

Before commencing assembly, please read these instructions thoroughly.

Wingman II



ARF *Almost Ready to Fly*

Specifications

Wing Span: 50 in / 1270 mm

Wing Area: 484 sq in / 31.2 sq dm

Flying Weight: 3.5 lbs / 1600 g

Fuselage Length: 44.5 in / 1130 mm

Requires: (Engine powered) 2-stroke 0.40 engine

4-channel radio w/ 4 standard servos

(Electric powered) 450W motor system

4-channel radio w/ 3 standard servos

40A brushless ESC with 11x8E propeller, 4 cells

14.8V 3200 mAh Li- Po battery & charger



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(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.

* Specifications are subject to change without notice.*



THE WINGS MAKER
FACTORY PRE-FABRICATED
ALMOST-READY-TO-FLY (ARF) SERIES
MADE IN CHINA
www.thewingsmaker.com

Wingman II

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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)



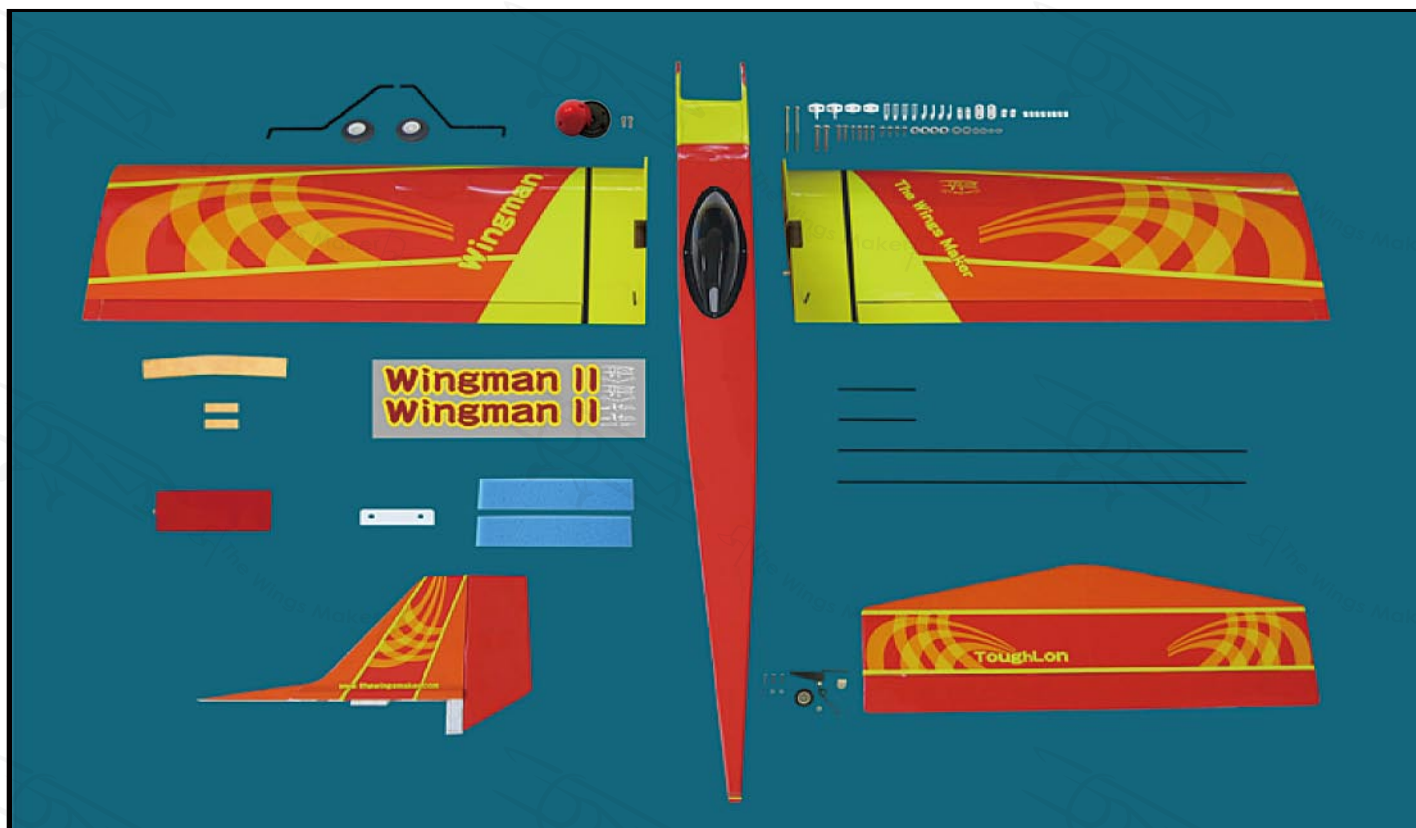
Pierce the shaded portion
covering film.



Pay close attention here!



Do not overlook this symbol!

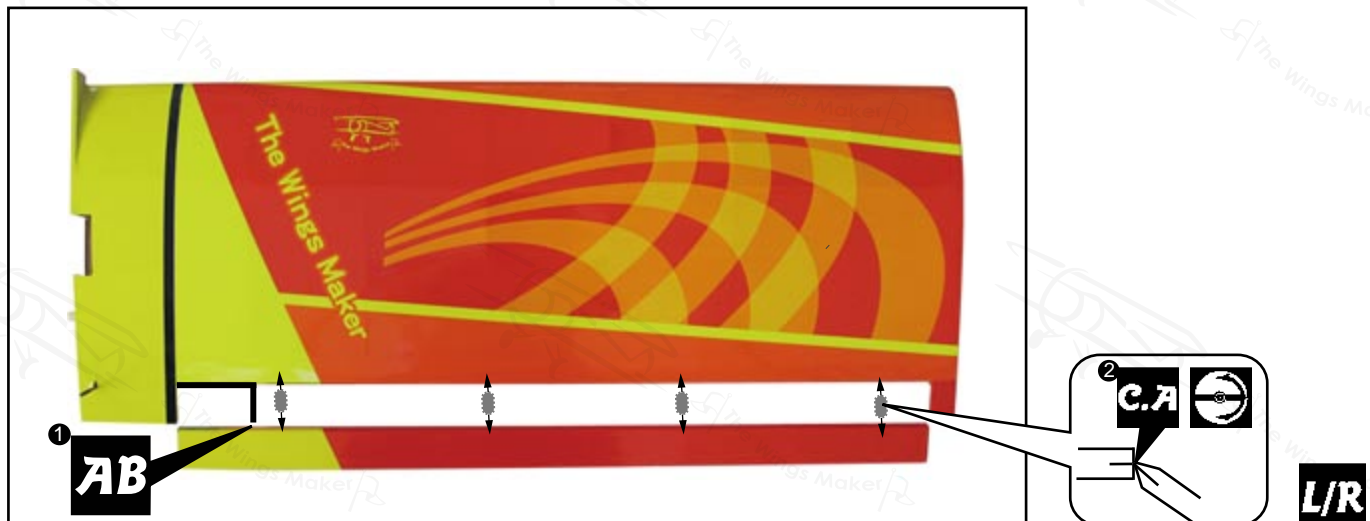


Parts List

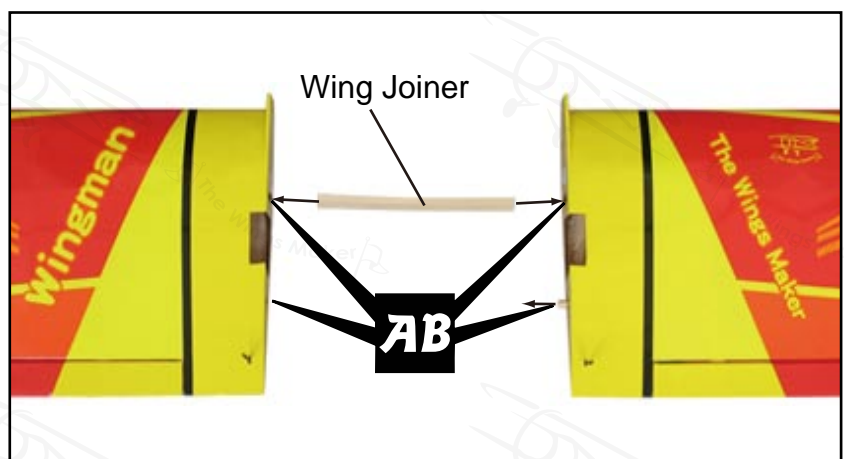
1. MAIN WING -- 1 pair
 2. WING JOINER 6x18x180mm -- 1 pc.
 3. FUEL TUBE d2xD4x4mm -- 4 pcs
CLEVIS -- 2 pcs
STRAPER -- 2 pcs
RING Ø2.3mm -- 2 pcs
PUSHROD Ø1.4x110mm w/ Threads (For Aileron) -- 2 pcs
PLYWOOD 2x8x22mm (For Aileron Servo) -- 1 pc.
PLYWOOD 4x8x22mm (For Aileron Servo) -- 1 pc.
 4. STABILIZER & ELEVATOR -- 1 set
FUSELAGE -- 1 pc.
 5. VERTIACL FIN & RUDDER -- 1 set
SCREW PM3x60mm -- 2 pcs
WASHER d3xD7mm -- 2 pcs
 6. MAIN LANDING GEAR -- 1 pair
COLLAR Ø3.1mm w/ set screw -- 4 sets
WHEEL Ø55mm -- 2 pcs
SCREW PA3x10mm -- 4 pcs
MOUNTING PLATE 12x20mm -- 2 pcs
 7. TAIL LANDING GEAR -- 1 set
COLLAR Ø2.1mm w/ set screw -- 1 set
WHEEL Ø23mm -- 1 pc.
STEERING BRACKET -- 1 pc.
SCREW PA3x8mm -- 2 pcs
SCREW PM2x10mm -- 1 pc.
M2 NUT -- 1 pc.
 8. SCREW PB2x10mm -- 2 pcs
FUEL TUBE d2xD4x4mm -- 1 pc.
CLEVIS -- 1 pc.
HORN -- 1 set
PUSHROD Ø1.4x655mm w/ Threads (For Elevator) -- 1 pc.
 9. SCREW PB2x10mm -- 2 pcs
FUEL TUBE d2xD4x4mm -- 1 pc.
CLEVIS -- 1 pc.
HORN -- 1 set
PUSHROD Ø1.4x655mm w/ Threads (For Rudder) -- 1 pc.
 10. SPINNER Ø52mm -- 1 pc.
 11. STRAPER -- 2 pcs
FUEL TUBE d2xD4x4mm -- 2 pcs
SPONGE 10x80x200mm -- 2 pcs
 12. SCREW PM2x10mm -- 2 pcs
WASHER d2xD5mm -- 2 pcs
M2 NYLON INSERT LOCK NUT -- 2 pcs
MOUNTING PLATE (PL4114015) -- 2 pcs
PLYWOOD 2x67.5x94.3mm -- 1 pc.
PLYWOOD 2x67.4x133mm -- 1 pc.
 13. SCREW HM3x25mm -- 2 pcs
WASHER d3xD7mm -- 2 pcs
PLASTIC PLATE 1x15x80mm -- 1 pc.
 14. CANOPY -- 1 pc.
SCREW PWA 2.3x8mm -- 4 pcs
 15. DECALS: GA029 DEC -- 1 set
- COVERING:--
- LIGHTEX SGX 201 BLACK
 - TOUGHLON STL100 WHITE
 - TOUGHLON STL 311 FERRARI RED
 - TOUGHLON STL 330 CADMINU YELLOW
 - TOUGHLON STL 540 PEARL GREEN
 - TOUGHLON STL GA029 RED/WHITE
 - TOUGHLON STL GA029 RED/YELLOW
 - TOUGHLON STL GA029 GREEN/WHITE

1 Main Wing

- Apply epoxy glue to the linkage wire BEFORE applying instant type CA glue to both sides of each hinge.

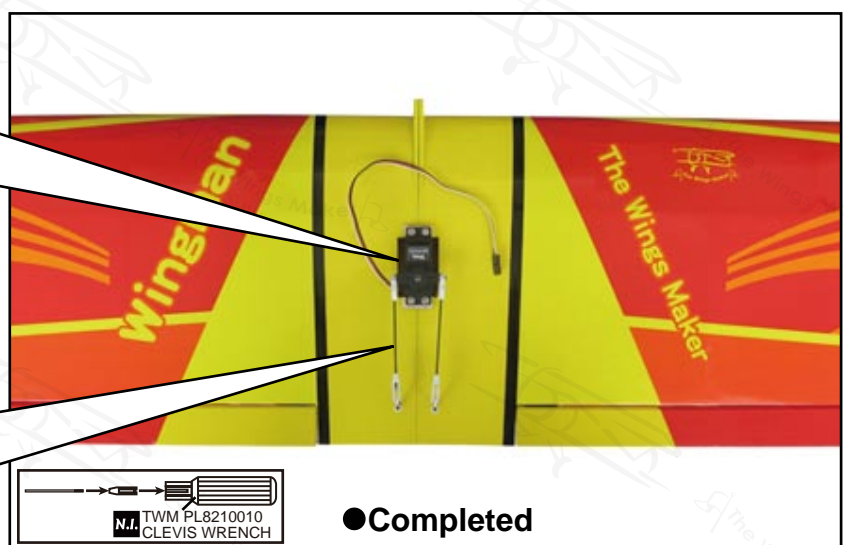
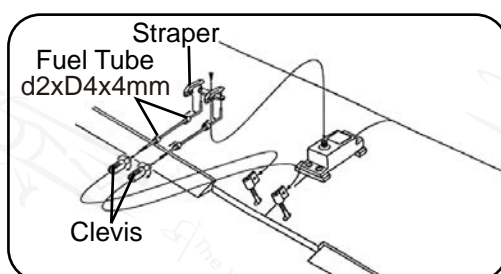
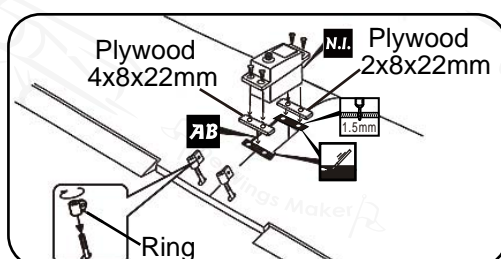


2 Main Wing

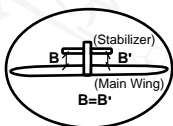


- Please dry fit wing joiner into left and right wing to make sure they fit with the proper dihedral angle, mark the wing joiner if necessary. Apply epoxy glue to both sides of all surfaces in contact. Use a stick to apply the glue to inner side of wing joiner sleeve, and apply the glue to wing joiner before putting them together. Wing joiner not glued properly will lead to wing failure and plane crash.

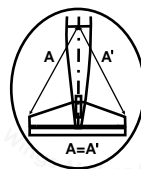
3 Aileron Servo



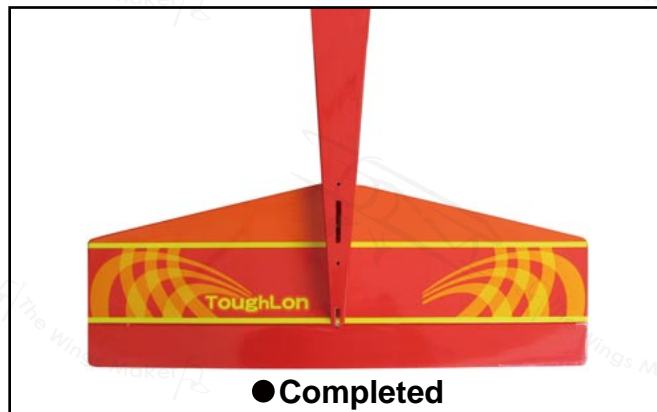
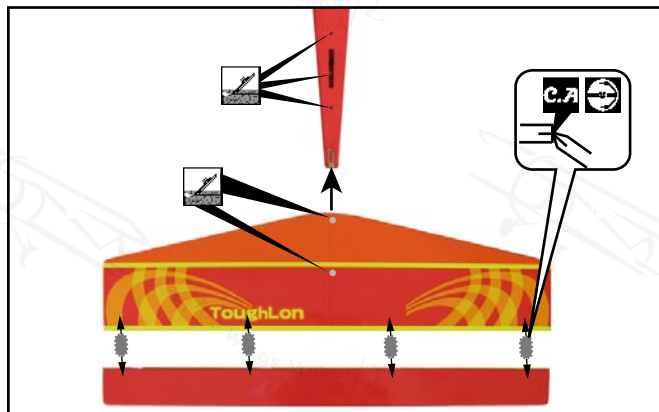
4 Stabilizer & Elevator



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



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



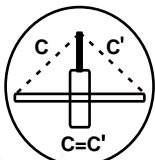
● Completed

5 Vertical Fin & Rudder

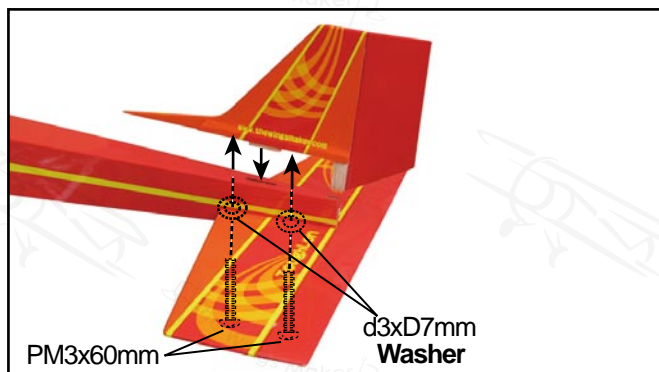
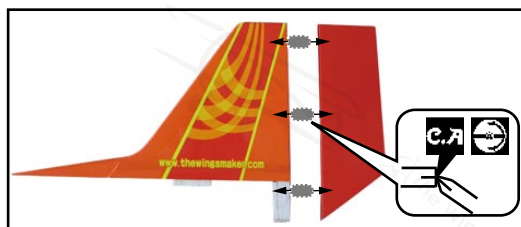
PM3x60mm Screw

d3xD7mm Washer

2



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



● Completed

6 Main Landing Gear

PA3x10mm Screw

4

3.1mm Collar

4

3mm Set Screw

1.5mm

Mounting Plate

PA3x10mm

3.1mm Collar

3mm Set Screw

1.5mm

Mounting Plate

PA3x10mm

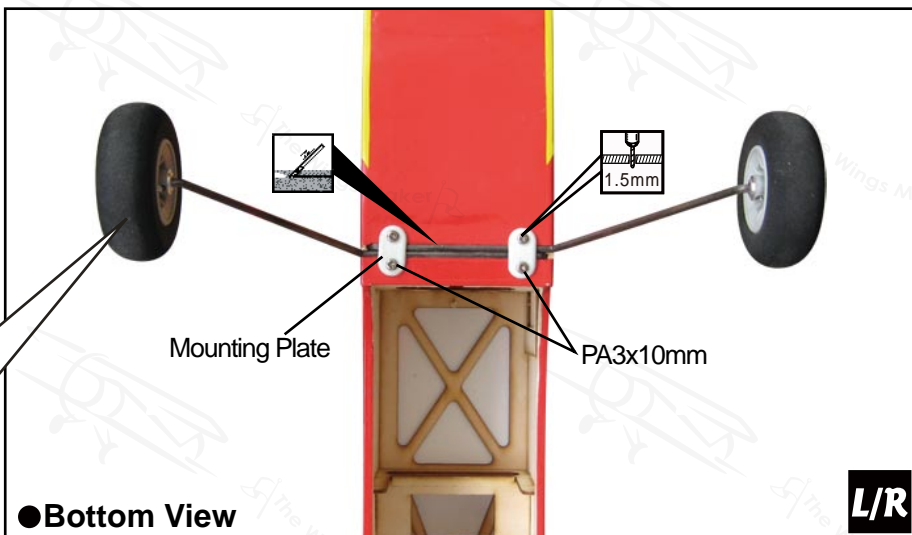
3.1mm Collar

3mm Set Screw

1.5mm

Mounting Plate

PA3x10mm



● Bottom View

L/R

7 Tail Landing Gear

PM2x12mm Screw

1

M2 Nut

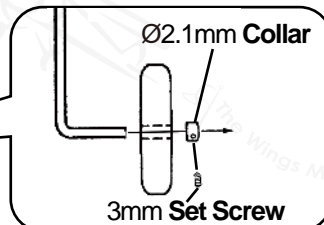
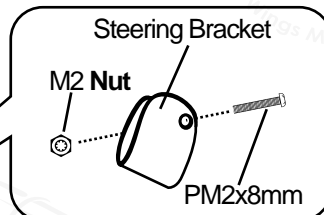
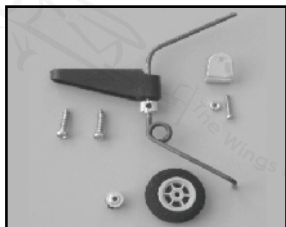
1

PA3x12mm Screw

2

2.1mm Collar

1



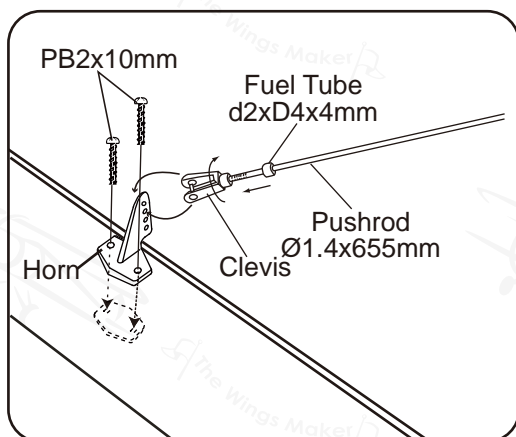
PA3x12mm

1.5mm

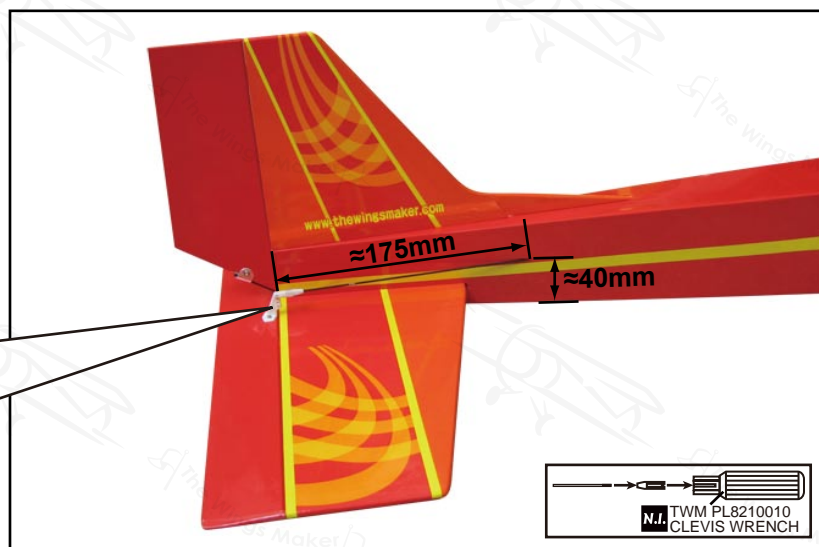
8 Elevator Pushrod

PB2x10mm Screw

2

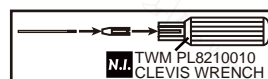


- Ø1mm pilot holes for The Wings Maker horn are pre-drilled. Please look for pin-hole marks at under side of control surfaces.



≈175mm

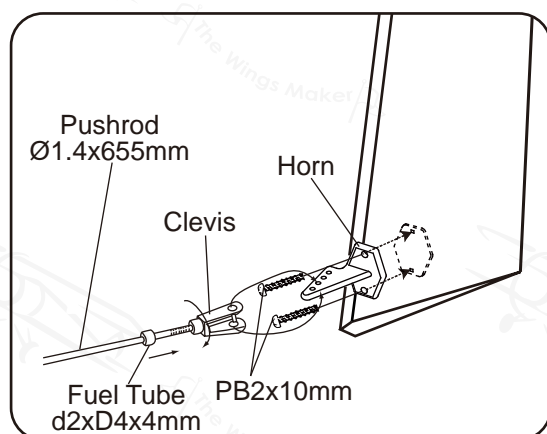
≈40mm



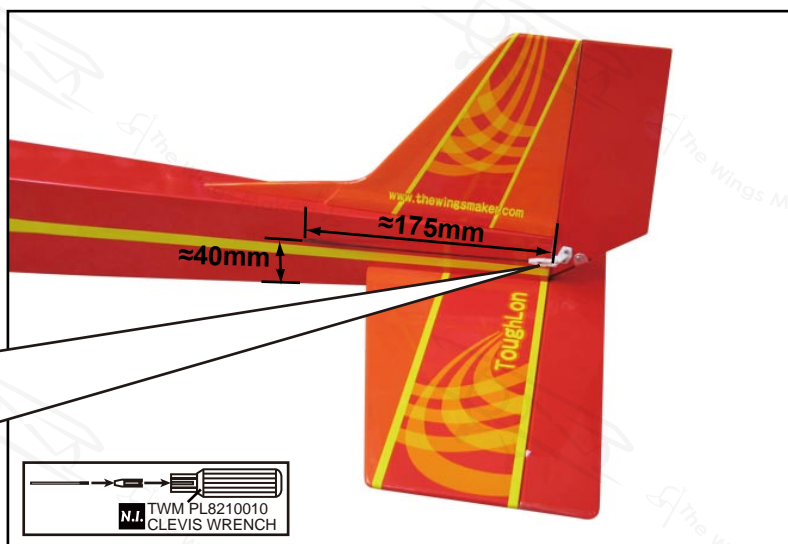
9 Rudder Pushrod

PB2x10mm Screw

2

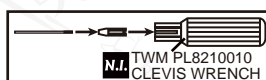


- Ø1mm pilot holes for The Wings Maker horn are pre-drilled. Please look for pin-hole marks at side of control surfaces.



≈40mm

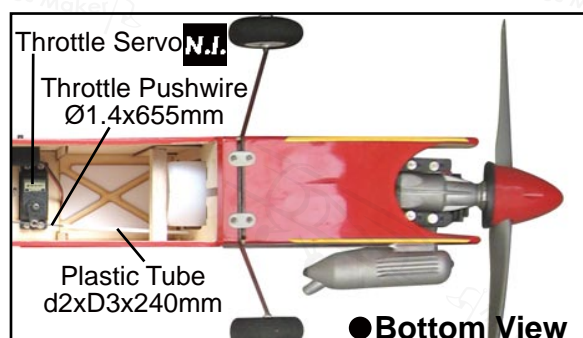
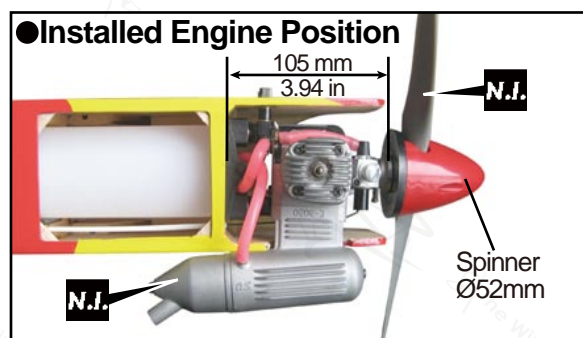
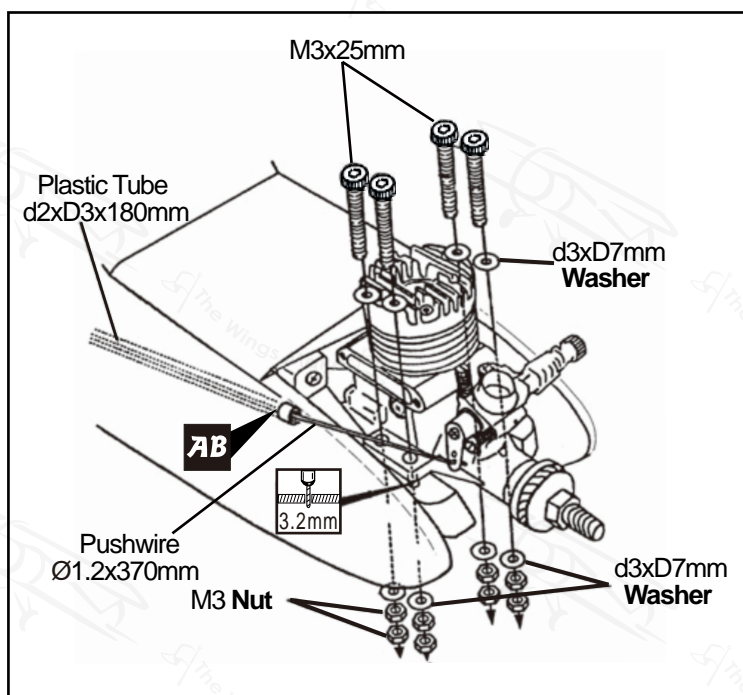
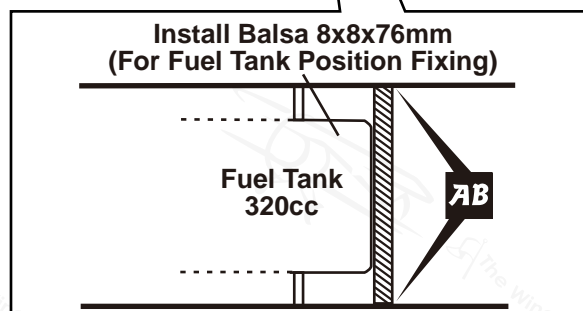
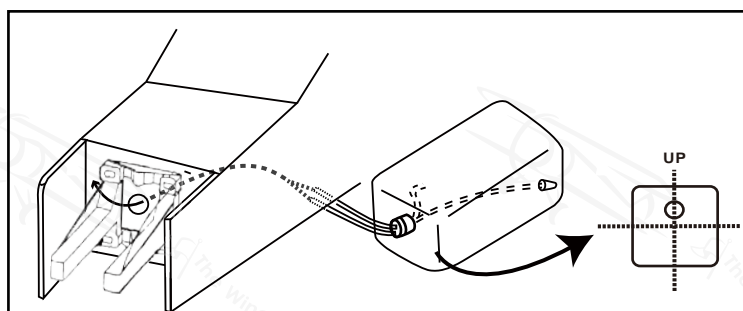
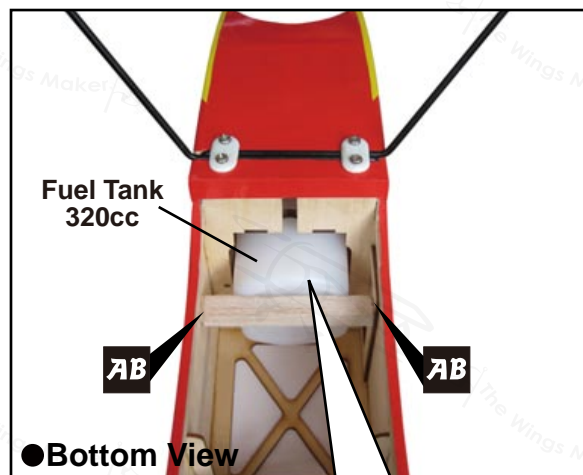
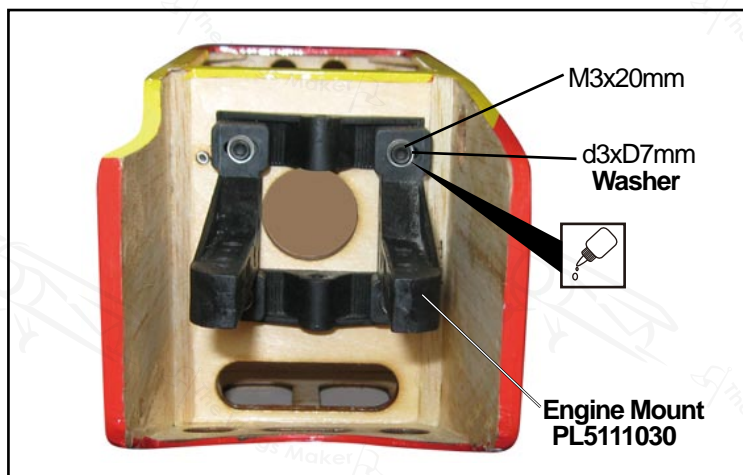
≈175mm



10A Engine

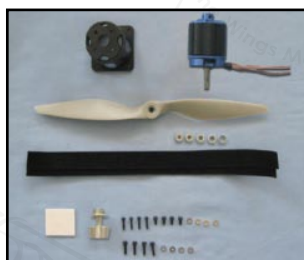
- This step is for engine powered. Please follow step 10B if your model is electric powered.
 - To complete your Wingman II (nitro powered), you need to purchase The Wings Maker GA029GPTS.
 - Apply thread locker to screws.
- !** Blind nuts are off-centered to keep the spinner at the fuselage axis.

- Optional parts for nitro powered Wingman II, GA029GPTS.



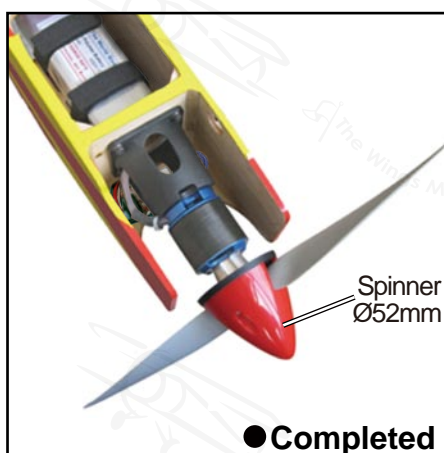
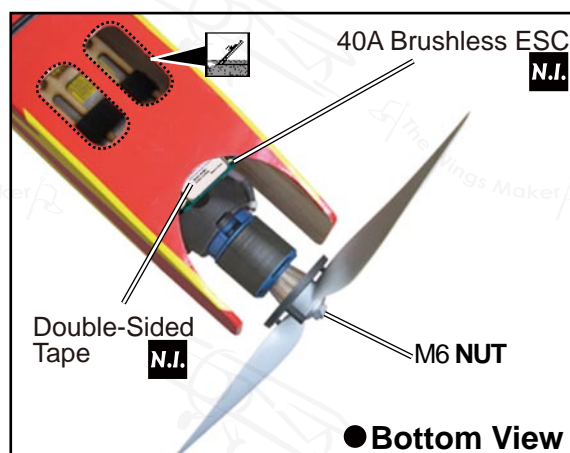
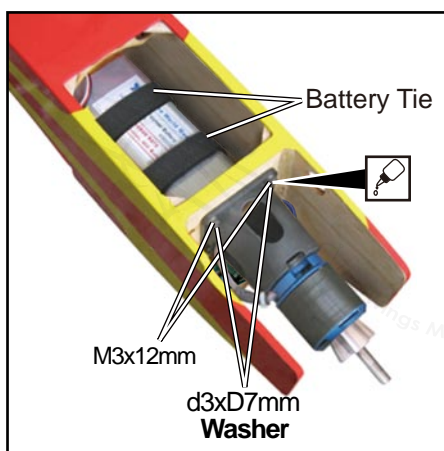
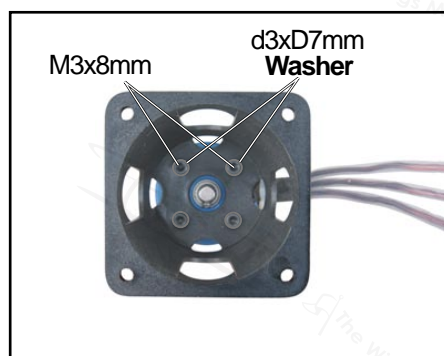
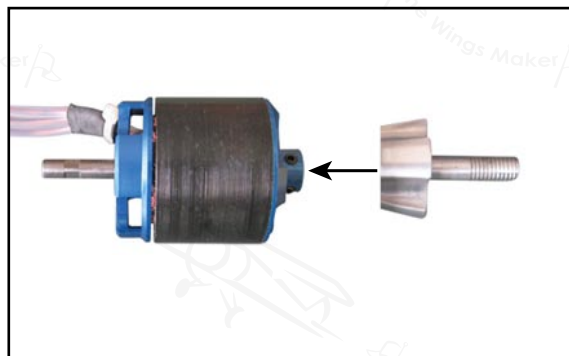
10B Electric

● If you want to use electric powered, please follow this step.



N.I. GA029EPTS

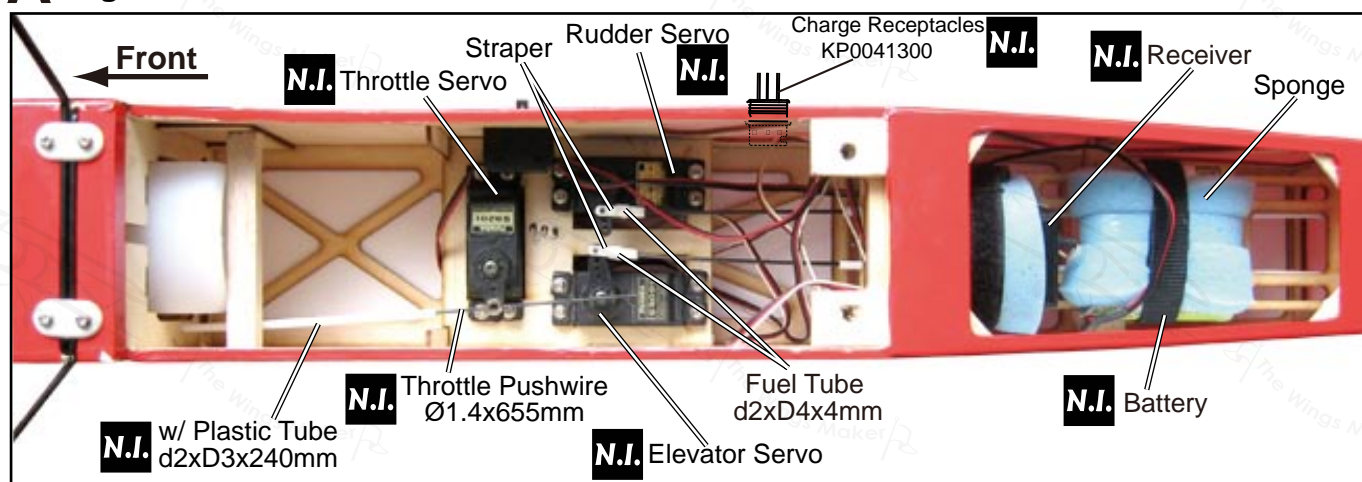
● To Complete your Wingman II (electric powered), you need to purchase The Wings Maker GA029EPTS.



11 Radio Equipment

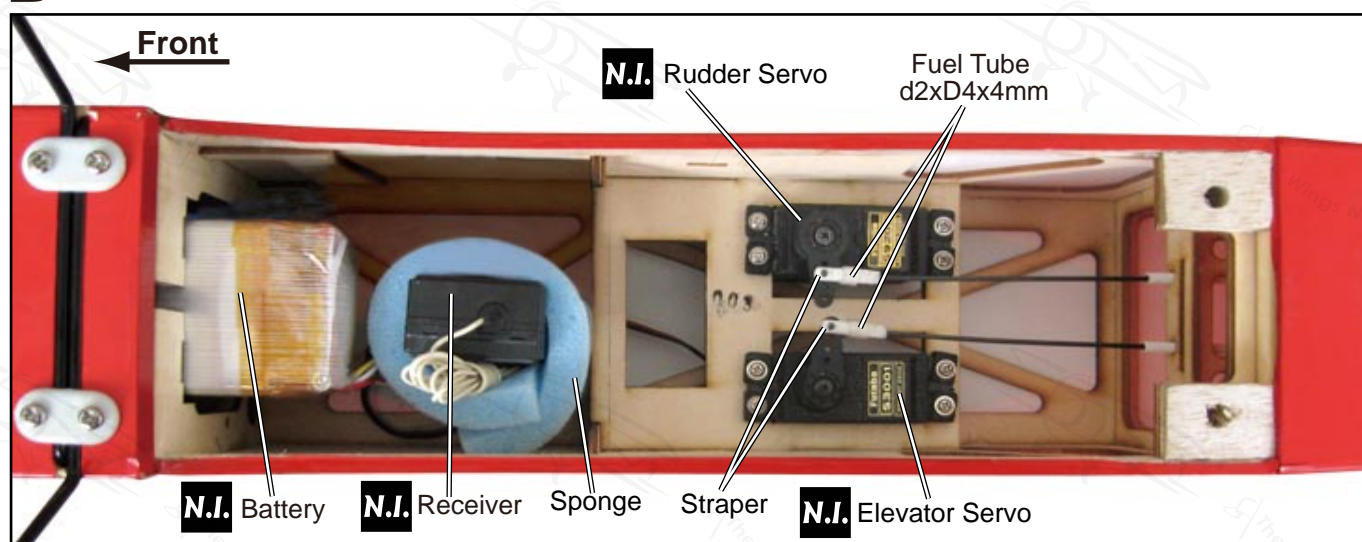
● Install and arrange the servos as shown in the diagram.

A Engine Powered



● Bottom View

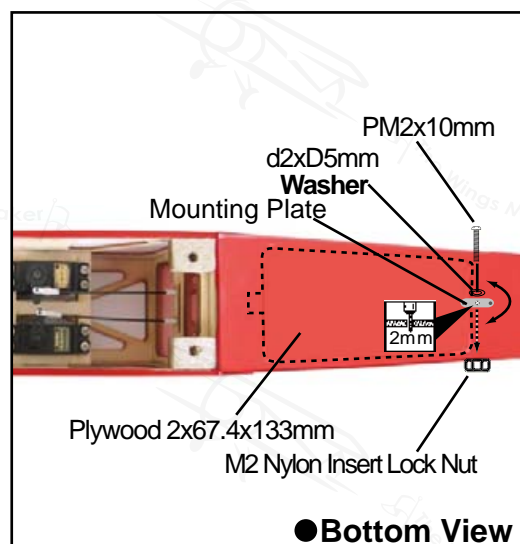
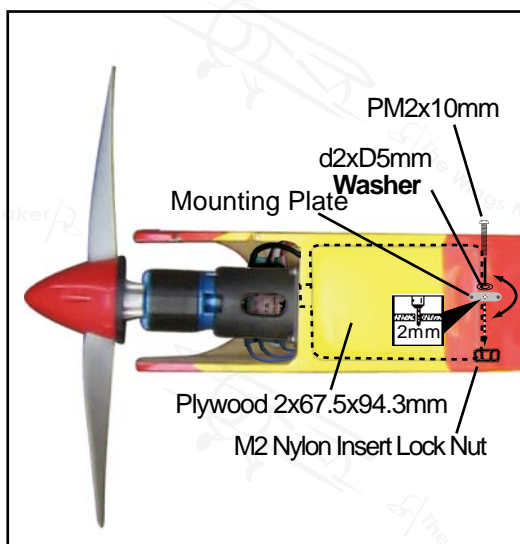
B Electric Powered



● Bottom View

12 Fuselage Cover

PM2x10mm Screw	2
d2xD5mm Washer	2
M2 Nylon Insert Lock Nut	2



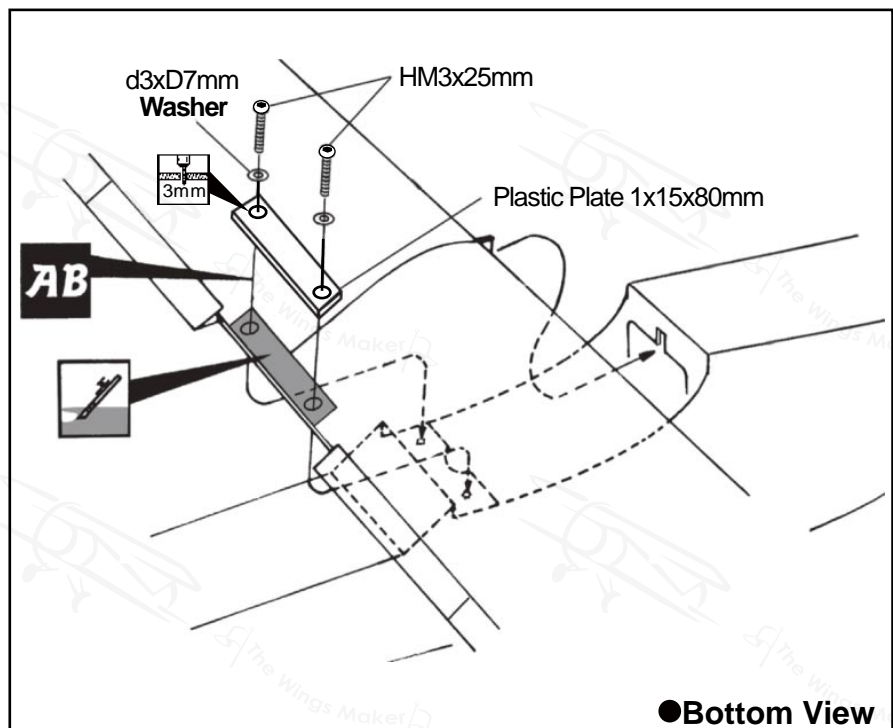
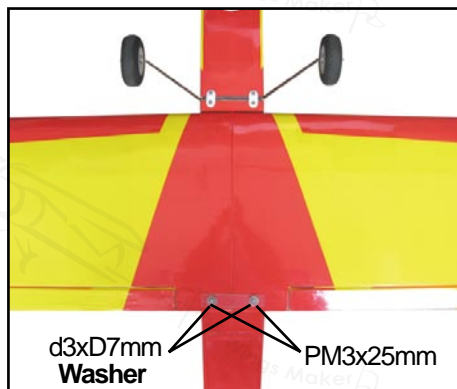
● Bottom View

13 Main Wing

HM3x25mm **Screw**



d3xD7mm **Washer**



14 Canopy

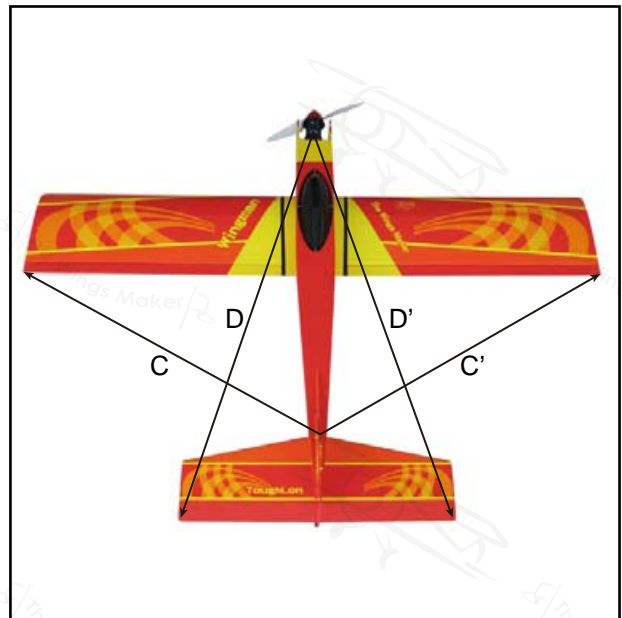
PWA2.3x8mm **Screw**



L/R

15 Wing Setting

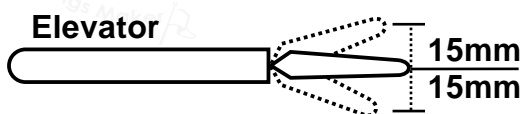
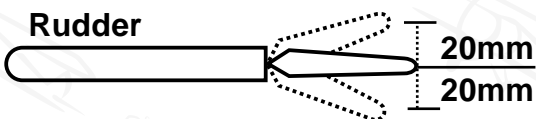
● Adjust the wing and fuselage configuration as shown in the diagrams.



$$A=A' \quad B=B' \quad C=C' \quad D=D'$$

16 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.



17 C.G.

The ideal C.G. position is 76mm (3 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.



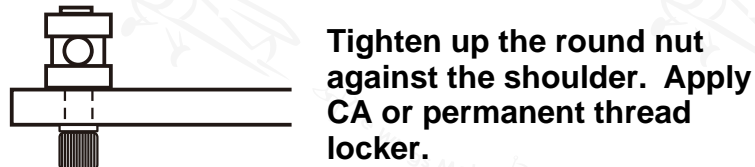
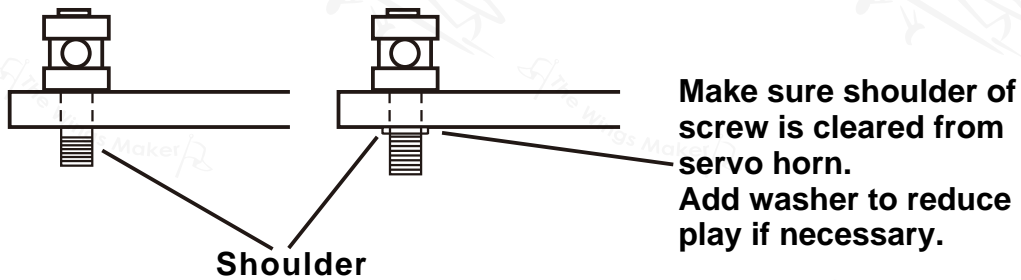
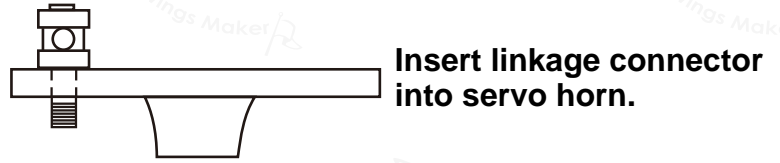
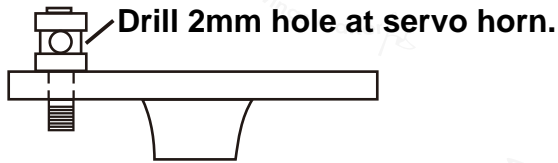
! Warning!

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.
- # **Wingman II** is specially designed to be powered by **2C 0.40 engine** or **450W motor system**.
- # Make sure the air field is spacious, never fly the plane too close to people and never get too close to a running propeller. Extreme caution should be exercised when working with electric powered models. Make sure the propeller is cleared of all objects, especially your hands before connecting the battery to the model. Make sure you understand the operation of the ESC (Electronic Speed Control) by studying the ESC manual. Once you plug in the battery for electric powered model, always treat the propeller as a rotating one, as accidental movement of the throttle stick will spin the propeller and could cause injuries.
- # 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. Don't use hot iron near the seams or edges, hot iron will melt the glue and shrink the covering at the same time, causing the seams to pull away.
- # Check and re-tighten up all factory assembled screws, use thread locker if necessary.

LINKAGE CONNECTOR

HW7111050 & HW7111060



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

Optional Parts

(ACCESSORIES)

Outrunner 37/ 48 Deluxe

Code No.	Package
----------	---------

KM0374810

1 pc



- Max speed: 13860 rpm
- Kv (rpm/V): 770
- Operating Power: 450W
- Operating Voltage: 8.5-18V
- Operating Current: 30A
- Peak Current: 38A (max. 15 sec.)
- Internal Resistance: 34 m ohms
- Diameter: 37.2 mm
- Length: 48.5mm
- Weight: 172 g
- Shaft Diameter: 5mm
- Shaft Length: 21mm
- Mounting Screw: M3 (Front) and M2.5 (Back)
- Distance of Mounting Holes: 25mm (Front) and 15.5mm (Back)

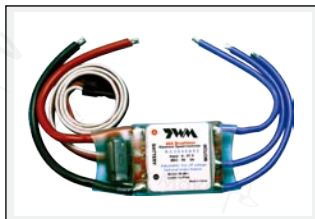
40A Brushless ESC

Code No.	Size	Package
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KC2040A02

55x28x12mm

1 pc



- Voltage Range : 6 ~ 21V
- Current : 40A continuous
- Current (Burst, <10 seconds): 55A
- Weight : 33 g (with wires and connector)
- BEC : 5V / 3A
- Low Voltage Cut-off : /
- Light weight with low internal resistance for high current operation
- BEC function for Li-ion / Li-poly 2 – 5 cells; Nimh / Nicd 5 – 15 cells operation.
- Low battery voltage auto cut off to reserve power to the servos.
- Safe start up motor.

Charge Receptacles

Code No.	Size	Package
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KP0041300



Fuel Filler

Code No.	Size	Package
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PL8110030 15 x 22 x 49mm 1 x 1 pc

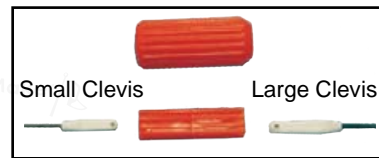


Clevis Wrench

Code No.	Size	Package
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PL8210010

1 set



Special tool for clevis installation.
Suitable for standard and small (EP) clevis.

Standard Servo

Code No

SV4031



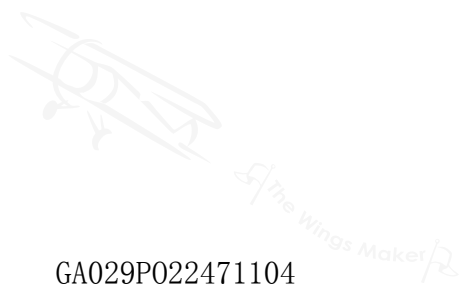
Speed : 0.17 sec / 60° @4.8V
0.14 sec / 60° @6.0V
Torque : 3.2kg.cm / 44.8 oz - in @4.8V
4.1kg.cm / 57.4 oz - in @6.0V
Size : 40.6 x 20 x 37mm /
1.60 x 0.79 x 1.46 in
Weight : 39.4 g / 1.39 oz

Field Stand

Code No.	Size	Package
----------	------	---------

MS9111430 600 x 240 x 310mm 1 pc





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