Before commencing assembly, please read these instructions thoroughly.

1/4 SUPER CUB (GA036)

Specifications

Wing Span: 104 in / 2640 mm
Wing Area: 1586 sq in / 102.3 sq dm
Flying Weight: 14 lbs / 6300 g
Fuselage Length: 68 in / 1725 mm
Requires: 2-stroke 0.91 or
4-stroke 1.20-1.60 engine,
5-channel radio w/ 6 standard servos

⚠️ 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 electric 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.*

THE WINGS MAKER
FACTORY PRE-FABRICATED
ALMOST-READY-TO-FLY (ARF) SERIES
MADE IN CHINA
www.thewingsmaker.com

GA036PO27191202
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.
- **Peel off shaded portion covering film.**
- **Drill holes with the specified diameter (here: 3mm).**
- **Pay close attention here!**
- **Warning!** Do not overlook this symbol!
Parts List

1. MAIN WING -- 1 pair
   - COVERING: TOUGHON STL 100 WHITE

2. PUSHROD Ø1.8x120mm w/ Threads (For Aileron & Flap Servo) -- 4 pcs
   - COVERING: TOUGHON STL 312 BRIGHT RED
   - FUEL TUBE Ø6x5mm -- 8 pcs
   - STRAPER PL4112102 -- 4 pcs
   - SCREW PB2x30mm -- 12 pcs
   - SCREW PWA2x8mm -- 16 pcs
   - SERVO MOUNTING PANEL -- 4 pcs
   - TRI-HORN M3x22mm(L) PL4111251 -- 4 sets

3. SCREW PM3x15mm -- 12 pcs
   - WASHER d3xD7mm -- 16 pcs
   - MAIN WING STRUTS -- 1 set
   - WING STRUT WIRE Ø3x143x208mm -- 2 pcs
   - PLASTIC WIRE BRACKET -- 8 pcs

4. FUSELAGE -- 1 pc.
   - STABILIZER & ELEVATOR -- 1 set
   - VERTICAL FIN & RUDDER -- 1 set

5. TAIL GEAR ASSEMBLY 11-22LBS PL3410021 -- 1 set
   - PLATE (For Staying on Tail Fuselage Bottom) 1x10x40mm -- 1 pc

6. TAIL PLATE (For Staying on Tail Fuselage Bottom) 1x10x40mm -- 1 pc

7. SCREW PM3x13mm -- 2 pcs
   - ALUMINUM PLATE 2mm -- 2 pcs
   - MAIN LANDING GEAR -- 1 set
   - SCREW PA3x12mm -- 14 pcs
   - WASHER d3xD7mm -- 2 pcs
   - MOUNTING PLATE 12x20mm -- 6 pcs

8. SCREW PA1.7x8mm -- 6 pcs
   - SCREW PB2x12mm -- 3 pcs
   - FUEL TUBE Ø6x5mm -- 1 pc
   - CLEVIS PL4112103 -- 1 pc
   - TRI-HORN M3x22mm(L) PL4111251 -- 1 set
   - PUSHROD Ø1.8x1000mm w/ Threads (For Elevator Servo) -- 2 pcs

9. ENGINE MOUNT PL5111080 -- 1 set
   - SOCKET HEAD SCREW M4x30mm -- 4 pcs
   - WASHER d4x2D14.5mm -- 4 pcs
   - M4 BLIND NUT -- 4 pcs

10. ALUMINUM PLATE (For Engine Mount) -- 1 pc.
    - ANTI-VIBRATION MOUNT PL5214094 -- 1 set
    - SOCKET HEAD SCREW M4x35mm -- 4 pcs
    - SCREW KM3x20mm -- 8 pcs
    - WASHER d4xD12mm -- 6 pcs
    - NYLON INSERT LOCK NUT M3 -- 8 pcs
    - NYLON INSERT LOCK NUT M4 -- 4 pcs
    - THROTTLE PUSHWIRE Ø1.2x480mm -- 1 pc.
    - PLASTIC TUBE d2xD3x300mm -- 1 pc.

11. SCREW PWA2.6x12mm -- 4 pcs
    - SILICON GROMMET 1.5xD6.5mm (For Cowling) -- 4 pcs
    - COWLING -- 1 pc.

12. FUEL TANK 450cc -- 1 set
    - CABLE TIE 1.5x5x400mm -- 1 pc.
    - DOUBLE-SIDED TAPE 40x100mm -- 1 pc.

13. SCREW PB2x16mm -- 6 pcs
    - FUEL TUBE Ø6x5mm -- 2 pcs
    - CLEVIS PL4112103 -- 2 pcs
    - TRI-HORN M3x22mm(L) PL4111251 -- 2 sets
    - PUSHROD Ø1.8x1000mm w/ Threads (For Elevator Servo) -- 2 pcs

14. SCREW PB2x16mm -- 3 pcs
    - FUEL TUBE Ø6x5mm -- 1 pc.
    - CLEVIS PL4112103 -- 1 pc.
    - TRI-HORN M3x22mm(L) PL4111251 -- 1 set
    - PUSHROD Ø1.8x1065mm w/ Threads (For Rudder Servo) -- 1 pc.

15. FLYING WIRE Ø1.8x1300mm -- 1 pc.
    - FLYING WIRE BRACKET PL4112600 -- 6 pcs
    - FLYING WIRE BRACKET CLEVIS -- 4 pcs
    - EYE SCREW M1.8x6x12mm -- 4 pcs
    - SCREW PM2x8mm -- 4 pcs
    - WASHER d2xD5mm -- 6 pcs
    - COPPER TUBE Ø1.5xD6.5mm (For Cowling) -- 4 pcs

16. SIDE WINDOWS -- 1 pair

17. LINKAGE CONNECTOR Ø2. 1 mm -- 1 set
    - CABLE TIE 1.5x5x400mm -- 1 pc.

18. PLYWOOD 3x153x210mm (For Fuselage Servos) -- 1 pc.
    - FUEL TUBE Ø6x5mm -- 2 pcs
    - STRAPER PL4112102 -- 2 pcs
    - PUSHROD Ø1.8x85mm (For Elevator) -- 1 pc.
    - PUSHROD CONNECTOR 4x9x20mm PL4410010 -- 1 set
    - SPONGE 10x80x200mm -- 2 pcs

19. SCREW PWA2x12mm -- 4 pcs
    - PILOT PC001102A -- 1 set
    - COCKPIT BASE PANEL 3x145x165mm -- 2 pcs

20. SCREW PWA2.3x12mm -- 4 pcs
    - SCREW PM2x14mm -- 2 pcs
    - WASHER d2xD5mm -- 4 pcs
    - SILICON GROMMET 1.5xD6.5mm (For Wind Shield) -- 4 pcs
    - M2 NYLON INSERT LOCK NUT -- 2 pcs
    - WIND SHIELD -- 1 pc.
    - MOUNTING PLATE 5x15mm -- 2 pcs

21. WING TUBE Ø16x609mm -- 2 pcs
    - SCREW PA3x30mm -- 2 pcs
    - SCREW PM3x30mm -- 2 pcs
    - WASHER d3xD7mm -- 4 pcs

22. SCREW PM3x8mm -- 2 pcs
    - WASHER d3xD7mm -- 4 pcs
    - M3 NYLON INSERT LOCK NUT -- 2 pcs

23. DECALS: GA036DEC -- 1 set

COVERING: GA036PO27191202

TOUGHON STL 100 WHITE
TOUGHON STL 312 BRIGHT RED
1. Main Wing

- Pre-glued Aileron & Flap Servo Lead

- Bottom View

2. Aileron & Flap Servo

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

- Screws:
  - PB2 x 30mm Screw
  - PWA2 x 8mm Screw

- Additional parts:
  - Straper
  - Fuel Tube Ø6x5mm
  - Fuel Tube Ø6x5mm
  - Clevis
  - Tri-horn M3x22mm
  - Pushrod Ø1.8x120mm

- Tools:
  - TWM PL8210010 CLEVIS WRENCH

- Bottom View
3 Wing Struts

- **Screw**: M3 x 15mm, 12 pieces
- **Washer**: d3xD7mm, 16 pieces
- **Nut**: M3, 4 pieces

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

4 Stabilizer & Elevator

- Pre-glued: M3x15mm, 16 pieces
- **Washer**: d3xD7mm, 4 pieces

5 Vertical Fin & Rudder

- Pre-glued: M3 x 15mm, 4 pieces
- **Washer**: d3xD7mm, 16 pieces

COMPLETED
6 Tail Landing Gear

PA3x14mm Screw 3
PWA2x12mm Screw 3

Bottom View

7 Main Landing Gear

PA3x12mm Screw 14
PM3x13mm Screw 2
d3xD7mm Washer 2

Bottom View

8 Main Landing Gear

PA1.7x8mm Screw 6
PM3x13mm Screw 8
d3xD7mm Washer 16
M3 Nut 8
3mm Set Screw 4
4.6mm Wheel Collar 4

Bottom View
Engine Mount

- M4x30mm Socket Head Screw (4 pieces)
- D4.2xD14.5mm Washer (4 pieces)
- M4 Blind Nut (4 pieces)

Determine the angle of installation of the engine mount so the muffler will not contact the fuselage.

Socket Head Screw M4 x 30mm

Engine Mount PL 5111080

Washer d4.2xD14.5mm

M4x30mm Socket Head Screw

10 Engine

- M4x35mm Socket Head Screw (4 pieces)
- d4xD12mm Washer (8 pieces)
- M4 NYLON INSERT LOCK Nut (4 pieces)

ANTI-VIBRATION MOUNT INSTALLATION

1. Copper Tube d4.1xD5x67.2mm
2. Copper Tube d3.1xD4x7.2mm
3. KM3x20mm Screw

M4 NYLON INSERT LOCK NUT D4xD12mm Washer

M4x35mm SOCKET HEAD SCREW

Installed Engine Position

- Throttle Pushwire Ø1.2x480mm
- Plastic Tube d2xD3x300mm

147mm 5.79 in.
Cowling

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

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

Fuel Tank

- Cable Tie 1.5x5x400mm
- Double-sided Tape 40x100mm
13 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.

- Bottom View

PB2x16mm Screw 6

PB2x16mm

Tri-horn M3x22mm

Clevis Fuel Tube Ø6x5mm

14 Rudder Pushrod

- Ø1mm pilot holes for The Wings Maker tri-horn are pre-drilled.

- Bottom View

PB2x16mm Screw 3

PB2x16mm

Clevis Fuel Tube Ø6x5mm

Tri-horn M3x22mm

GA036PO27191202 P.8
Securely glue the windows to the fuselage.

Please refer to the attached sheet for linkage connector installation.
Install and arrange the servos as shown in the diagram.

Radio Equipment

Pushrod Connector
Elevator Servo
J1: Pushrod Ø1.8x85mm
J2: Pushrod Ø1.8x100mm

Pilot

PWA 2x12mm Screw

Wind Shield

PWA2.3x12mm Screw
d1.5x6.5mm Silicon Grommet
M2 Nylon Insert Lock Nut
PM2x14mm Screw
d2x5mm Washer

GA036PO27191202 P.10
Main Wing

Step 1. Insert the aluminum wing tube with the pre-drilled hole end into the right wing. Align the lines marked at the wing root and wing tube and apply the PM3 x 30mm machine screw through the pre-drilled hole on top of the wing. (please confirm the alignment of the hole by putting a 2.5mm diameter rod through the pre-drilled wing hole before applying the screw.) The hole on the wing tube is pre-threaded, do not over tighten the PM3mm screw, the set up is for future removal of the wing.

Step 2. Install the right wing to the fuselage by inserting the wing tube (now attached to the right wing) through the fuselage, then install the left wing.

Step 3. Make sure the wings are resting against the fuselage tightly. Locate the pre-drilled 2.5mm hole at top of left wing, and drill along with 2.5mm drill bit until it passes through the wing tube. Apply the PA3 X30mm self-tapping screw.

Note: It is recommended that the wing tube stays with the left wing. Removal of the wings could be achieved by removing the right wing machine screw, the right wing then the left wing with wing tube. If removal of wing tube from left wing is also required, it is recommended that instead of applying self-tapping screw in step 3, you pre-tap with M3 thread cutter and apply M3 machine screw.
22 Wing Struts

- PM3 x 8mm Screw 2
- d3xD7mm Washer 4
- M3 Nylon Insert Lock Nut 2

L/R

23 Wing Setting

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

A = A'
B = B'
C = C'
**24 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**
  - 55mm

- **Elevator**
  - 40mm

- **Flaps (near fuselage)**
  - 40mm

- **Ailerons (away from fuselage)**
  - 20mm

---

**25 C.G.**

The ideal C.G. position is 102mm (4.0 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.

![C.G. Diagram](http://www.thewingsmaker.com/instructionManuals.php)

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**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.

# 1/4 SUPER CUB is specially designed to be powered by **2C 0.91 or 4C 1.20-1.60**, 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.
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.

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

(ACCESSORIES)

180mm Extension

<table>
<thead>
<tr>
<th>Code No.</th>
<th>Size</th>
<th>Package</th>
</tr>
</thead>
<tbody>
<tr>
<td>KW0011800</td>
<td>180mm</td>
<td>1 set</td>
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</table>

For park flyers of small electric models.

180mm Y-Cord

<table>
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<th>Size</th>
<th>Package</th>
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</thead>
<tbody>
<tr>
<td>KW0021800</td>
<td>180mm</td>
<td>1 pc</td>
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Charge Receptacles

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<th>Size</th>
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<tbody>
<tr>
<td>KP0041300</td>
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</table>

Field Stand

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<tr>
<th>Code No.</th>
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<th>Package</th>
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<tbody>
<tr>
<td>MS9111430</td>
<td>600 x 240 x 310mm</td>
<td>1 pc</td>
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Fuel Filler

<table>
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<th>Size</th>
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<tbody>
<tr>
<td>PL8110030</td>
<td>15 x 22 x 49mm</td>
<td>1 x 1 pc</td>
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Clevis Wrench

<table>
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<th>Size</th>
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<tbody>
<tr>
<td>PL8210010</td>
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Special tool for clevis installation. Suitable for standard and small (EP) clevis.

Standard Servo

<table>
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<th>Size</th>
<th>Package</th>
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</thead>
<tbody>
<tr>
<td>SV4031</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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