

FOCKE-WULF 190A



**Requires : 0.46-0.55 cu. in. displacement 2-stroke
0.70-0.81 cu. in. displacement 4-stroke
6-channel radio w/ 6 standard servos
and 1 low profile retract servo.**

Specifications

Wing Span	58.5 in / 1485 mm
Wing Area	539 sq in / 34.8 sq dm
Flying Weight	6.5 lb / 2970 g
Fuselage Length	49 in / 1250 mm

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**

FOCKE-WULF 190A

INDEX

BEFORE YOU BEGIN.....	P.1
PARTS LIST.....	P.2
ASSEMBLY.....	P.3-P.13
SAFETY PRECAUTIONS.....	P.14

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).



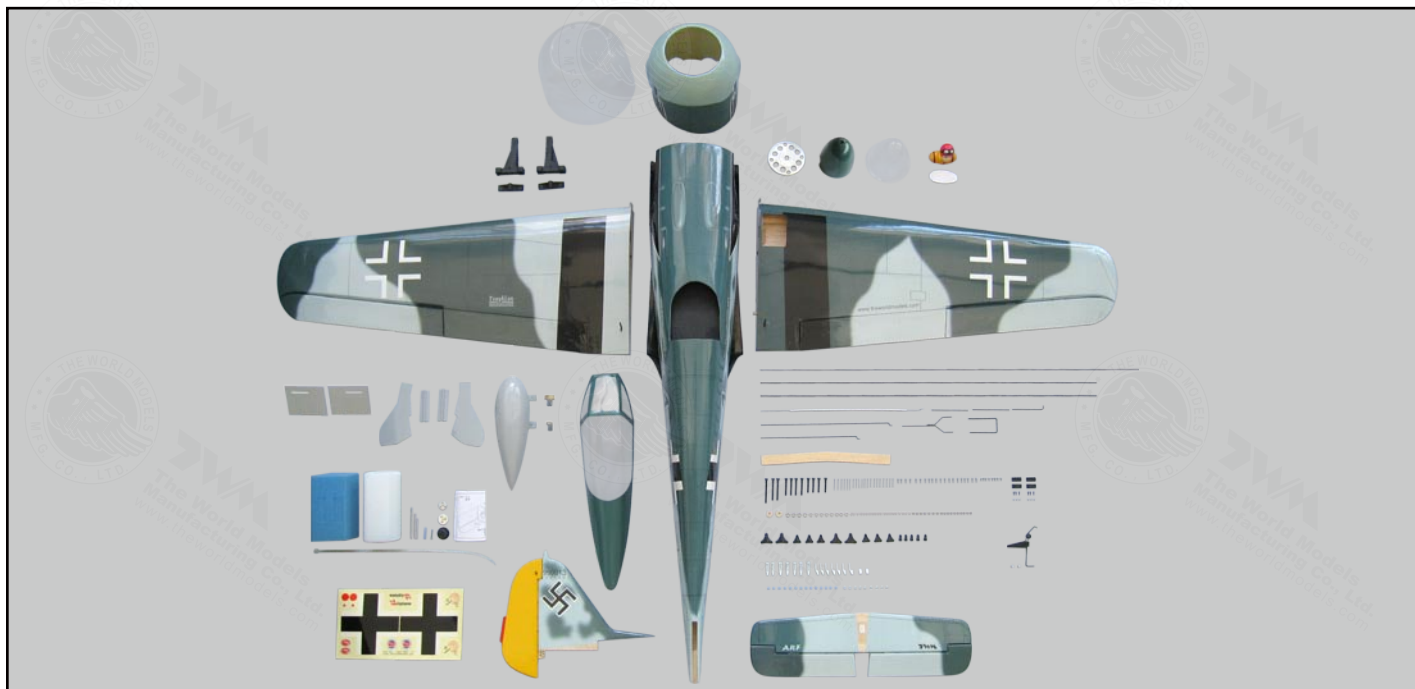
Pierce the shaded portion
covering film.



Pay close attention here!



Do not overlook this symbol !



Parts List

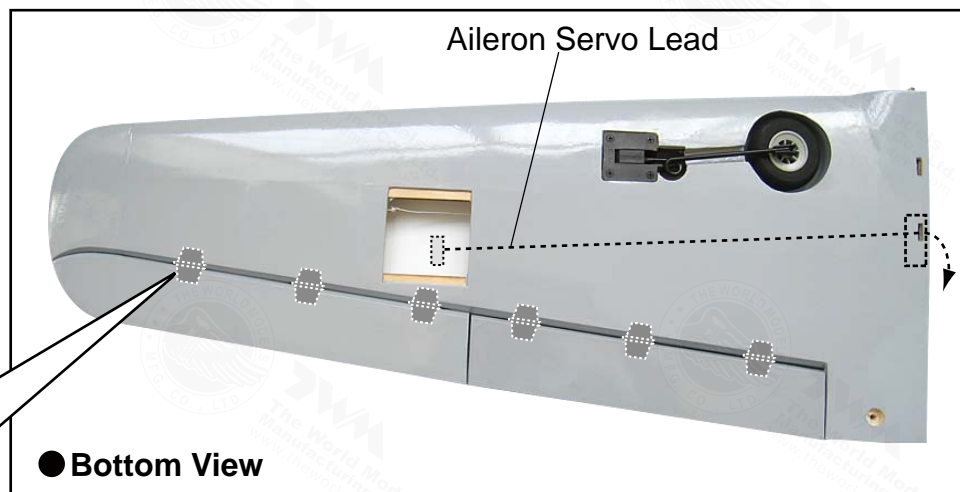
- 1.MAIN WING -- 1 pair
- 2.RETRACTABLE LANDING GEAR -- 1 pair
 - M2 NUT -- 8 pcs
 - SCREW PM2x6mm -- 8 pcs
 - WASHER d2xD5mm -- 16 pcs
 - MAIN LANDING GEAR COVERS -- 1 pair
 - PVC PLATE 0.5mm 20x60mm -- 2 pcs
- 3.WING JOINER 6x20x251mm -- 1 pc.
- 4.PUSHROD Ø1.8x75mm w/ Threads (For Aileron) -- 2 pcs
 - SCREW PB2x22mm -- 4 pcs
 - SCREW PB2x18mm -- 2 pcs
 - SCREW PWA2x8mm -- 8 pcs
 - TRI-HORN M3x14mm (S) PL4111221 -- 2 sets
 - STRAPER PL4112102 -- 2 pcs
 - CLEVIS PL4112103 -- 2 pcs
 - FUEL TUBE Ø6x5mm -- 4 pcs
 - SERVO MOUNTING PANEL PL5310000 -- 1 pair
 - DROP TANK -- 1 pc.
 - PLYWOOD(A) -- 1 pc.
 - PLYWOOD(B) -- 1 pc.
 - SCREW PM2x12mm -- 2 pcs
 - M2 NUT -- 2 pcs
 - WASHER d2xD5mm -- 4 pcs
- 5.PLASTIC RING PL4112023 -- 2 pcs
 - Y-TYPE PUSHROD Ø1.8x92mm (For Flap) -- 1 pc.
 - STRAPER PL4112102 -- 1 pc.
 - CLEVIS PL4112103 -- 2 pcs
 - FUEL TUBE Ø6x5mm -- 3 pcs
 - PLYWOOD 3x38x61mm -- 1 pc.
 - LINKAGE CONNECTOR Ø2.1mm HW7111060 -- 2 sets
- 6.TAIL LANDING GEAR PL7100001 -- 1 set
 - FUSELAGE -- 1 pc.
 - COLLAR Ø2.1mm w/ set screw -- 1 set
 - TAIL WHEEL Ø25mm -- 1 pc.
 - SCREW PA3x10mm -- 2 pcs
- 7.VERTICAL FIN & RUDDER -- 1 set
- 8.STABILIZER & ELEVATOR -- 1 set
- 9.PUSHROD Ø1.8x615mm w/ Threads (For Elevator) -- 2 pcs
 - SCREW PB2x16mm -- 6 pcs
 - TRI-HORN M3x14mm (S) PL4111221 -- 2 sets
 - CLEVIS PL4112103 -- 2 pcs
 - FUEL TUBE Ø6x5mm -- 2 pcs
- 10.PUSHROD Ø1.8x740mm w/ Threads (For Rudder) -- 1 pc.
 - SCREW PB2x16mm -- 3 pcs
 - TRI-HORN M3x22mm (S) PL4111301 -- 1 set
 - CLEVIS PL4112103 -- 1 pc.
 - FUEL TUBE Ø6x5mm -- 1 pc.
- 11.ENGINE MOUNT PL5111050 -- 1 set
 - SOCKET HEAD SCREW M4x25mm -- 4 pcs
 - WASHER d4xD9mm -- 4 pcs
- 12.FUEL TANK 380cc PL1111380 -- 1 set
 - CABLE TIE 1.5x5x400mm -- 1 pc.
 - DOUBLE-SIDE TAPE 40x100mm -- 1 pc.
- 13.SOCKET HEAD SCREW M3x30mm -- 4 pcs
 - M3 NUT -- 8 pcs
 - WASHER d3xD7mm -- 8 pcs
 - THROTTLE PUSHWIRE Ø1.2x320mm -- 1 pc.
 - PLASTIC TUBE d2xD3x230mm -- 1 pc.
- 14.COWLING --1 pc.
 - TRANSPARENT 3D TEMPLATE -- 1 pc.
 - SCREW PWA2.6x12mm -- 4 pcs
 - SILICON GROMMET d1.5xD6.5mm PL1265035 -- 4 pcs
 - SPINNER Ø76mm -- 1 set
- 15.LINKAGE CONNECTOR Ø2.1mm HW7111060 -- 1 set
- 16.PUSHROD CONNECTOR PL4410010 -- 1 set
 - PUSHROD Ø1.8x65mm (For Elevator) -- 1 pc.
 - STRAPER PL4112102 -- 2 pcs
 - FUEL TUBE Ø6x5mm -- 2 pcs
 - SPONGE 70x105x60mm -- 1 pc.
 - BALSA 5x5x107mm -- 2 pcs
- 17.SCREW HM4x40mm -- 2 pcs
 - WASHER d4.2xD14.5mm -- 2 pcs
- 18.CANOPY -- 1 pc.
 - SCREW PWA2.3x8mm -- 4 pcs
 - SILICON GROMMET d1.5xD6.5mm PL1265035 -- 4 pcs
 - PILOT PC001050A -- 1 pc.
 - WIRE Ø2mm -- 1 pc.
- 19.DECALS: A322DEC -- 1 set
- COVERING:--
 - TOUGHLON STL 322 FUS
 - TOUGHLON STL 322 WIG
 - TOUGHLON STL 203 LIGHT GRAY
 - TOUGHLON STL 331 CUB YELLOW
 - LIGHTEX SGX 201 BLACK
 - LIGHTEX SGX 311 FERRARI RED

1 Main Wing

L/R



● Bottom View

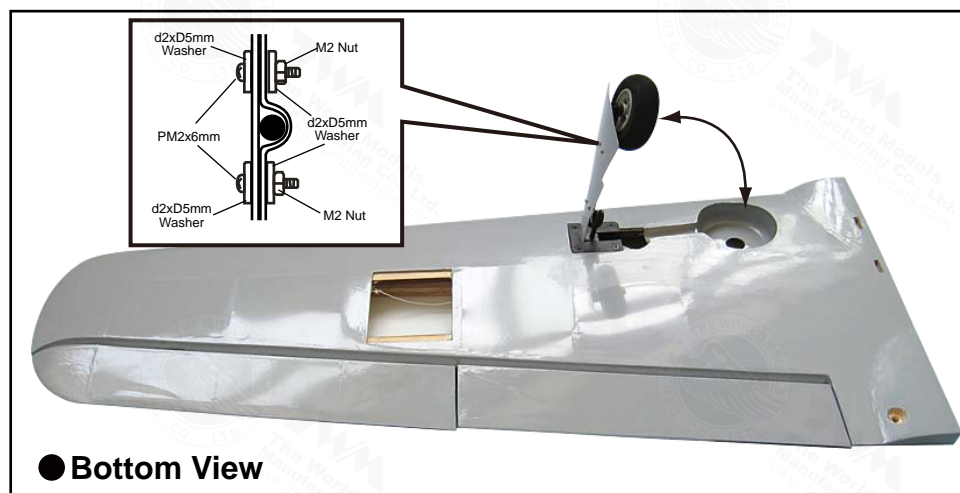


2 Retractable Landing Gear

PM2x6mm	Screw	8
M2	Nut	8
d2xD5mm	Washer	16

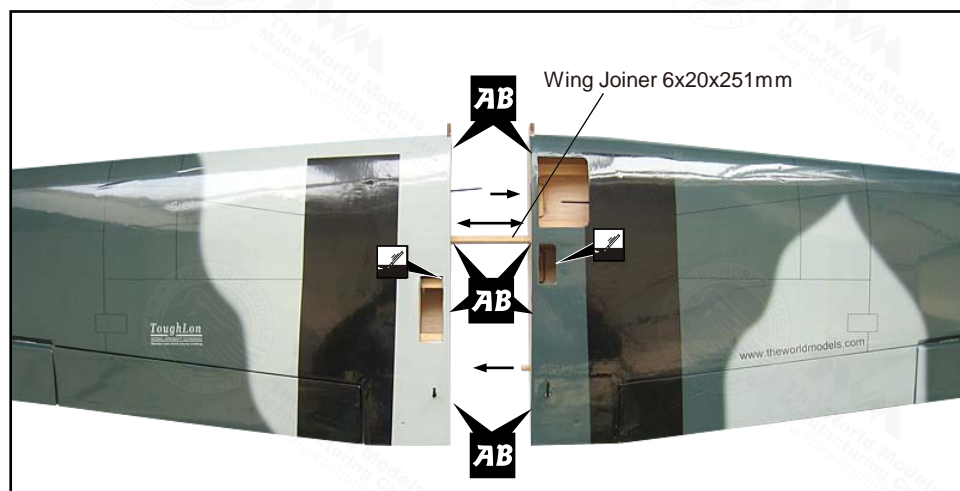
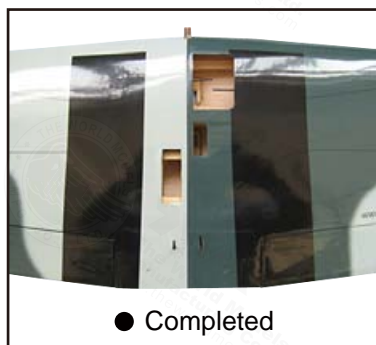
L/R

● Bottom View



3 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.



4 Aileron Servo & Drop Tank

PB2x22mm **Screw**

4

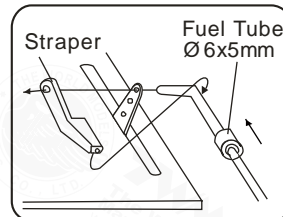
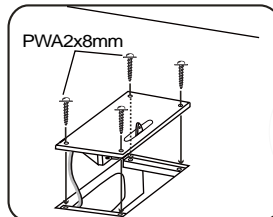
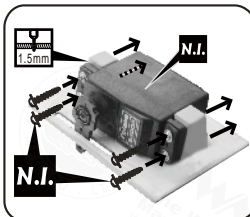
PB2x18mm **Screw**

2

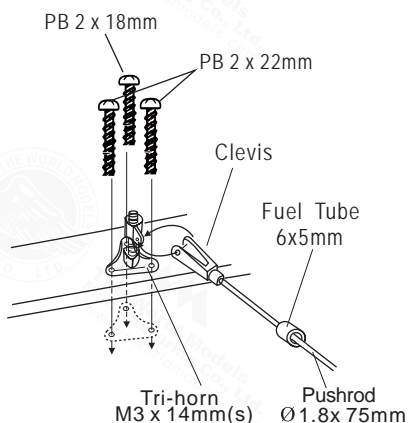
PWA2x8 mm **Screw**

8

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

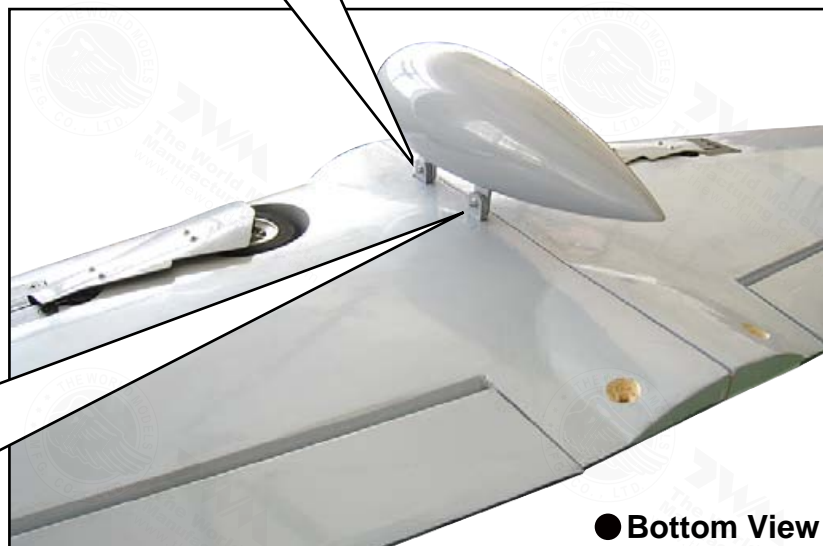
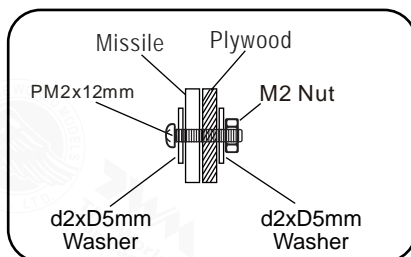
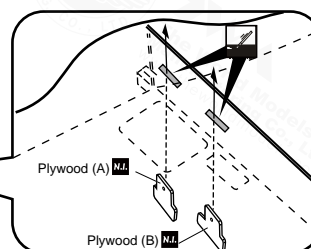
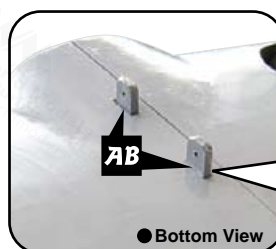
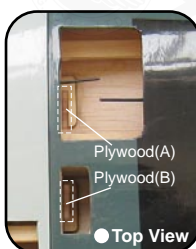


L/R



● **Bottom View**

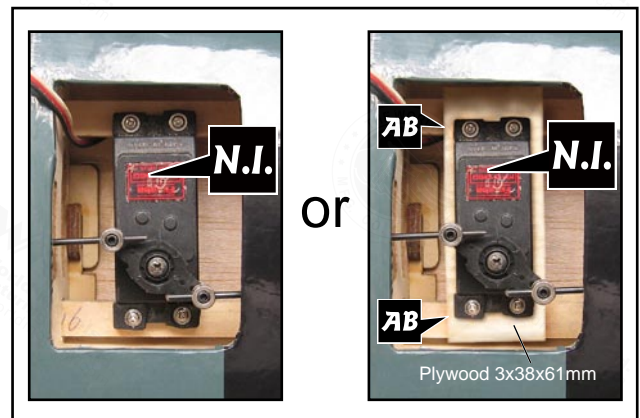
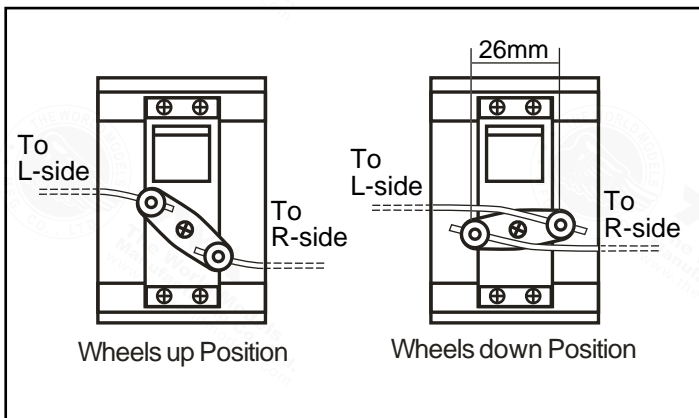
Drop Tank Setup



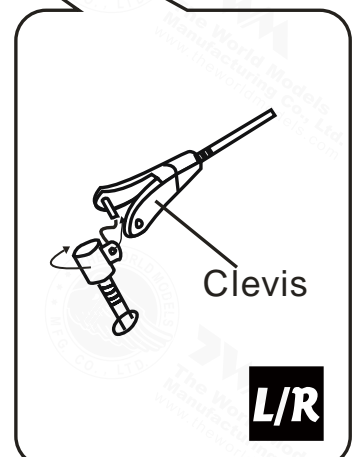
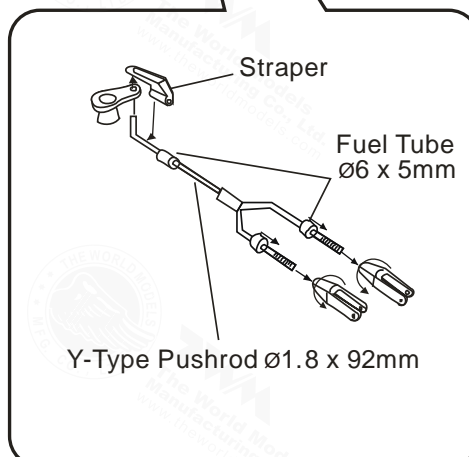
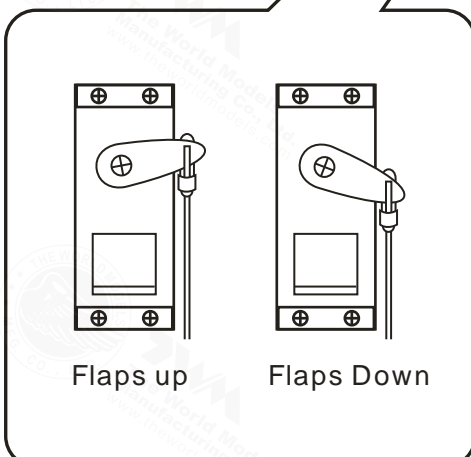
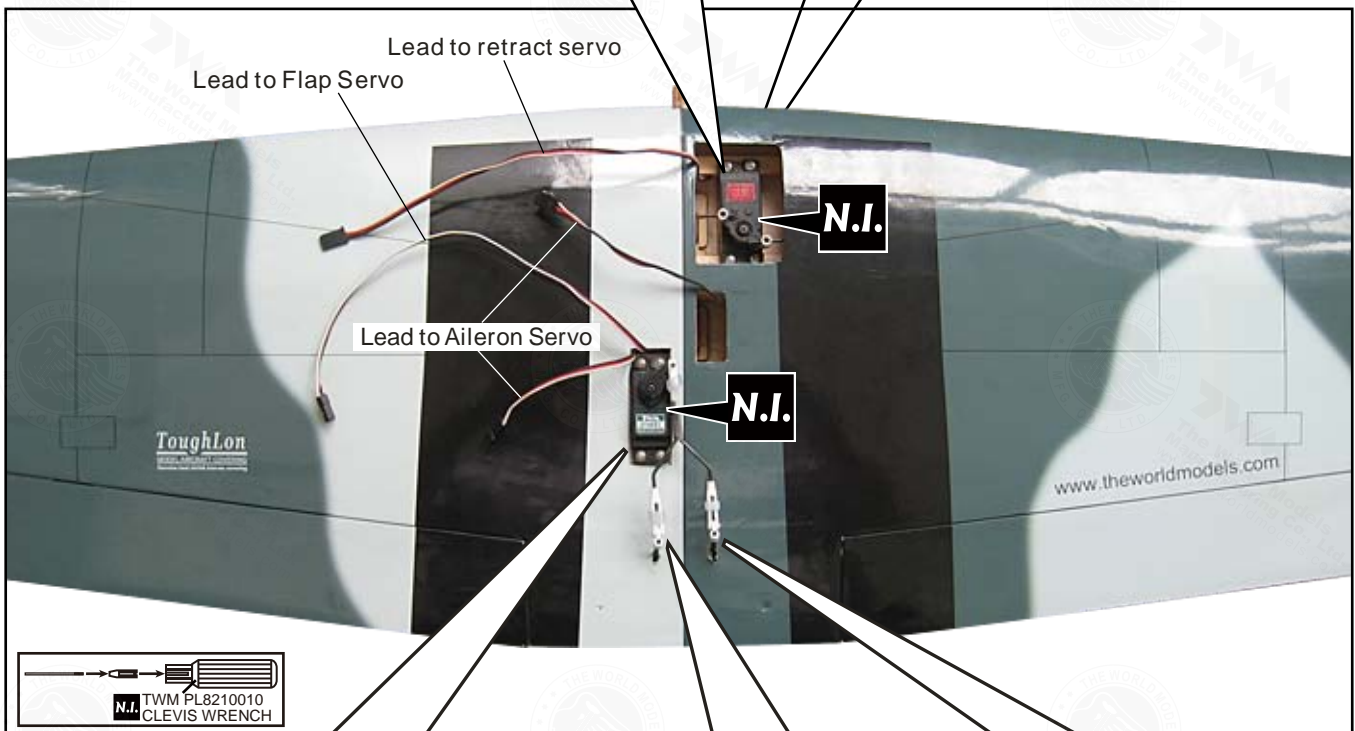
● **Bottom View**

5 Flap & Retract Servos

! Please refer to attached sheet for linkage connector installation



● Select the servo horn that will give 26mm travel when rotates through 180°.



6 Tail Landing Gear

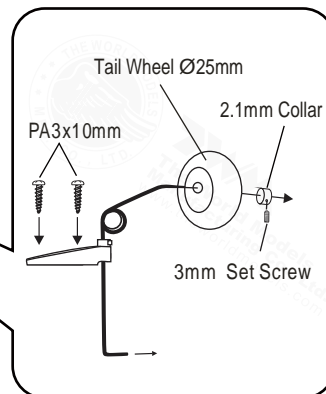
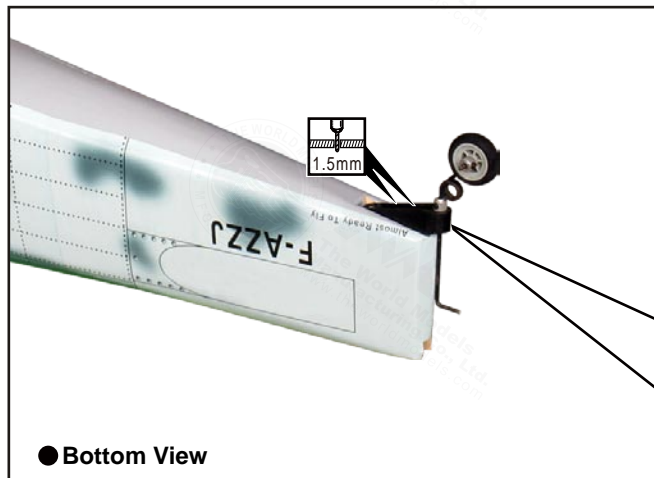
PA3x10mm Screw



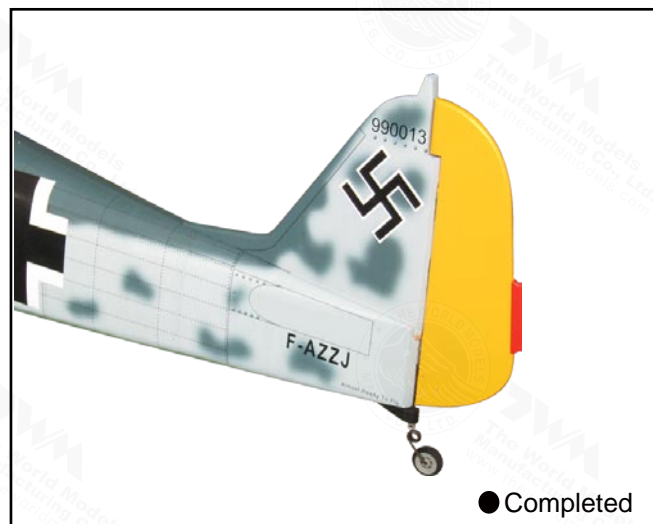
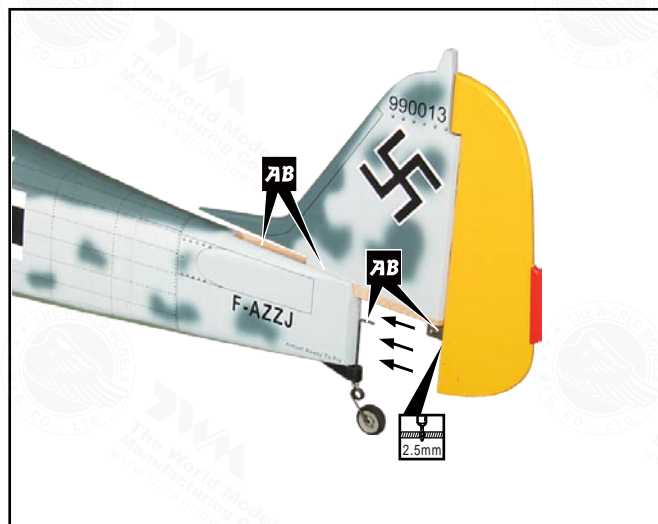
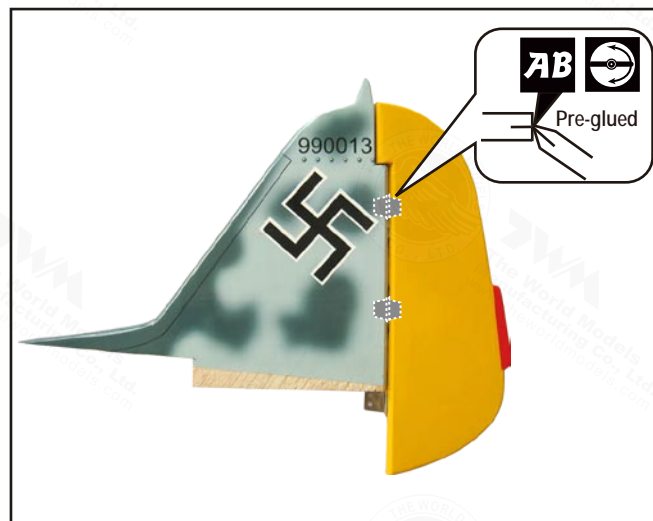
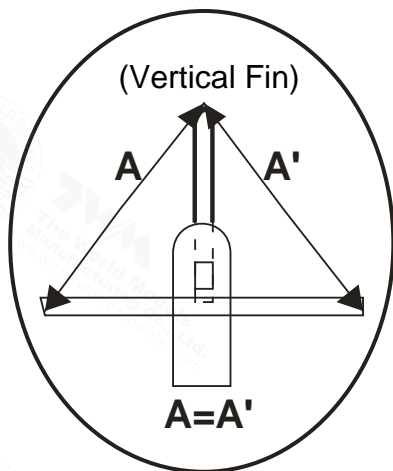
2.1mm Collar



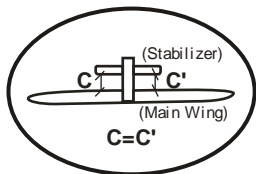
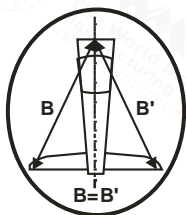
3mm Set Screw



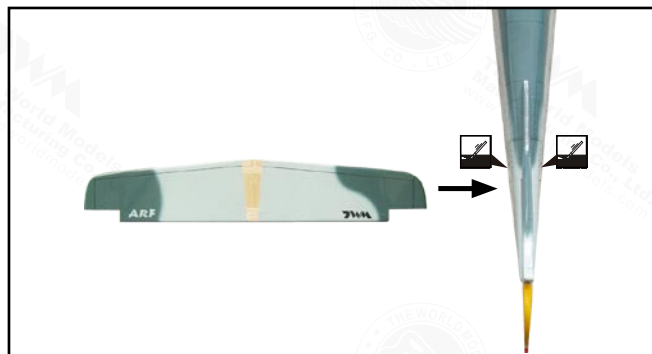
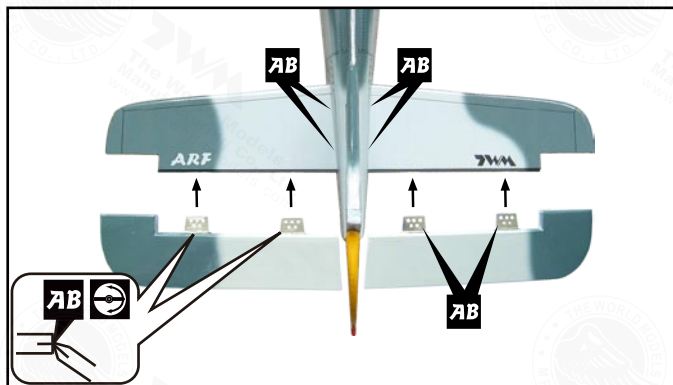
7 Vertical Fin & Rudder



8 Stabilizer & Elevator



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

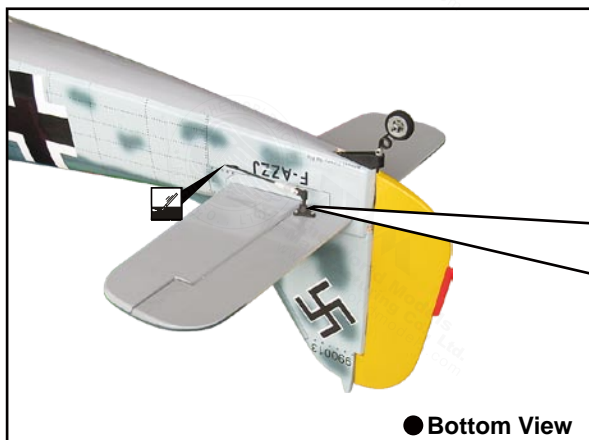


● Completed

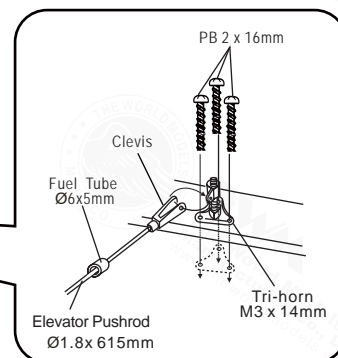
9 Elevator Pushrod

PB2x16mm 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.



● Bottom View

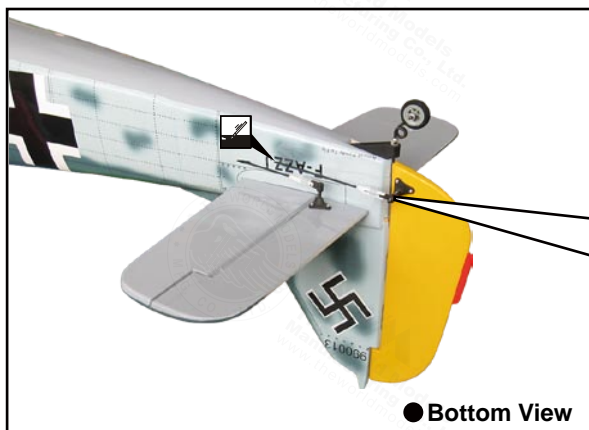


L/R

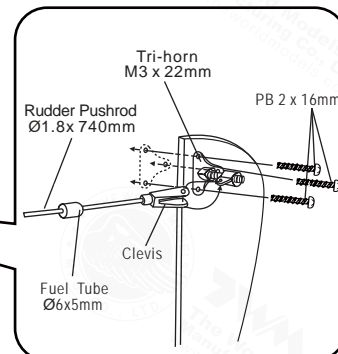
10 Rudder Pushrod

PB2x16mm Screw
3

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



● Bottom View



11 Engine Mount

M4x25mm Socket Head Screw



4

d4xD9mm

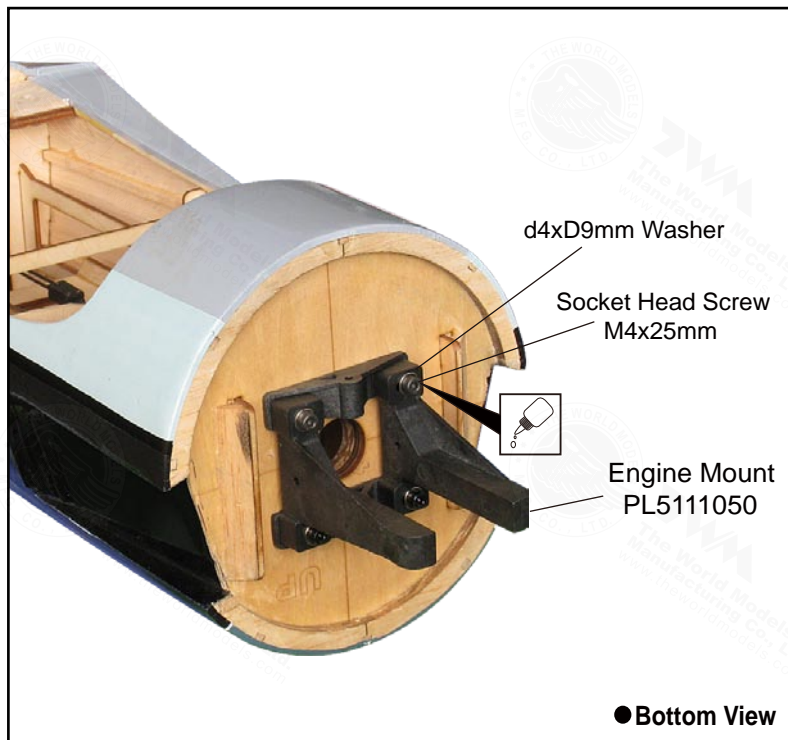
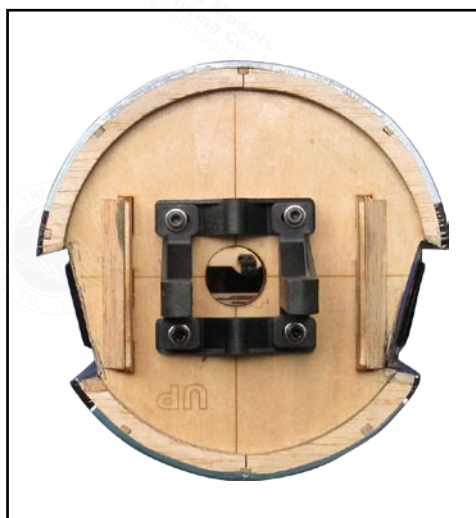


Washer

4

● Apply thread locker to screws

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



12 Fuel Tank

Double-side Tape
40x100mm

Fuel Tank
380cc

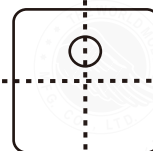
Cable Tie 1.5x5x400mm

Fuel Tank
380cc

● Bottom View

● Completed

UP



13 Engine

M3x30mm Socket Head Screw



4

d3xD7mm Washer



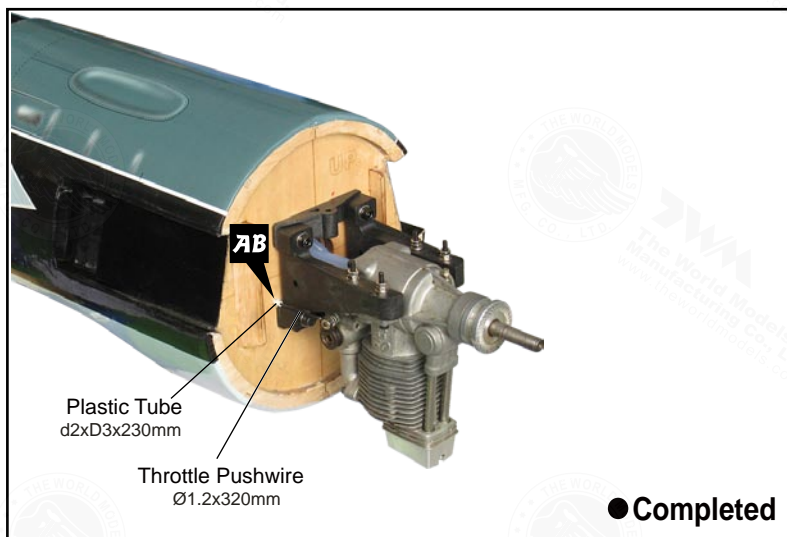
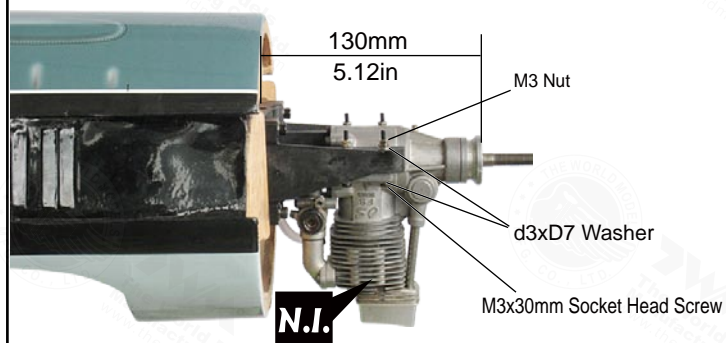
8

M3 Nut



8

● Installed Engine Position



14 Cowling

PWA2.6x12mm Screw



4

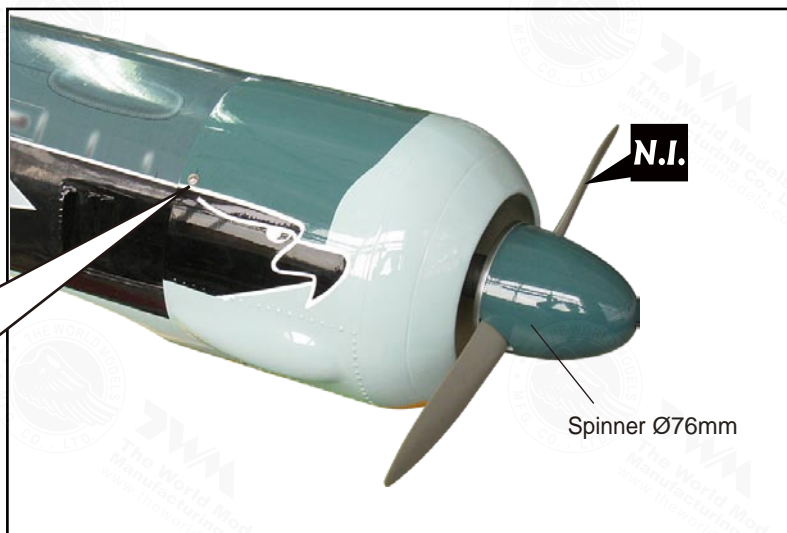
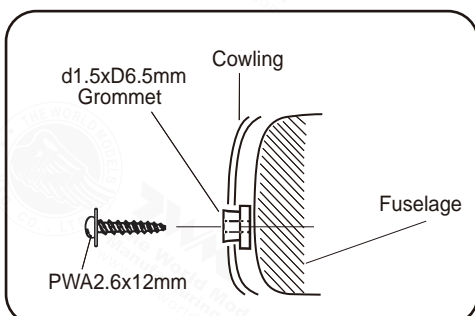
d1.5xD6.5mm Silicon Grommet



4

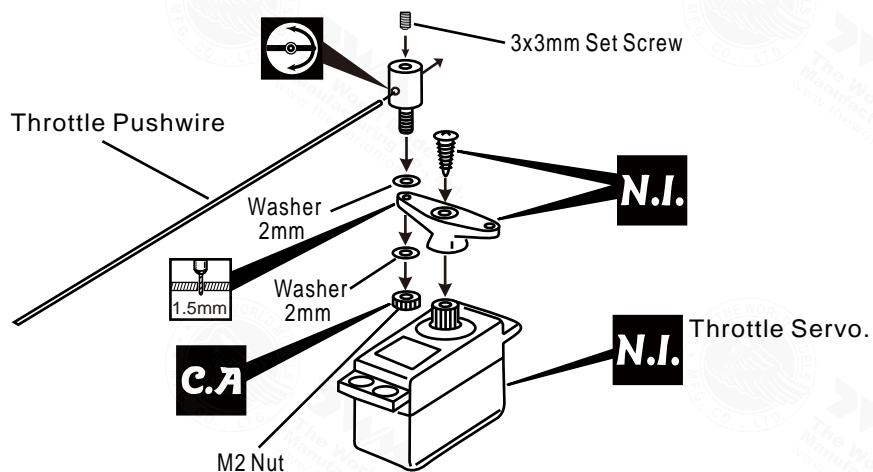
- First insert the grommet to the cowling then apply screw. Please refer to the attached sheet for usage of the transparent 3D template.

L/R



15 Servo Set

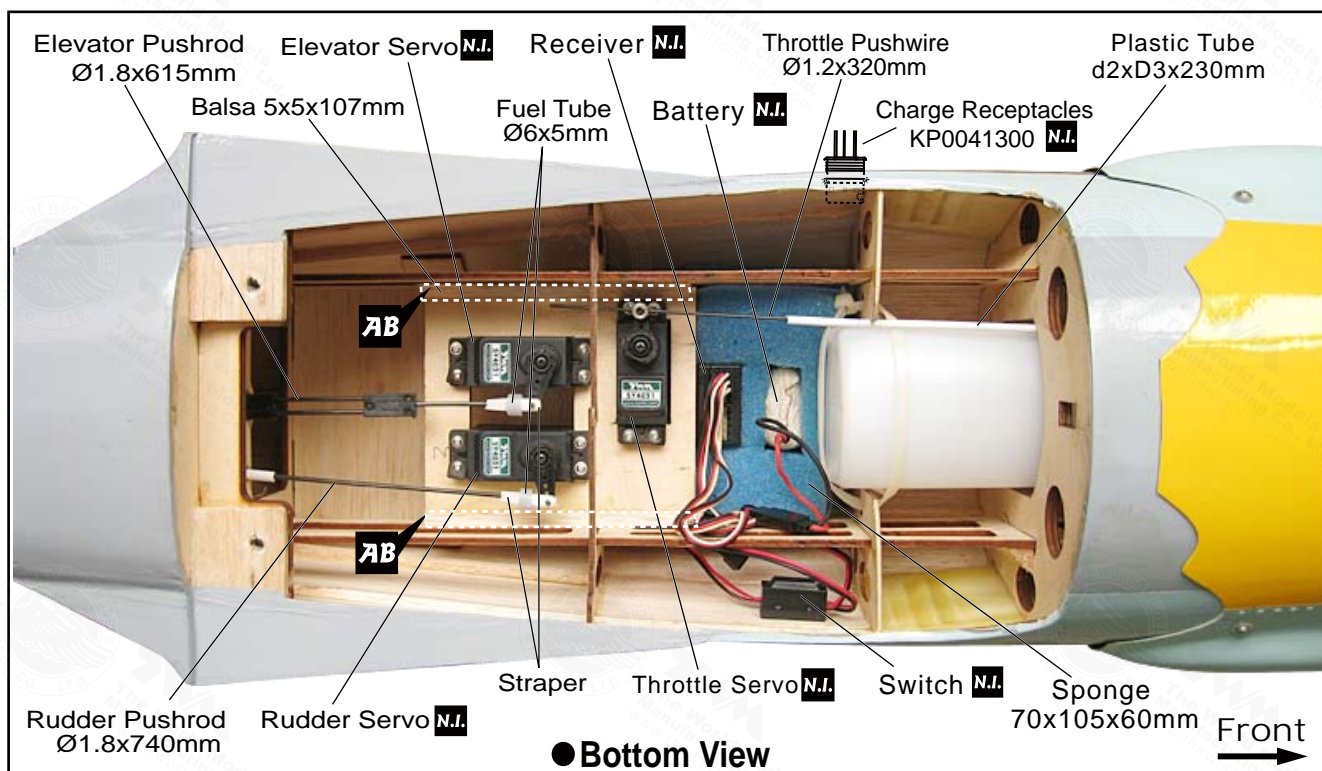
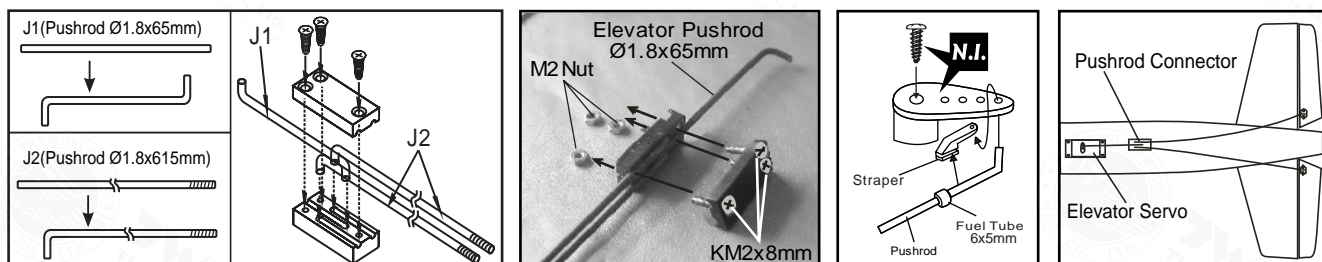
3x3mm Set Screw	1
Linkage Connector	1
M2 Nut	1
2mm Washer	2





! Please refer to the attached sheet for linkage connector installation.

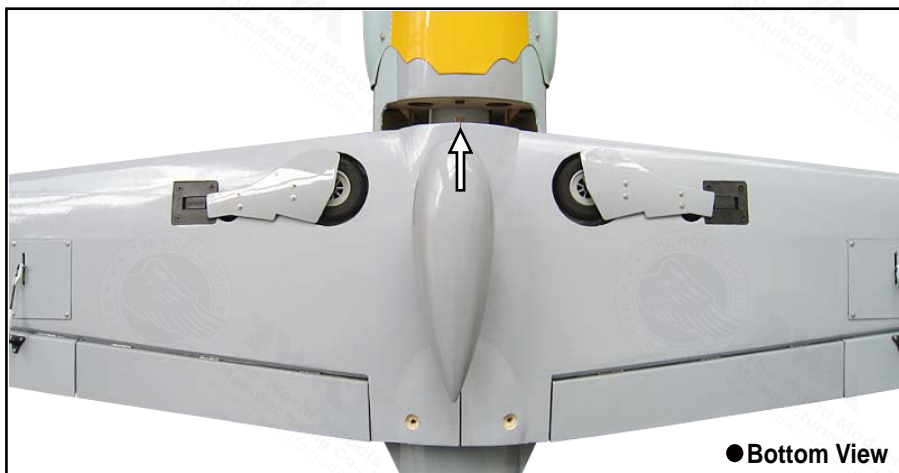
16 Radio Equipment

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



17 Main Wing

HM4x40mm	Screw
	2
d4.2xD14.5mm	Washer
	2



● Bottom View





HM4x40mm
d4.2xD14.5mm Washer

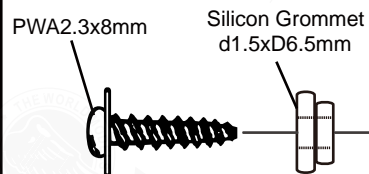
● Bottom View

L/R

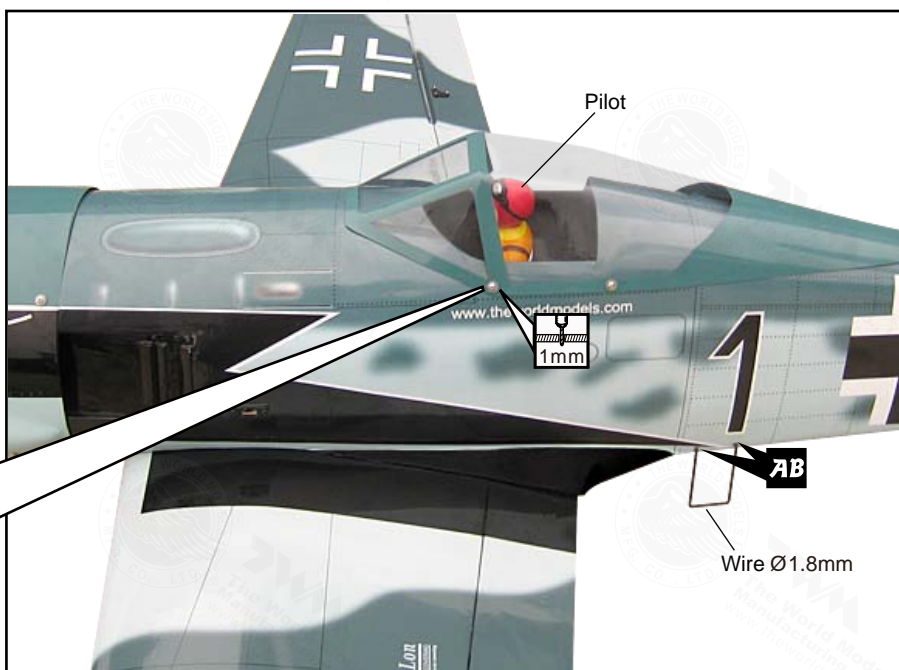
18 Canopy

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

PWA2.3x8mm	Screw
	4
d1.5xD6.5mm	Silicon Grommet
	4



L/R



Pilot

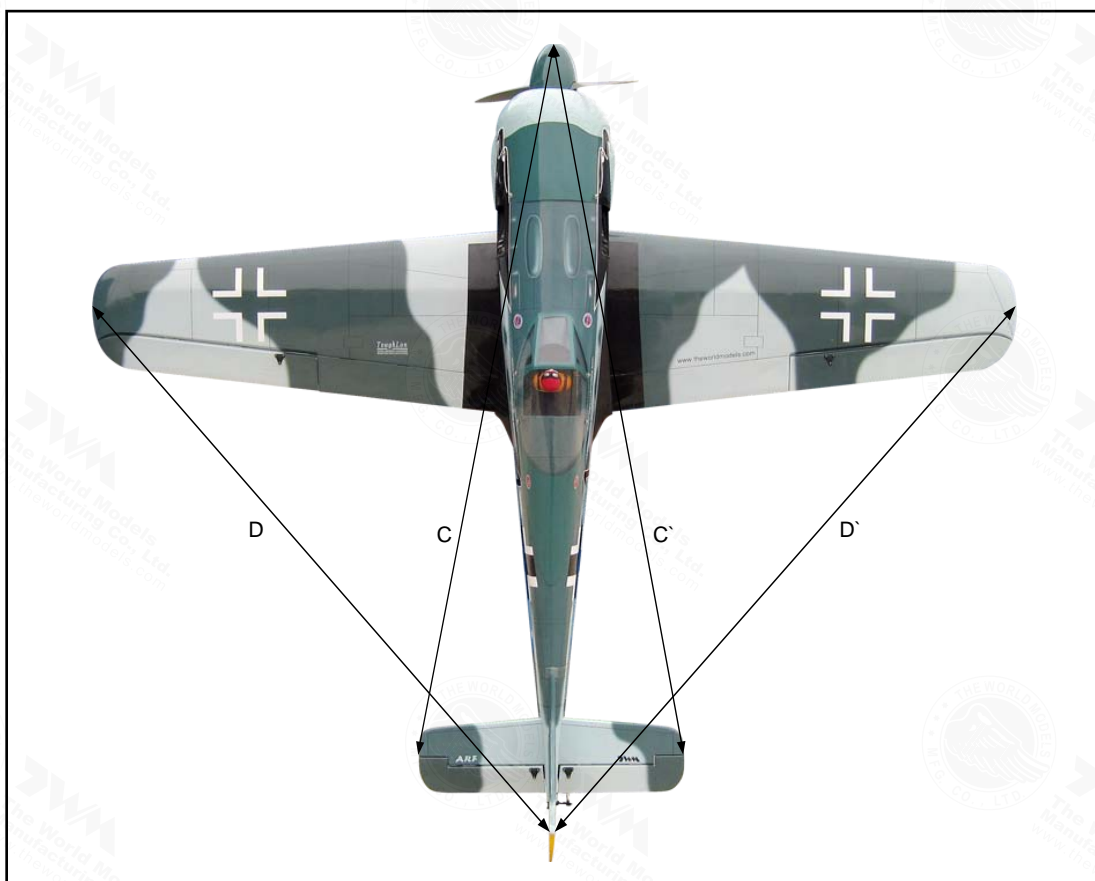
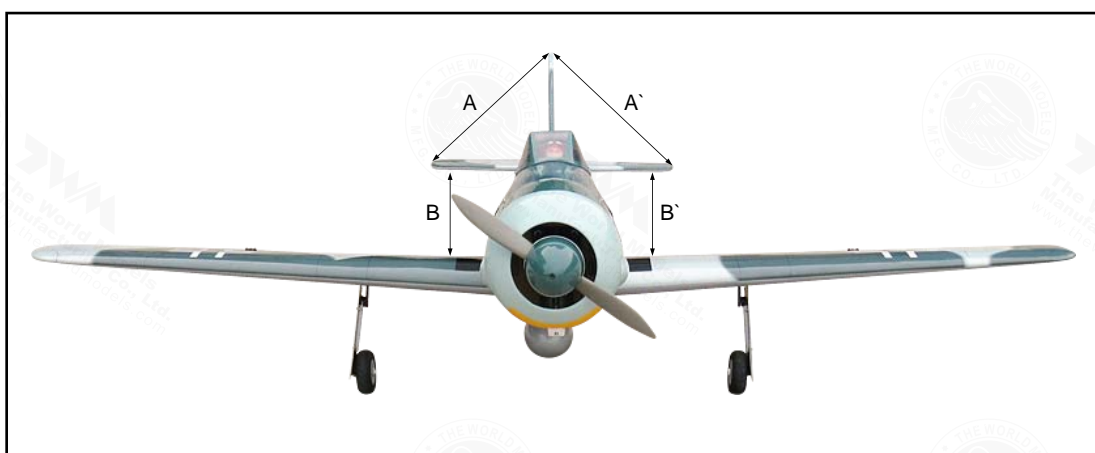
1mm

AB

Wire Ø1.8mm

19 Wing Setting

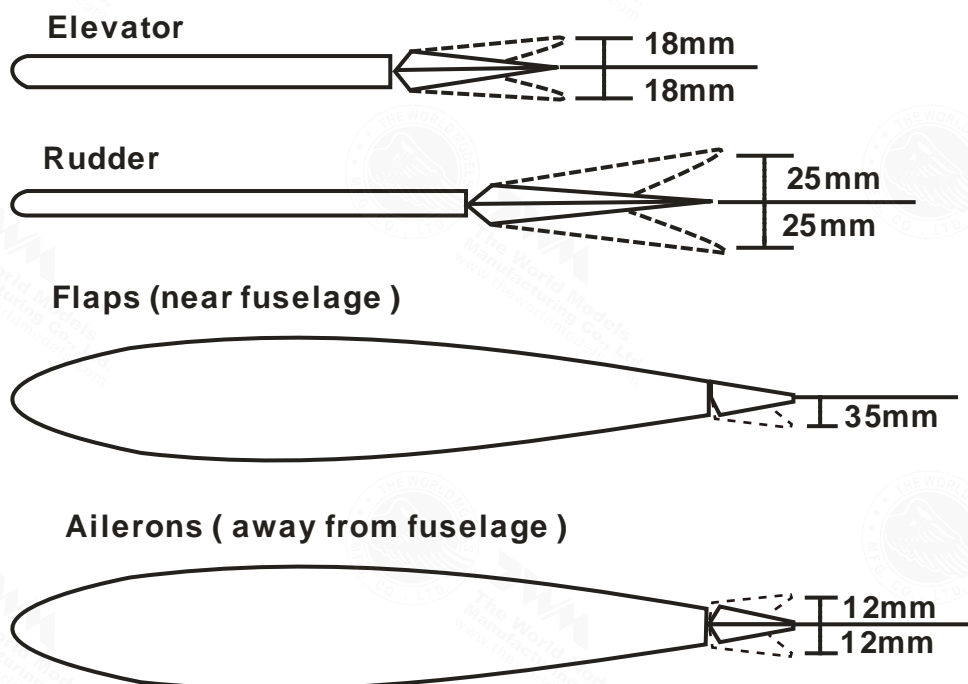
● Adjust the wing and fuselage configuration as shown in the diagrams.



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

20 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.



21 C.G.

- The ideal C.G. position is **85mm (3.35 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.



- Measure C.G. with the wheels in retracted position

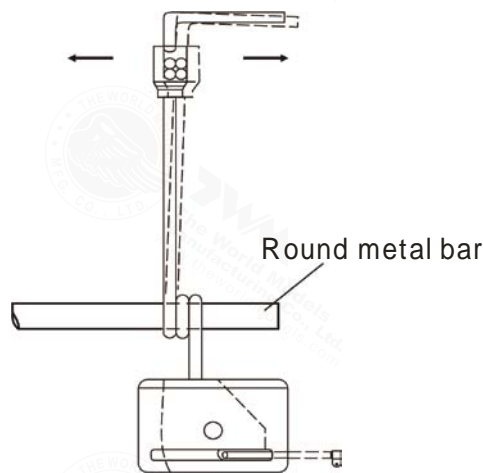
! Warning!

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.
- # **FOCKE-WULF 190A** is specially designed to be powered by 2c 0.46-0.55 or 4c 0.70-0.81 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. 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.

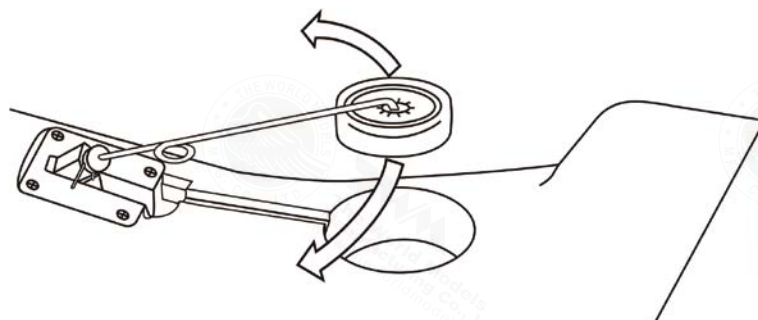
- # When Flaps are lowered, nose of model will rise. The nose-up varies with the speed at which the model is flying when you lower the flaps and the extent to which they are lowered. Check effect of flaps at higher altitude to avoid surprises during landing. You may apply down trim of the elevator to 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.

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.



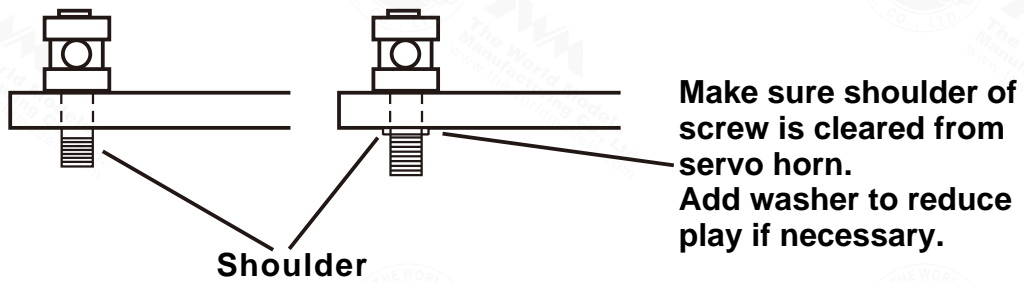
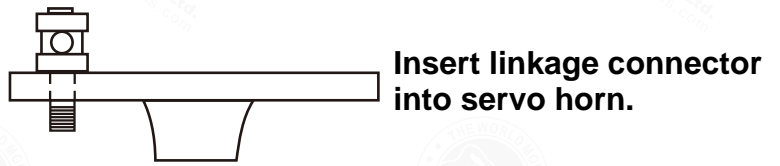
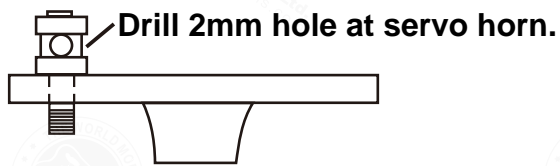
Landing Gear

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.



LINKAGE CONNECTOR

HW7111050 & HW7111060



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: _____

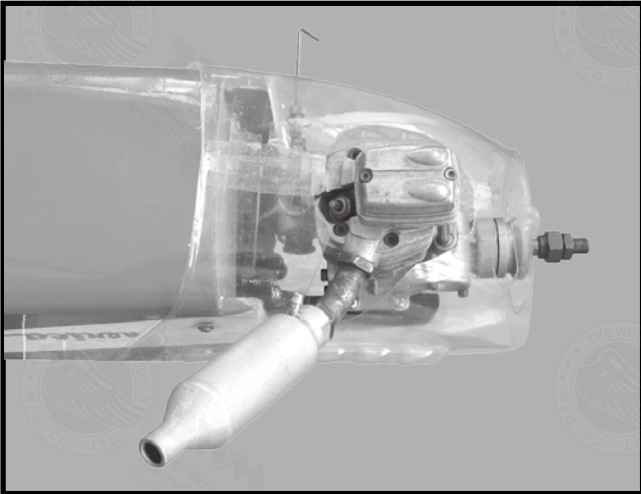
Please call AirBorne Models at 925 371 0922 for any assistance in filling this form. Thank you very much for purchasing our product.

Usage of the transparent 3D template

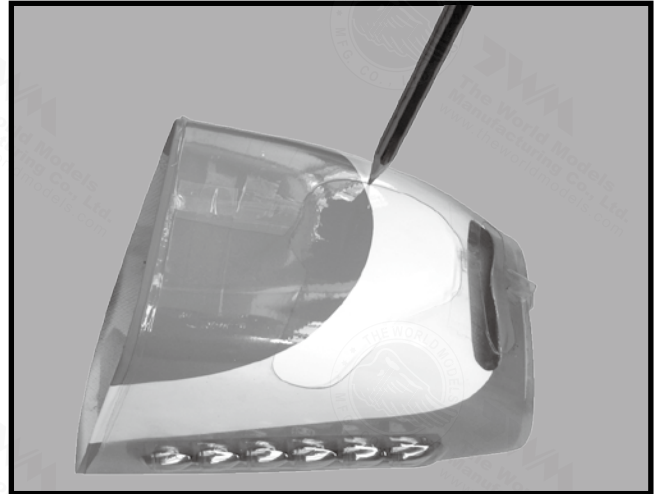


This transparent 3D template is used for position guidance of the actual cutting of the pre-painted cowling.

1



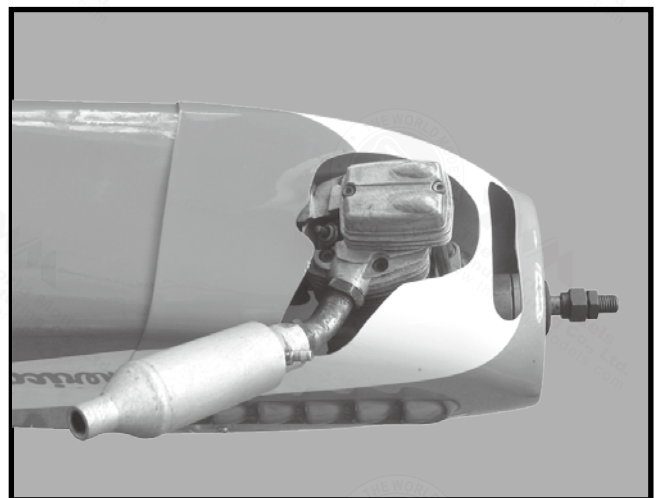
2



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.

Optional Parts

(ACCESSORIES)

180mm Extension

Code No.	Size	Package
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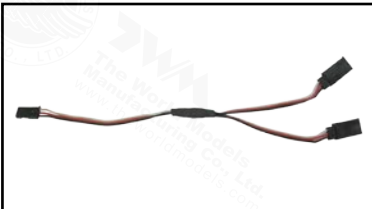
KW0011800 180mm 1 set



180mm Y-Cord

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

KW0021800 180mm 1 pc



Charge Receptacles

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

KP0041300



Fuel Filler

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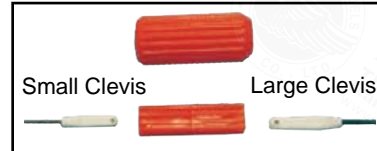
PL8110030 15 x 22 x 49mm 1 x 1 pc



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.

Field Stand

Code No.	Size	Package
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MS9111450 600 x 240 x 350mm 1 pc



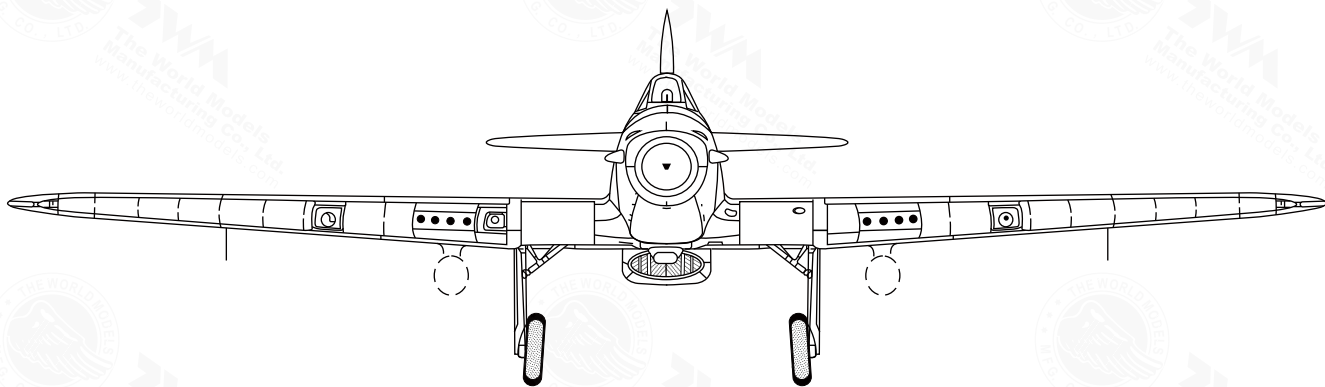
Standard Servo

Code No.	Size	Package
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SV4031 40.6 x 20 x 37mm 1 set



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



Ducted Fan

Pattern

Warbirds

Funfly

Scale

Electric

Sports

Glider

Trainer

Boat

Accessories

Covering

(Lightex / Toughlon)



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