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

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Wing Span</td>
<td>50 in / 1270 mm</td>
</tr>
<tr>
<td>Wing Area</td>
<td>428 sq in / 27.6 sq dm</td>
</tr>
<tr>
<td>Flying Weight</td>
<td>3.5 lb / 1600 g</td>
</tr>
<tr>
<td>Fuselage Length</td>
<td>42 in / 1065 mm</td>
</tr>
</tbody>
</table>

*Specifications are subject to change without notice.*

The World Models Manufacturing Co., Ltd.
www.theworldmodels.com

ZERO FIGHTER EP(40) (E310)
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.
- **CA** Apply instant glue (C.A.glue, super glue.)
- **N.I.** Must be purchased separately!
- **L/R** Assemble left and right sides the same way.
- **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** -- 1 pair

2. **RETRACTABLE LANDING GEAR** -- 1 pair
   - **MAIN LANDING GEAR COVERS** -- 1 pair
   - **PVC PLATE 0.5mm** -- 2 pcs

3. **PUSHROD Ø1.4x96mm w/ Threads (For Aileron)** -- 2 pcs
   - **SCREW PB2x14mm** -- 4 pcs
   - **SCREW PA1.7x8mm** -- 8 pcs
   - **HORN 15x15x19mm PL4113102** -- 2 sets
   - **STRAPER PL4112106** -- 2 pcs
   - **CLEVIS PL4112105** -- 2 pcs
   - **FUEL TUBE d2xD4x44mm** -- 4 pcs
   - **SERVO MOUNTING PANEL PL5310030** -- 1 pair

4. **WING JOINER 6x16x160mm** -- 1 pc.

5. **LINKAGE CONNECTOR Ø2.1mm HW7111050** -- 2 sets

6. **PLYWOOD 2x5x47mm** -- 2 pcs

7. **STABILIZER & ELEVATOR** -- 1 set
   - **FUSELAGE** -- 1 pc.

8. **VERTICAL FIN & RUDDER** -- 1 set
   - **TAIL LANDING GEAR PL3410031** -- 1 set
   - **COLLAR Ø2.1mm w/ set screw** -- 1 set
   - **TAIL WHEEL Ø23mm** -- 1 pc.
   - **SCREW PA2.6x12mm** -- 2 pcs

9. **PUSHROD Ø1.4x557mm w/ Threads (For Rudder)** -- 1 pc.
   - **SCREW PB2x10mm** -- 2 pcs
   - **HORN PL4113102** -- 1 set
   - **CLEVIS PL4112105** -- 1 pc.
   - **FUEL TUBE d2xD4x44mm** -- 1 pc.

10. **PUSHROD Ø1.4x475mm w/ Threads (For Elevator)** -- 2 pcs
    - **SCREW PB2x10mm** -- 4 pcs
    - **HORN PL4113102** -- 2 sets
    - **CLEVIS PL4112105** -- 2 pcs
    - **FUEL TUBE d2xD4x44mm** -- 2 pcs

11. **SOCKET HEAD SCREW M3x12mm** -- 4 pcs
    - **WASHER d3xD7mm** -- 4 pcs
    - **COWLING** -- 1 pc.
    - **SCREW PWA2.3x8mm** -- 4 pcs
    - **SPINNER Ø62mm PL2111062** -- 1 set
    - **SCREW PA3x12mm** -- 2 pcs
    - **DOUBLE-SIDE TAPE 30x35mm** -- 1 pc.

12. **BATTERY TIE 230mm** -- 2 pcs
    - **SPONGE 10x50x150mm** -- 1 pc.

13. **SPONGE 10x50x150mm** -- 1 pc.
    - **PUSHROD CONNECTOR PL4410020** -- 1 set
    - **PUSHROD Ø1.4x55mm (F for Elevator)** -- 1 pc.
    - **STRAPER PL4112106** -- 2 pcs
    - **FUEL TUBE d2xD4x44mm** -- 2 pcs
    - **PLYWOOD 4x5x47mm** -- 4 pcs

14. **SCREW PM2.5x25mm** -- 2 pcs
    - **WASHER d2.5xD8mm** -- 2 pcs
    - **PLASTIC PLATE 1x16x52mm** -- 1 pc.

15. **CANOPY** -- 1 pc.
    - **SCREW PWA2x8mm** -- 4 pcs
    - **PILOT PC001050B** -- 1 pc.
    - **ANTENNA** -- 1 pc.
    - **LAZYBACK** -- 1 pc.

16. **DECALS: E310DEC** -- 1 set

**COVERING:**
- TOUGHLON STL E310 FUS
- TOUGHLON STL E310 WIG
- LIGHTEX SGX 203 LIGHT GRAY
- LIGHTEX SGX 331 CUB YELLOW
1. **Main Wing**

- **Aileron Servo Lead**
  - Apply instant type CA glue to both sides of each hinge.

2. **Retractable Landing Gear**

3. **Aileron Servos**

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

  - **PB2x14mm Screw**
  - 4
  - **PA1.7x8mm Screw**
  - 8

---

**Fuel Tube**

- d2xD4x4mm

**Clevis**

- Pushrod Ø1.4x6mm

**Horn**

---

**Straper**

---

**CA**

---

**Bottom View**
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.

Select the servo horn that will give 17mm travel when rotates through 90°.

Please refer to attached sheet for linkage connector installation.
7 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.

8 Vertical Fin, Rudder & Tail Landing Gear

- Remove coverings for all surfaces in contact before applying A/B epoxy glue.
- Apply instant type CA glue to both sides of each hinge.
**9 Rudder Pushrod**

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

- **PB2x10mm Screw**
  - 2

**10 Elevator Pushrod**

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

- **PB2x10mm Screw**
  - 4
11 Outrunner Motor / Cowling

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

- Don't over-tighten the M3 screws, too much stress on the screws could split the firewall.

Optional Parts:
- Outrunner Motor 37/48 Deluxe KM0374811
- Propeller Adaptor HW2340102
- 11x8E Propeller PL6211108

- Completed
12 Battery Cover

Sponge

Battery Tie

Battery

Completed

13 Radio Equipment

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

Elevator Pushrod Ø1.4x475mm

Fuel Tube d2xD4x4mm

Straper

Elevator Servo

Charge Receptacles KP0041300

Receiver

Front View

Completed

Bottom View
**14 Main Wing**

- PM2.5x25mm Screw 2
- d2.5xD8mm Washer 2

First insert the grommet to the canopy then apply screw.

**15 Canopy**

- PWA2.3x8mm Screw 4

First insert the grommet to the canopy then apply screw.
Wing Setting

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

A
A'

A
B
C
C'
B'

A = A'
B = B'
C = C'
17 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
  - 10mm
  - 10mm

- Rudder
  - 15mm
  - 15mm

- Ailerons
  - 6mm
  - 6mm

18 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.

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

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

**Drill 2mm hole at servo horn.**

**Insert linkage connector into servo horn.**

**Make sure shoulder of screw is cleared from servo horn. Add washer to reduce play if necessary.**

**Shoulder**

**Tighten up the round nut against the shoulder. Apply CA or permanent thread locker.**

**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.
Optional Parts

3 - Pin EZ Connector

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Size</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>KP0011310</td>
<td>40A Max. Current</td>
<td>1 set</td>
</tr>
</tbody>
</table>

-ideal for electric models

2 - Pin EZ Connector

<table>
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<th>Size</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>KP0011210</td>
<td>40A Max. Current</td>
<td>1 set</td>
</tr>
</tbody>
</table>

-ideal for electric models

Propeller Adaptor Wrench

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Size</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>HW311700</td>
<td>1 pc</td>
<td></td>
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</tbody>
</table>

Outrunner 37 / 48 Deluxe

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Size</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>KM0374811</td>
<td>1 pc</td>
<td></td>
</tr>
</tbody>
</table>

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

40A Brushless ESC

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Size</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>KC2040A02</td>
<td>55 x 28 x12mm</td>
<td>1 pc</td>
</tr>
</tbody>
</table>

- Current : 40A continuous
- Burst current ( < 10 seconds) : 55A
- Weight : 33g (with wires)
- BEC output : 3A
- Input :
  - Li - ion / Li - poly 2 - 5 cells;
  - Nimh / Nicd 5 - 15 cells

Clevis Wrench

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Size</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>PL8210010</td>
<td>1 set</td>
<td></td>
</tr>
</tbody>
</table>

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

Propeller Adaptor

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Size</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>HW2340102</td>
<td>d5xD6</td>
<td>1 set</td>
</tr>
</tbody>
</table>

Outrunner 37 / 48 Deluxe
Ducted Fan

Pattern

Warbirds

Funfly

Scale

Electric

Sports

Glider

Trainer

Boat

Accessories

Covering
(Lightex / Toughlon)