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.

Specifications

- Wing Span: 85 in / 2160 mm
- Wing Area: 1319 sq in / 85.1 sq dm
- Flying Weight: 18.7 lb / 8500 g
- Fuselage Length: 87.5 in / 2220 mm

*Specifications are subject to change without notice.*
Read through the manual before you begin, so you will have an overall idea of what to do.

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.

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.
- **Warning!** Do not overlook this symbol!
- **N.I.** Ensure smooth non-binding movement while assembling.
- **Warning!** Pay close attention here!
- **L/R** Pierce the shaded portion covering film.
- **3mm** Drill holes with the specified diameter (here: 3mm).
- **L/R** Cut off shaded portion.
Parts List

1. MAIN WING -- 1 pair
   HEAVY DUTY CLEVIS PL4112200 -- 4 sets
   SCREW HM4x60mm -- 2 pcs
   SCREW PWA2.3x8mm -- 8 pcs
   M4 NYLON INSERT LOCK NUT -- 2 pcs
   HEAVY DUTY HORN BRACKET PL4112400 -- 2 sets
   HEAVY DUTY SERVO HORN PL4120300 -- 2 sets
   PUSHROD M3xD5x88mm w/ Threads (For Aileron) -- 2 pcs
   SWIVEL CLEVIS HOR IN FAIRING PL4610010 -- 2 sets

2. SERVO MOUNTING PANEL (For Aileron) PL5310010 -- 1 pair
   HEAVY DUTY CLEVIS PL4112200 -- 4 sets
   SCREW HM4x60mm -- 2 pcs
   SCREW PWA2.3x8mm -- 8 pcs
   M4 NYLON INSERT LOCK NUT -- 2 pcs
   HEAVY DUTY SERVO HORN PL4120300 -- 2 sets
   HEAVY DUTY HORN BRACKET PL4112400 -- 2 sets
   SWIVEL CLEVIS HOR IN FAIRING PL4610010 -- 2 sets

3. STABILIZER & ELEVATOR -- 1 set
   SCREW HM4x60mm -- 2 pcs
   M4 NYLON INSERT LOCK NUT -- 2 pcs
   SWIVEL CLEVIS HOR IN FAIRING PL4610010 -- 2 sets
   HEAVY DUTY CLEVIS PL4112200 -- 4 sets
   HEAVY DUTY SERVO HORN PL4120300 -- 2 sets
   HEAVY DUTY HORN BRACKET PL4112400 -- 2 sets
   PUSHROD M3xD5x70mm w/ Threads (For Elevator) -- 2 pcs
   SWIVEL CLEVIS HORN FAIRING PL4610010 -- 2 sets

4. FUSELAGE -- 1 pc.
   STABILIZER TUBE Ø16x371.3mm -- 1 pc.
   SCREW PA3x16mm -- 2 pcs
   WASHER d3xD7mm -- 2 pcs
   STABILIZER WIRE Ø4x194mm -- 1 pc.

5. VERTICAL FIN & RUDDER -- 1 set
   M4 NYLON INSERT LOCK NUT -- 2 pcs
   SWIVEL CLEVIS HORN FAIRING PL4610020 -- 1 set
   HEAVY DUTY CLEVIS PL4112200 -- 4 sets
   HEAVY DUTY SERVO HORN PL4120300 -- 2 sets
   HEAVY DUTY HORN BRACKET PL4112400 -- 2 sets
   COPPER TUBE d2.5x3.2x8mm HW4201302 -- 4 pcs
   WIRE Ø1x1350mm HW4201311 -- 2 pcs

6. TAIL GEAR WITH SPRING SHOCK ABSORBER PL3410020 -- 1 set
   SOCKET HEAD SCREW M4x100mm -- 1 pc.
   SOCKET HEAD SCREW M3x12mm -- 4 pcs
   WASHER d4.5xD9mm -- 20 pcs
   WASHER d4.2xD14.5mm -- 12 pcs
   M4 NUT -- 6 pcs
   M4 NYLON INSERT LOCK NUT -- 10 pcs
   CARBON FIBRE TUBE Ø6x26mm -- 6 pcs

7. THREADED ROD M4x100mm -- 1 pc.
   M4 NYLON INSERT LOCK NUT -- 2 pcs
   SWIVEL CLEVIS HOR IN FAIRING PL4610020 -- 1 set
   HEAVY DUTY CLEVIS PL4112200 -- 4 sets
   HEAVY DUTY SERVO HORN PL4120300 -- 2 sets
   HEAVY DUTY HORN BRACKET PL4112400 -- 2 sets
   COPPER TUBE d2.5x3.2x8mm HW4201324 -- 4 pcs
   WIRE Ø1x1350mm HW4201311 -- 2 pcs

8. MAIN LANDING GEAR -- 1 pair
   SOCKET HEAD SCREW M4x20mm -- 6 pcs
   SOCKET HEAD SCREW M3x12mm -- 4 pcs
   WASHER d4.5xD9mm -- 6 pcs
   WASHER d3xD7mm -- 4 pcs
   WHEEL PANT -- 1 pair
   WHEEL AXLES Ø1x82mm HW3102210 -- 2 pcs
   WHEEL Ø100mm PL3115100 -- 2 pcs
   WOOD Ø3.6x30x59mm -- 2 pcs

9. FUEL TANK 650cc PL1111650G -- 1 set
   CABLE TIE 1.5x8x500mm -- 2 pcs

10. BLIND NUT M5 -- 4 pcs
    SOCKET HEAD SCREW M5x50mm -- 4 pcs
    WASHER d5xD12mm -- 4 pcs
    THROTTLE PUSHROD Ø1.8x330mm -- 1 pc.
    PLASTIC TUBE d2.5xD4x220mm -- 1 pc.

11. ALUMINUM PLATE 1.5x12x48mm -- 2 pcs
    ALUMINUM PLATE 1.5x12x86mm -- 2 pcs
    SILICON ANTI-VIBRATION PAD 8x10x25mm -- 2 sets
    SILICON ANTI-VIBRATION PAD 8x10x40mm -- 2 sets
    SOCKET HEAD SCREW M4x18mm -- 4 pcs
    SOCKET HEAD SCREW M4x50mm -- 6 pcs
    WASHER d4.5xD9mm -- 20 pcs
    WASHER d4.2xD14.5mm -- 12 pcs
    M4 NUT -- 6 pcs
    M4 NYLON INSERT LOCK NUT -- 10 pcs
    CARBON FIBRE TUBE Ø6x26mm -- 6 pcs

12. COWLING -- 1 pc.
    TRANSPARENT 3D TEMPLATE -- 1 pc.
    SCREW PA3x12mm -- 4 pcs
    WASHER d3xD7mm -- 4 pcs
    SILICON GROMMET d2.5xD8.5mm -- 4 pcs

13. UNDER COWLING -- 1 pc.
    TRANSPARENT 3D TEMPLATE -- 1 pc.
    SCREW KA2.3x8mm -- 4 pcs
    SCREW PA3x10mm -- 4 pcs
    WASHER d3xD7mm -- 4 pcs
    QUICK RELEASE NYLON RIVET PL1208042 -- 4 pcs
    SPINNER Ø102mm SP91102010 -- 1 set

14. LINKAGE CONNECTOR Ø2.1mm w/ set screw -- 1 set

15. SPONGE 10x80x200mm -- 2 pcs
    WING INCIDENCE ANGLE ADJUSTER PL7211020 -- 4 sets
    SCREW PWA2.6x12mm -- 16 pcs

16. WING TUBE Ø25.4x777mm -- 1 pc.
    SELF-TIGHTENING LATCHING PIN PL9120020 -- 2 pcs
    WIRE Ø0.8mm -- 1 pair
    M3x8mm SET SCREW -- 2 pcs

17. COCKPIT -- 1 pc.
    CANOPY -- 1 pc.
    SOCKET HEAD SCREW M3x22mm -- 2 pcs
    WASHER d3xD7mm -- 2 pcs

18. DECALS: A331DEC -- 1 set

COVERING:
TOUGHLON STL 100 WHITE
LIGHTEX SGX 370 SIER
LIGHTEX SGX 201 BLACK
LIGHTEX SGX 331 CUB YELLOW
LIGHTEX SGX 311 FERRARI RED
LIGHTEX SGX 250 BLUE
LIGHTEX SGX 350 CORSAIR
TOUGHLON STL 490002
STRIPE FER.RED / WHITE (6cm)
**3 Elevator Servos**

<table>
<thead>
<tr>
<th>Part Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>HM4x60mm Screw</td>
<td>2</td>
</tr>
<tr>
<td>M4 Nylon Insert Lock Nut</td>
<td>2</td>
</tr>
</tbody>
</table>

**Bottom View**

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

**4 Stabilizer & Elevator**

<table>
<thead>
<tr>
<th>Part Description</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA3x16mm Screw</td>
<td>2</td>
</tr>
<tr>
<td>d3x07mm Washer</td>
<td>2</td>
</tr>
</tbody>
</table>

**Bottom View**

**Completed**
5 Vertical Fin & Rudder

- Remove coverings for all surfaces in contact before applying A/B epoxy glue.

L/R

B = B'

6 Tail Landing Gear

<table>
<thead>
<tr>
<th>Screw</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA3 x 14mm</td>
<td>3</td>
</tr>
<tr>
<td>PWA2 x 12mm</td>
<td>3</td>
</tr>
</tbody>
</table>

● Bottom View

● Completed

B = B'
7 Rudder

- M4x100mm Threaded Rod
- M4 Nylon Insert Lock Nut

Press down the center 1/3 portion

Heavy Duty Horn Bracket
M2 Nylon Insert Lock Nut
M2x10mm Eye Screw M3x22mm
Copper Tube
PA1.7 x 8mm

8 Main Landing Gear

- Ø6x62mm Axle Shaft
- M4x20mm Socket Head Screw
- M3x12mm Socket Head Screw
- M8 Nylon Insert Lock Nut
- d4x9mm Washer
- d3x7mm Washer
- 5.1mm Wheel Collar

Nylon Insert Lock Nut M6
Aluminum Plate Ø5x62mm Axle Shaft
Set Screw 3mm
Wheel Collar 5.1mm
Collar 5.1mm
Wheel Ø100mm

L/R

Bottom View

Completed
9 Fuel Tank

- Cable Tie 1.5x8x500mm
- Fuel Tank 650cc

10 Engine

- M5x50 SOCKET HEAD SCREW 4
- d5xD12mm Washer 4
- M5 Blind Nut 4

- M5 Blind Nut
- Washer d5xD12mm
- M5x50 mm
- Throttle Pushrod Ø1.8x330mm

- Plastic Tube d2.5xD4x220mm

○ Install Engine position

- 172mm 6.77 in.
**11 Muffler**

- **M4x18mm Socket Head Screw**: 4
- **M4x50mm Socket Head Screw**: 6
- **d4.5xD9mm Washer**: 12
- **d4.2xD14.5mm Washer**: 10
- **M4 Nut**: 6
- **M4 Nylon Insert Lock Nut**: 10

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

**12 Cowling**

- **PA3x12mm Screw**: 4
- **d2.5x8.5mm Silicon Grommet**: 4
- **d3xD7mm Washer**: 4

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

- Please refer to the attached sheet for usage of the transparent 3D template.

<table>
<thead>
<tr>
<th>Component</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA3x10mm Screw</td>
<td>4</td>
</tr>
<tr>
<td>KA2.3x8mm Screw</td>
<td>4</td>
</tr>
<tr>
<td>d2.5x8.5mm Silicon Grommet</td>
<td>4</td>
</tr>
<tr>
<td>d3x07mm Washer</td>
<td>4</td>
</tr>
<tr>
<td>Quick Release Nylon Rivet</td>
<td>4</td>
</tr>
</tbody>
</table>

14 Servo Set

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

15 Radio Equipment

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

- Please refer to the attached sheet for linkage connector installation.
16 Main Wing

- **Wing Tube** Ø25.4x777mm
- **Lead to Aileron Servo**

Set Screw

- M3 x 8mm
- 2

Set Screw

- 3mm

Wire Ø0.8mm

Set Screw

- 3mm

Self Tightening Wing Latch

Set Screw

- M3 x 8mm

17 Cockpit & Canopy

- **M3x22 SOCKET HEAD SCREW**
- **2**
- **d5xD7mm Washer**
- **2**

Completed
18 Wing Setting

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

\[ A = A' \quad B = B' \quad C = C' \]

\[ \text{TO ADJUST ANGLE OF INCIDENCE} \]
19 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.

Rudder

Elevator

Aileron

20 C.G.

The ideal C.G. position is 177.8mm (7.0 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.

If you are converting this model to electric, please move the C.G. forward 5% of current C.G. distance from leading edge to compensate for weight of fuel.

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.

# is specially designed to be powered by 50c.c. gasoline engine, using a more powerful engine does not mean better performance. In fact, over powered engine may cause structural 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.
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. Simply cut the transparent 3D template to fit your engine and exhaust pipe.
2. Then slide onto the actual cowling.
3. Use as template to mark the openings required for final cutting.
Ducted Fan

Warbirds

Scale

Sports

Glider

Trainer

Boat

Accessories

Covering

(Lightex/Toughlon)

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