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.
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.)
- **N.I.**: Must be purchased separately!
- **L/R**: Assemble left and right sides the same way.
- **N.S.R**: Ensure smooth non-binding movement while assembling.
- **3mm**: Drill holes with the specified diameter (here: 3mm).
- **Peel off shaded portion covering film.**
- **Cut off shaded portion.**
- **Pierce the shaded portion covering film.**
- **Pay close attention here!**
- **Warning!** Do not overlook this symbol!
## Parts List

1. MAIN WING (Lower) -- 1 pair
2. PLYWOOD 5x28x48mm (For Aileron Servo) -- 1 pc.
   RING Ø2.3mm PL4112023 -- 2 pcs
3. PUSHROD Ø1.8x70mm w/ Threads (For Aileron) -- 2 pcs
   FUEL TUBE Ø6x5mm -- 4 pcs
   STRAPER PL4112102 -- 2 pcs
   CLEVIS PL4112103 -- 2 pcs
4. MAIN WING (Upper) -- 1 set
5. FUSELAGE -- 1 pc.
6. VERTICAL FIN & RUDDER -- 1 set
7. TAIL LANDING GEAR PL7100001 -- 1 set
   COLLAR Ø2.1mm w/ set screw -- 1 set
   TALL WHEEL Ø25mm -- 1 pc.
   SCREW PA3x12mm -- 2 pcs
8. PUSHROD Ø1.8x65mm w/ Threads (For Elevator) -- 2 pcs
   SCREW PB2x12mm -- 4 pcs
   FUEL TUBE Ø6x5mm -- 1 pc.
   CLEVIS PL4112103 -- 2 pcs
   HORN PL4113101 -- 1 pc.
9. PUSHROD Ø1.8x53mm w/ Threads (For RUdder) -- 1 pc.
   SCREW PB2x12mm -- 2 pcs
   FUEL TUBE Ø6x5mm -- 1 pc.
   CLEVIS PL4112103 -- 1 pc.
   HORN PL4113101 -- 1 pc.
10. MAIN WING GEAR Ø2.5mm HW2402292 -- 1 set
    MAIN WHEEL Ø65mm -- 2 pcs
    WHEEL PANTS PC198WWPA -- 1 pair
    COLLAR 4.1mm w/ set screw -- 4 sets
    SCREW KA2.3x8mm -- 4 pcs
    SOCKET HEAD SCREW HM4x35mm -- 2 pcs
    SOCKET HEAD SCREW M3x16mm -- 3 pcs
    QUICK RELEASE NYLON RIVET d2xD8mm PL1208042 -- 4 pcs
    WASHER d3xD7mm -- 4 pcs
    WASHER d4xD9mm -- 4 pcs
    M4 NUT -- 2 pcs
    PLATE 1mm -- 1 pair
11. ENGINE MOUNT PL5111050 -- 1 set
    SOCKET HEAD SCREW M4x25mm -- 4 pcs
    WASHER d4xD9mm -- 4 pcs
12. FUEL TANK 260cc PL1111260 -- 1 set
    DOUBLE-SIDED TAPE 4x100mm -- 1 pc.
    TABLE TIE (FOR FUEL TANK) 1.5x6x400mm -- 1 pc.
13. LINKAGE CONNECTOR Ø2.1mm HW7111060 -- 1 set
14. SOCKET HEAD SCREW M3x25mm -- 4 pcs
    WASHER d3xD7mm -- 8 pcs
    M3 NUT -- 8 pcs
    THROTTLE PUSHWIRE Ø1.2x300mm -- 1 pc.
    PLASTIC TUBE d2xD3x200mm -- 1 set
15. PUSHROD CONNECTOR 4x9x20mm PL4110010 -- 1 set
    PUSHROD Ø1.8x70mm (For Elevator Servo) -- 1 pc.
    PLYWOOD 3x100x103mm (For Fuselage Servo) -- 1 pc.
    BALSA 5x5x97mm (For Fuselage Servo Stand) -- 2 pcs
    STRAPER PL4112102 -- 2 pcs
    FUEL TUBE Ø6x5mm -- 2 pcs
    SPONGE 10x80x200mm (For Radio Equipment) -- 2 pcs
16. CANOPY -- 1 set
    PILOT PC001050A/PC001050B -- 1 pc.
    DOUBLE-SIDED TAPE 8x500mm -- 1 pc.
    SCREW PWA2.3x8mm -- 4 pcs
    SILICON GROMMET d1.5xD6.5mm -- 4 pcs
17. COWLING -- 1 set
    TRANSPARENT 3D TEMPLATE -- 1 pc.
    SPINNER Ø57mm PL2111057 -- 1 pc.
    SCREW PWA2.6x12mm -- 4 pcs
    SILICON GROMMET d1.5xD6.5mm -- 4 pcs
18. SOCKET HEAD SCREW HM4x25mm -- 1 pc.
    WASHER d4xD15mm -- 1 pc.
19. SOCKET HEAD SCREW M3x30mm -- 1 pc.
    SOCKET HEAD SCREW M3x20mm -- 1 pc.
    SCREW PM3x12mm -- 8 pcs
    SCREW PM2x8mm -- 2 pcs
    SCREW PA3x12mm -- 4 pcs
    WASHER d3xD7mm -- 18 pcs
    M2 NYLON INSERT LOCK NUT -- 10 pcs
    M3 NYLON INSERT LOCK NUT -- 10 pcs
    PLYWOOD 4x143x181mm (Side Cabane) -- 2 pcs
    PLYWOOD 3x236x230mm (Wing Incidence Angle Template) -- 2 pcs
    ALUMINUM PLATE (Brace:Fuselage to Wing) -- 1 set
20. SCREW PB2x12mm -- 8 pcs
    HORN PL4113101 -- 4 sets
    CLEVIS PL4112103 -- 4 pcs
    PUSHROD Ø1.8x145mm w/ Threads (For Aileron to Aileron) -- 2 pcs
    FUEL TUBE Ø6x5mm -- 4 pcs
21. DECALS: A009SDEC -- 1 set

### COVERING:

- PURPLE COLOR SCHEME:
  - TOUGHLON STL 100 WHITE
  - TOUGHLON STL 201 BLACK
  - TOUGHLON STL 370 SILVER
- YELLOW COLOR SCHEME:
  - TOUGHLON STL 100 WHITE
  - TOUGHLON STL 370 SILVER

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**A009SPO26741109**

P.2
1 Main Wing (Lower)

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

2 Aileron Servo (Lower)

- Completed

3 Aileron Servo (Lower)

- Completed
4 Main Wing (Upper)

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

5 Stabilizer & Elevator

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

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

6 Vertical Fin & Rudder

- Apply instant type CA glue to both sides of each hinge.
7 Tail Landing Gear

PA3x12mm Screw
2
2.1mm Collar
1

PA3x12mm
2.1mm Collar
M3x3mm Set Screw

Bottom View

8 Elevator Pushrod

PB2x12mm Screw
4

Fuel Tube Ø6x5mm
Pushrod Ø1.8x465mm
Clevis
Horn

Bottom View

9 Rudder Pushrod

PB2x12mm Screw
2

Pushrod Ø1.8x535mm
Clevis
Fuel Tube Ø6x5mm
PB2x12mm
Horn

Bottom View

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

- **Fuel Tank**: 260cc UP
- **Engine Mount**: PL5111050

Apply thread locker.

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

11 Engine Mount

- **M4 25mm Socket Head Screw**: 4
- **d4xD9mm Washer**: 4

12 Fuel Tank

- **Quick Release Nylon Rivet**: d2x8mm
- **d3xD7mm Washer**: 4
- **d4xD9mm Washer**: 4
- **M4 Nut**: 2
- **4.1mm Collar**: 4
- **d3xD7mm Washer**: 4
- **M4 25mm Socket Head Screw**: 4

Completed L/R
Please refer to the attached sheet for linkage connector installation.
15. **Radio Equipment**
- Install and arrange the servo as shown in the diagram.

![Diagram of radio equipment components](image1)
- Elevator Servo
- Pushrod Connector
- BALSA 5x5x97mm
- PLYWOOD 3x100x103mm
- Charge Receptacles
- Fuel Filler PL8110030
- Fuel Fill PL8110030
- Charge Receptacle
- PWA2.6 X 12mm Screw
- KM2x8mm
- M2 Nut
- Elevator Pushrod Ø1.8x550mm
- Rudder Pushrod Ø1.8x550mm
- Throttle Pushwire Ø1.2x280mm
- Rudder Servo
- Throttle Servo
- PWA2.3x8mm Screw
- d1.5xD6.5mm Silicon Grommet
- P.8

16. **Canopy**
- First insert the grommet to the canopy then apply screw.

![Diagram of canopy components](image2)
- PWA2.3x8mm Screw
- d1.5xD6.5mm Silicon Grommet
- Apply double-sided tape
- Decals
- Pilot
- d1.5xD6.5mm Silicon Grommet
- PWA2.3x8mm

17. **Cowling & Spinner**
- Please refer to the attached sheet for usage of the transparent 3D template.

![Diagram of cowling & spinner components](image3)
- PWA2.6 X 12mm Screw
- d1.5xD6.5mm Silicon Grommet
- Spinner Ø57mm
- N.I. Fuel Filler
- PL8110030
- Silicon Grommet d1.5xD6.5mm
- PWA2.6x12mm
- Cowling
- Fuselage
- L/R

- First insert the grommet to the cowling then apply screw.
18 Main Wing (Lower)

- HM4x25mm Socket Head Screw: 1
- d4x15mm Washer: 1

Bottom View

19 Main Wing

- PM2x8mm Screw: 2
- M3x30mm Socket Head Screw: 1
- M3x20mm Socket Head Screw: 1
- PM3x12mm Screw: 8
- PA3x12mm Screw: 4
- d3xD7mm Washer: 18
- M2 Nylon Insert Lock Nut: 2
- M3 Nylon Insert Lock Nut: 10

Please install in correct direction

- Outer wing cabane should fit to the outside of outer wing cabane mounts.

With the wing incidence angle template still in place, position the side cabanes, mark and drill the side cabane mounts and fasten with PM3x12mm screw and nut.

Pierce the two pre-drill holes at upper wing center line and fasten the center cabanes with PM3x20mm & PM3x30mm screw and nut. With the lower wing fastened to the fuselage, insert the wing incidence angle templates to both sides of upper and lower wing to hold the upper wing in position. Mark and drill 2mm pilot holes at the fuselage and fasten the center cabane with PA3x12 mm screws.
20 Main Wing

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

21 Wing Setting

- Adjust the wing and fuselage configuration as shown in the diagrams.
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**: 10mm 10mm
- **Rudder**: 30mm 30mm
- **Ailerons**: 5mm 5mm

The ideal C.G. position is 81mm (3.2 in.) behind the leading edge measured at top wing center line. 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.
- **Ultimate - 40S** is specially designed to be powered by **2C 0.40-0.46 or 4C 0.48-0.56** 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.
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.

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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. 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.:** KW0011800
- **Size:** 180mm
- **Package:** 1 set

![180mm Extension Image](URL)

### 180mm Y-Cord
- **Code No.:** KW0021800
- **Size:** 180mm
- **Package:** 1 pc

![180mm Y-Cord Image](URL)

### Charge Receptacles
- **Code No.:** KP0041300

![Charge Receptacles Image](URL)

### Field Stand
- **Code No.:** MS9111430
- **Size:** 600 x 240 x 310mm
- **Package:** 1 pc

![Field Stand Image](URL)

### Fuel Filler
- **Code No.:** PL8110030
- **Size:** 15 x 22 x 49mm
- **Package:** 1 x 1 pc

![Fuel Filler Image](URL)

### Clevis Wrench
- **Code No.:** PL8210010
- **Package:** 1 set

- **Small Clevis**
- **Large Clevis**

![Clevis Wrench Image](URL)

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

![Standard Servo Image](URL)