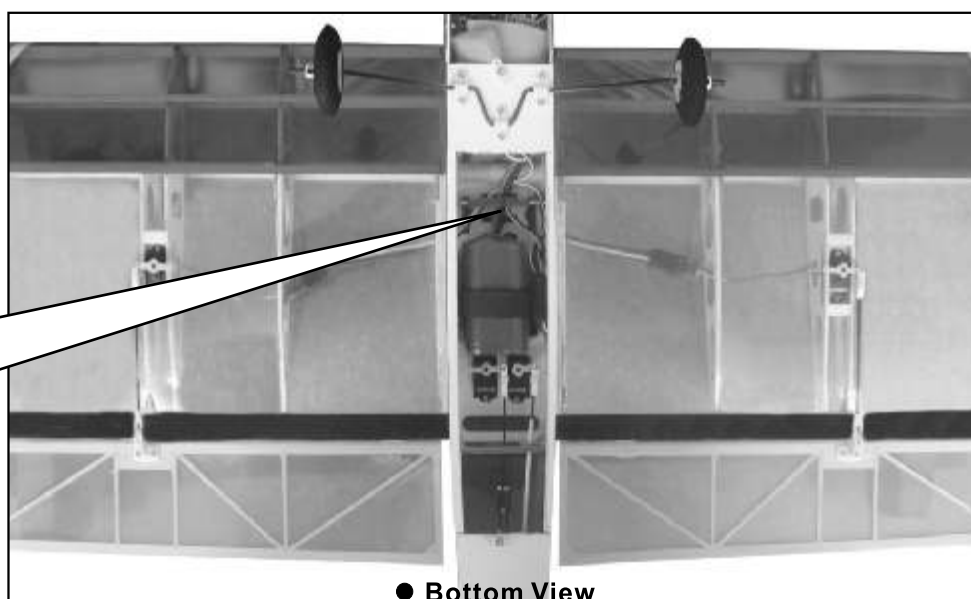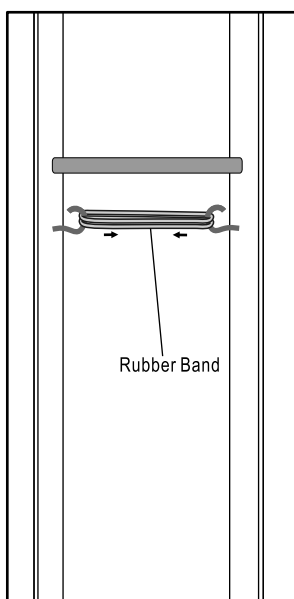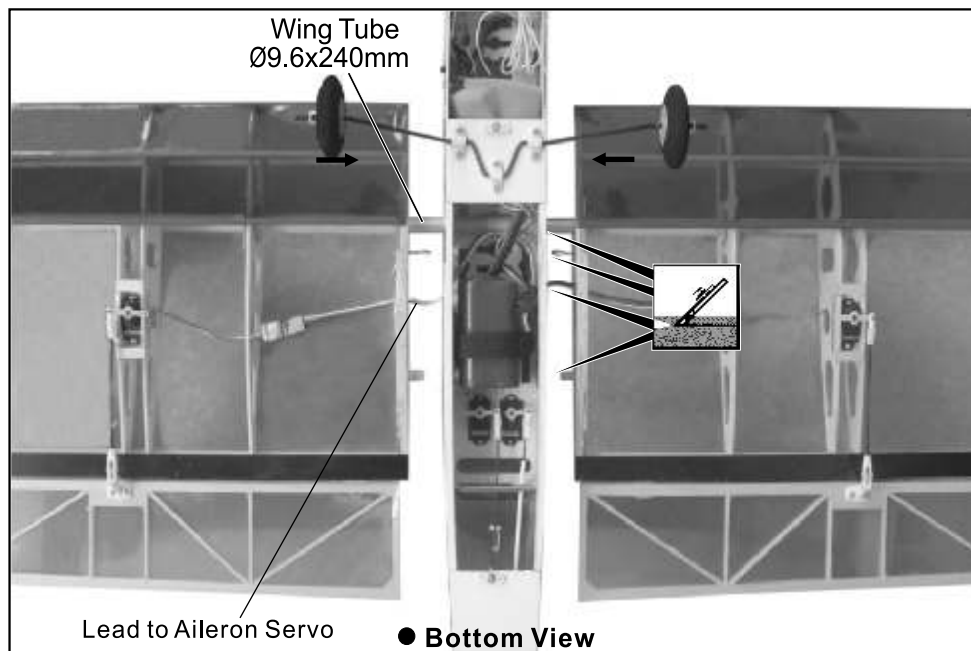
13 Wing Setting
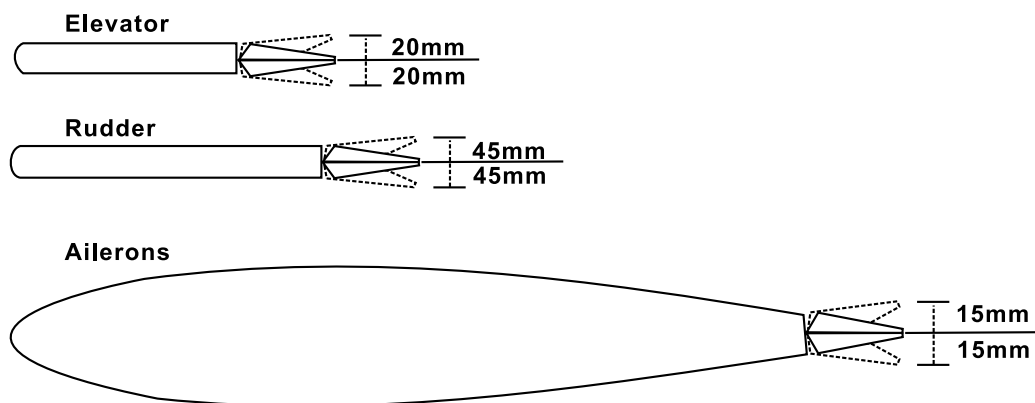
● **Adjust the wing fuselage configuration as shown in the diagrams.**

A   A'

B   B'

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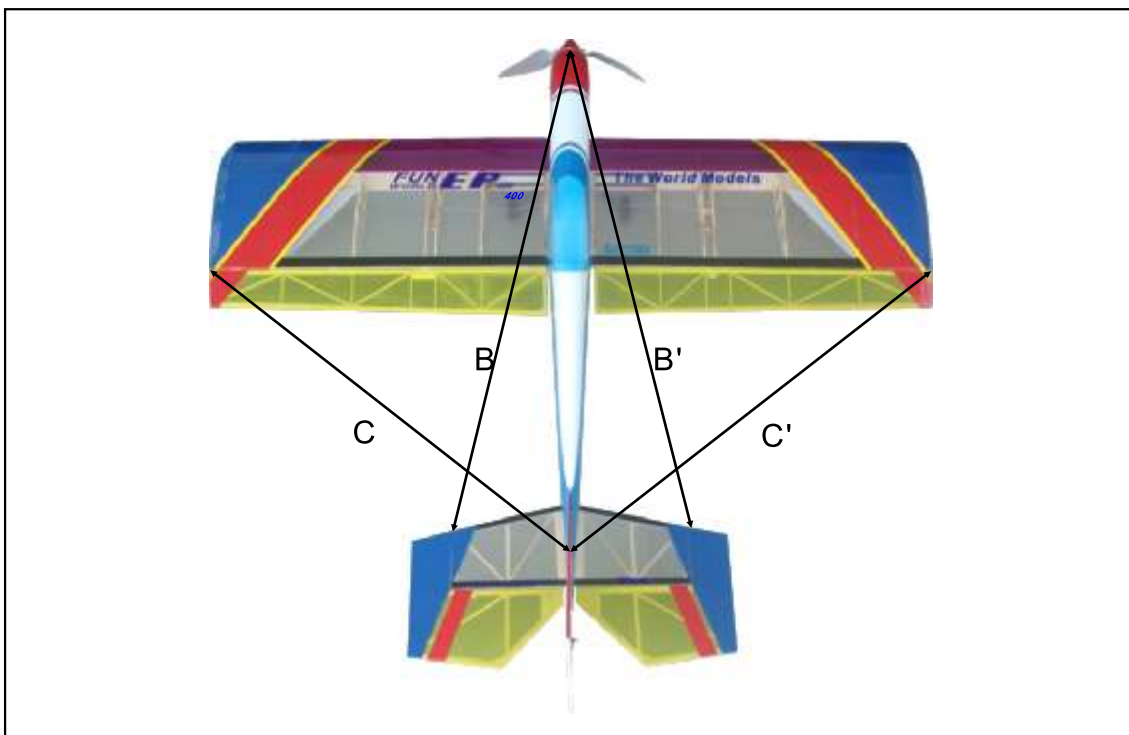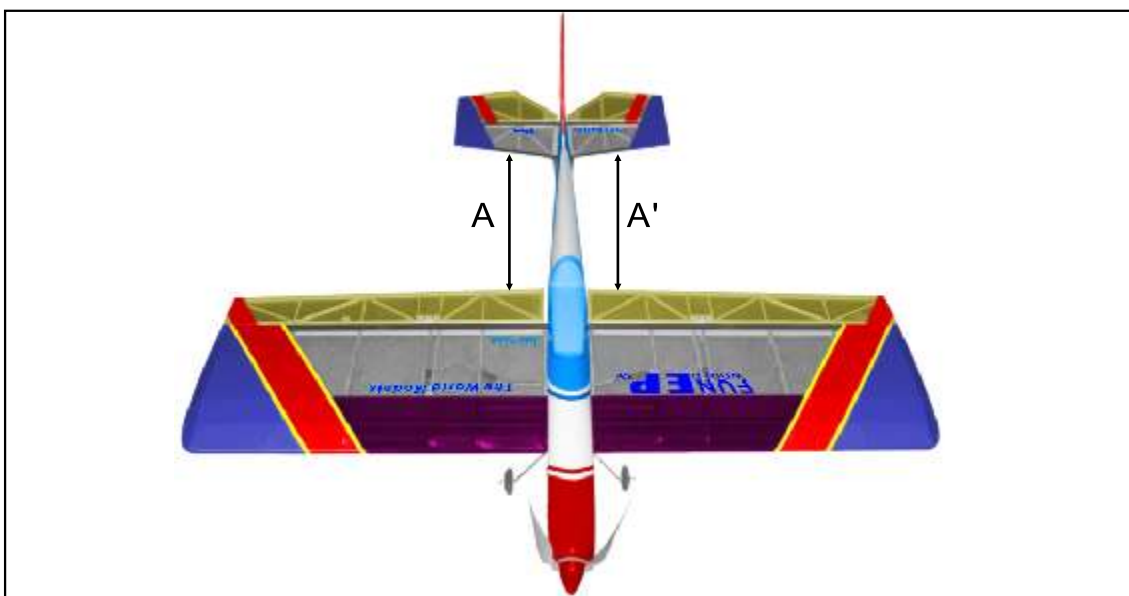
A=A'   B=B'   C=C'

13 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
20mm
20mm

Rudder
45mm
45mm

Ailerons
15mm
15mm

14 C.G.

The ideal C.G. position is 90mm (3.54 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.

90mm
3.54 in.

C.G.

! 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.

*FUN WORLD-EP*₄₀₀ is specially designed to be powered by KM0203800 Outrunner Motor.

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.

The World Models
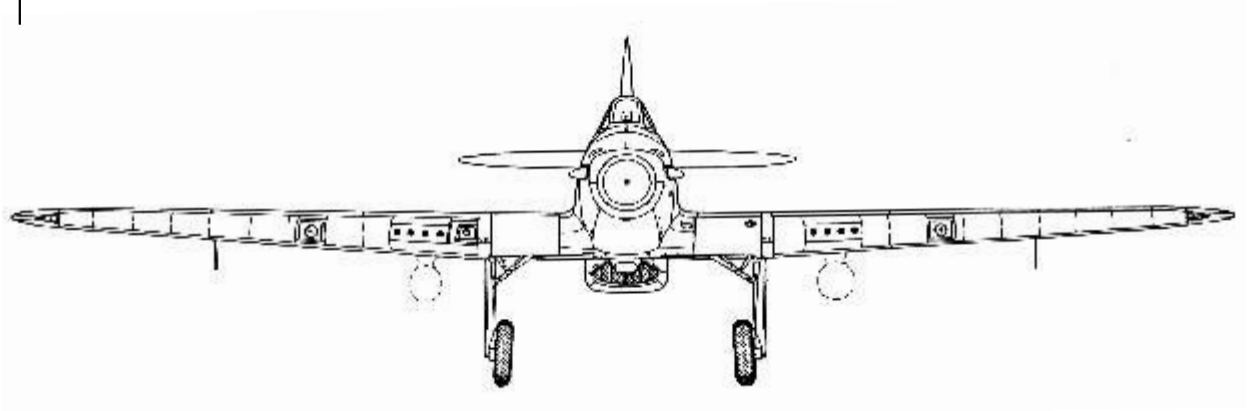
Warbirds

Pattern

Scale

Funfly

Sports

Electric

Trainer

Glider

Covering
(Lightex / Toughlon)

Boat

Accessories

http://www.theworldmodels.com