Ultimate 40 (GA018)

Specifications

Wing Span: 42.0 in / 1060 mm
Wing Area: 578 sq in / 37.3 sq dm
Flying Weight: 4.5 lbs / 2050 g
Fuselage Length: 39.5 in / 1000 mm
Requires: 2-stroke 0.40-0.46 or 4-stroke 0.48 engine
4-channel radio w/3 standard servos and 1 mini servo

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 are subject to change without notice.*
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.
- **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 5x28x4mm (For Aileron Servo) — 1 pc.
   RING Ø2.3mm — 2 pcs
3. PUSHROD Ø1.6x70mm w/ Threads (For Aileron Servo) — 2 pcs
   FUEL TUBE Ø6x5mm — 4 pcs
   STRAPER — 2 pcs
   CLEVIS — 2 pcs
4. MAIN WING (Upper) — 1 set
5. FUSELAGE — 1 pc.
6. VERTICAL RIN & RUDDER — 1 set
7. TAIL LANDING GEAR — 1 set
   COLLAR 2.1mm w/ set screw — 1 set
   TAIL WHEEL Ø25mm — 1 pc.
   SCREW PA3x12mm — 2 pcs
8. PUSHROD Ø1.6x45mm w/ Threads (For Elevator Servos) — 2 pcs
   SCREW PB2x12mm — 4 pcs
   FUEL TUBE Ø6x5mm — 2 pcs
   CLEVIS — 2 pcs
   HORN — 2 pcs
9. PUSHROD Ø1.5x35mm w/ Threads (For Rudder Servo) — 1 pc.
   SCREW PB2x12mm — 2 pcs
   FUEL TUBE Ø6x5mm — 1 pc.
   CLEVIS — 1 pc.
   HORN — 1 set
10. MAIN LANDING GEAR — 1 set
    MAIN WHEEL Ø65mm — 2 pcs
    WHEEL PANTS — 1 pair
    COLLAR 4.1mm w/ set screw — 4 sets
    SCREW KA2x3x5mm — 4 pcs
    QUICK RELEASE NYLON RIVET PL12080/42 — 4 pcs
    SCREW PM4x35mm — 2 pcs
    SOCKET HEAD SCREW M3x16mm — 3 pcs
    WASHER d3x57mm — 3 pcs
    WASHER d4x99mm — 4 pcs
    M4 NUT — 2 pcs
    PLATE 1mm — 1 pair
11. ENGINE MOUNT PL5111030 — 1 set
    SOCKET HEAD SCREW M3x20mm — 4 pcs
    WASHER d3x57mm — 4 pcs
12. FUEL TANK 260cc — 1 set
    DOUBLE-SIDE TAPE 4x100mm — 1 pc.
    CABLE TIE 1.5x9400mm — 1 pc.
13. LINKAGE CONNECTOR 2.1mm — 1 set
14. SOCKET HEAD SCREW M3x20mm — 4 pcs
    WASHER d3x57mm — 8 pcs
    M3 NUT — 8 pcs
    THROTTLE PUSHRING Ø1.2x300mm — 1 set
15. BATTERY COVER — 1 pc.
16. PUSHROD CONNECTOR — 1 set
    PUSHROD Ø1.6x70mm (For Elevator Servo) — 1 pc.
    STRAPER — 2 pcs
    FUEL TUBE Ø6x5mm — 2 pcs
    SPONGE 10x80x200mm (For Radio Equipment) — 2 pcs
17. CANOPY — 1 set
    DOUBLE-SIDE TAPE 8x500mm — 1 pc.
    SCREW PW2A/2 6x12mm — 4 pcs
    SILICON GROMMET d1.5x6.5mm (For Canopy) — 4 pcs
18. COWLING — 1 pc.
    TRANSPARENT 3D TEMPLATE — 1 pc.
    SPINNER Ø57mm — 1 set
    SCREW PW2A/2 6x12mm — 4 pcs
    SILICON GROMMET d1.5x6.5mm (For Cowling) — 4 pcs
19. SCREW HM4x25mm — 1 pc.
    WASHER d4x15mm — 1 pc.
20. 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 d3x7mm — 18 pcs
    M2 NYLON INSERT LOCK NUT — 2 pcs
    M3 NYLON INSERT LOCK NUT — 10 pcs
21. SCREW PB2x12mm — 8 pcs
    HORN — 4 sets
    CLEVIS — 4 pcs
    PUSHROD Ø1.6x145mm w/ Threads (For Aileron to Aileron) — 2 pcs
    FUEL TUBE Ø6x5mm — 4 pcs
22. DECALS — 1 set

COVERING:

- LIGHTEX SGX331 CUB YELLOW
- LIGHTEX SGX311 FERRARI RED
- LIGHTEX SGX251 SKY BLUE
- LIGHTEX SGX250 BLUE
- LIGHTEX SGX310 RED
- LIGHTEX SGX312 BRIGHT RED
- LIGHTEX SGX100 WHITE
1. **Main Wing (Lower)**

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

2. **Aileron Servo (Lower)**

   - Please use mini servo

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.

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

6 Vertical Fin & Rudder

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

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

- PA3x12mm Screw
- 2mm Collar
- M3x3mm Set Screw

8 Elevator Pushrod

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

9 Rudder Pushrod

- Ø1mm pilot holes for The Wings Maker tri-horn are pre-drilled. Please look for pin-hole marks at side of control surfaces.
**10 Main Landing Gear**

- **M3x20mm Socket Head Screw**: 3
- **PM4x38mm Screw**: 2
- **KA2.3x8mm Screw**: 4
- **d3xD7mm Washer**: 4
- **d4xD9mm Washer**: 4
- **M4 Nut**: 3
- **4.1mm Collar**: 4

---

**Bottom View**

**Completed**

- **d4xD9mm Washer**: 3
- **M4 Nut**: 3
- **3mm Set Screw**: 4
- **Plate 1mm**: 4
- **4.1mm Collar**: 4

---

**11 Engine Mount**

- **M3x20mm Socket Head Screw**: 4
- **d3xD7mm Washer**: 4

- **Apply thread locker to screws.**

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

---

**12 Fuel Tank**

- **Cable Tie 1.5x5x400mm**: 4
- **Double_side Tape 40x100mm**: 4

- **Completed**

---

GA018PO27811208 P.6
13 Servo Set

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

! Please refer to attached sheet for linkage connector installation.

14 Engine

- M3x25mm Socket Head Screw 4
- M3 Nut 8
- d3xD7mm Washer 8

- Inverted Mount

15 Battery Cover

- Battery Cover

Front
16 Radio Equipment

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

17 Canopy

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

18 Cowling & Spinner

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

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.
21 Main Wing

- PB2x12mm Screw 8
- Ø1mm pilot holes for The Wings Maker tri-horn are pre-drilled. Please look for pin-hole marks at under side of control surfaces.

22 Wing Setting

- Adjust the wing and fuselage configuration as shown in the diagrams.
23 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: 30mm 30mm
- Ailerons: 5mm 5mm

24 C.G.

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.

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 40 is specially designed to be powered by 2-stroke 0.40 - 0.46 or 4-stroke 0.48 engines, using a more powerful engine does not mean better performance. In fact, overpowered 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.

# Check and re-tighten up all factory assembled screws, use thread locker if necessary.

http://www.thewingmaker.com/instructionManuals.php
Usage of the transparent 3D template

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

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.
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.

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.