**THE WINGS MAKER\nFACTORY PRE-FABRICATED\NALMOST-READY-TO-FLY (ARF) SERIES\NMADE IN CHINA\nwww.thewingsmaker.com**

**CAP 232 46S**

**Specifications**

- **Wing Span**: 56.5 in / 1440 mm
- **Wing Area**: 496 sq in / 32 sq dm
- **Flying Weight**: 5.5 lbs / 2500 g
- **Fuselage Length**: 50 in / 1270 mm

**Required**:
- 2-stroke 0.46 or 4-stroke 0.70 engine
- 4-channel radiow/ 5 servos

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

1. MAIN WING -- 1 pair
2. PLYWOOD 6x31x204mm (Wing Joiner) -- 1 pc.
3. SCREW PB2x20mm -- 6 pcs
   SCREW PW2x8mm -- 8 pcs
   CLEVIS PL4112103 -- 2 pcs
   STRAPER PL4112102 -- 2 pcs
   FUEL TUBE Ø6x5mm -- 4 pcs
   TRÅ- HORN M3x14mm(S) PL4111221 -- 2 pcs
   PUSHROD Ø1.8x105mm w/ Threads (For Aileron) -- 2 pcs
   SERVO MOUNTING PANEL PL5310000 -- 1 pair
4. STABILIZER & ELEVATOR -- 1 set
   FUSELAGE -- 1 pc.
5. VERTICAL FIN & RUDDER -- 1 set
6. TAIL LANDING GEAR PL7100001 -- 1 set
   SCREW PA3x12 mm -- 2 pcs
   COLLAR 2.1mm w/ set screw -- 1 set
   TAIL WHEEL Ø23mm -- 1 pc.
7. PUSHROD Ø1.8x620mm w/ Threads (For Rudder) -- 1 pc.
   SCREW PB2x16mm -- 3 pcs
   CLEVIS PL4111203 -- 1 pc.
   FUEL TUBE Ø6x5mm -- 1 pc.
   TRÅ- HORN M3x14mm(S) PL4111221 -- 1 pc.
8. PUSHROD Ø1.8x465mm w/ Threads (For Elevator) -- 2 pcs
   SCREW PB2x16mm -- 6 pcs
   CLEVIS PL4111203 -- 2 pcs
   FUEL TUBE Ø6x5mm -- 2 pcs
   TRÅ- HORN M3x14mm(S) PL4111221 -- 2 pcs
9. MAIN LANDING GEAR HW2402292 -- 1 pcs
   COLLAR 4.1mm w/ set screw -- 4 sets
   SOCKET HEAD SCREW M3x16mm -- 3 pcs
   SCREW PM4x38mm -- 2 pcs
   QUICK RELEASE NYLON RIVET PL1208042 -- 3 sets
   WASHER Ø4x9mm -- 4 pcs
   M4 NUT -- 2 pcs
   MAN WHEEL Ø8mm -- 2 pcs
   WHEEL PANTS -- 1 pair
   ALUMINUM PLATE 1mm -- 2 pcs
10. FUEL TANK 260CC -- 1 set
    CABLE TIE 1.5x5x400mm -- 1 pc.
    DOUBLE-SIDE TAPE 40x100mm -- 1 pc.
11. ENGINE MOUNT PL5111050 -- 1 set
    SOCKET HEAD SCREW M4x25mm -- 4 pcs
    WASHER Ø4x9mm -- 4 pcs
12. LINGKAGE CONNECTOR Ø2.1mm -- 1 set
13. SOCKET HEAD SCREW M3x25mm -- 4 pcs
    M3 NUT -- 8 pcs
    WASHER Ø3xØ7mm -- 8 pcs
    THROTTLE PUSHROD Ø1.2x410mm -- 1 pc.
    PLASTIC TUBE Ø2xØ3x280mm -- 1 pc.
14. PUSHROD Ø1.8x75mm (For Elevator) -- 1 pc.
    FUEL TUBE Ø6x5mm -- 2 pcs
    STAPER PL4112102 -- 2 pcs
    PUSHER CONNOR PL4410101 -- 1 set
    PLYWOOD 3x9.9x4x110.1mm -- 1 pc.
    PLYWOOD 6x6x9.5mm -- 2 pcs
    SPONGE (For Radio Equipment) 60x70x122mm -- 1 pc.
15. SCREW HM4x30mm -- 2 pcs
    WASHER Ø4.2x14.5mm -- 2 pcs
    PLYWOOD 2x30x92mm (Wing Protection) -- 1 pc.
16. COWLING -- 1 pc.
    TRANSPARENT 3D TEMPLATE -- 1 pc.
    SCREW PW2.6x12mm -- 4 pcs
    SILICON GROMMET Ø1.5xD6.5mm -- 4 pcs
    SPINNER Ø62mm PL2111062 -- 1 set
17. CANOPY -- 1 pc.
    SCREW PW2.3x8mm -- 4 pcs
    SILICON GROMMET Ø1.5xD6.5mm -- 4 pcs
    PILOT PC001085B -- 1 pc.
18. DECALS: GA012SDEC -- 1 set

### COVERING:
- TOUGHON STL331 CUB YELLOW
- TOUGHON STL351 DARK BLUE
- TOUGHON STL100 WHITE

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GA012SPO27831211  P.2
Apply instant type CA glue to both sides of each hinge.

Apply glue to both sides of all surfaces in contact. Use a stick to apply glue to inner side of wing joiner sleeve, and apply glue to wing joiner before putting them together. Wing joiner not glued properly will lead to wing failure and plane crash.

Ø1.8mm pilot holes for The World Models tri-horn are pre-drilled. Please look for pin-hole marks at under side of control surfaces.
4 Stabilizer / Elevator

Temporary install the main wing, adjust leveling of the stabilizer to make it as parallel to the main wing as possible. *Also refer to step 18 Wing Setting

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

5 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.

6 Tail Landing Gear

- Bottom View

**PA3 x 12mm Screw**
- 2

**2.1mm Collar**
- 1

**WHEEL Ø23mm**
- 2.1mm Collar

- 3 x 3mm Set Screw
7 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.

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 Main Landing Gear

- Completed

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10 Fuel Tank

- Fuel Tank 260cc
- Double-sided Tape 40x100mm
- Cable Tie 1.5x5x400mm
- Completed

11 Engine Mount

- M4x25mm Socket Head Screw
- d4x9mm Washer
- Blind nuts are off-centered to keep the spinner at the fuselage axis.

- Engine Mount PL511050
- Apply thread locker to screws.

12 Servo Set

- LINKAGE CONNECTOR
  - 3 x 3mm Set Screw
  - M2 Nut
  - 2mm Washer
- Included with the radio Set.
- Please refer to attached sheet for linkage connector installation.

- Pushwire
- 3mm
- 2mm
- 2mm
- 2mm
**13 Engine**

- **Install Engine Position**
  - 132mm (5.2 in.)

- **Parts**
  - M3 Nut
  - d3xD7mm Washer
  - Throttle Pushwire Ø1.2x410mm
  - Plastic Tube d2xD3x280mm

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**14 Radio Equipment**

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

- **Parts**
  - Rudder pushrod Ø1.8x620mm
  - Rudder Servo
  - Balsa Fuel Tube Ø6x5mm
  - Plywood 3x99.4x110.1mm
  - Receiver
  - Battery
  - Plastic Tube d2xD3x280mm

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15 Main Wing

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

- HM 4x30mm Screw
- d1.5xD6.5mm Washer

16 Cowling

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

- PWA2.6x12mm Screw
- d1.5xD6.5mm Silicon Grommet

17 Canopy

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

- PWA2.3 x 8mm Screw
- d1.5xD6.5mm Silicon Grommet
18 Wing Setting

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

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**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.

- **Elevator**
  - 35mm
  - 35mm

- **Rudder**
  - 80mm
  - 80mm

- **Ailerons**
  - 12mm
  - 12mm

**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.

- **CAP 232 46S** is specially designed to be powered by 2C 0.46 or 4C 0.70 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.

**20 C.G.**

The ideal C.G. position is 83mm (3.26 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 10% of current C.G. distance from leading edge to compensate for weight of fuel.

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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.

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