

GWS190遙控電動模型飛機
R/C ELECTRIC MODEL AIRCRAFT

GWS

www.gws.com.tw
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GWS 190

ENGLISH 2

中文(繁體) 12

技術說明書

Instruction Manual

Please read these instructions carefully and thoroughly before assembly in order to achieve safe operation with maximum performance from your "GWS190" airplane.

組裝前務請仔細閱讀這本組裝說明書，並按說明指引之步驟，精心組裝零部件，正確做好遙控／動力系統各項功能、動作之調整檢測。此機型為中級機型，請在掌握基本遙控操縱技術後使用為宜。



WARNING! This is a hobby kit, not a toy. Children must be under the strict supervision of adults who have studied the precautions given in this manual.

警示! 僅供 14 歲以上人員使用，兒童須在成人監護下使用。

Specification

| | |
|---|---|
| Wing Span: 1012 mm (39.8in) | Radio Required : 4CH |
| Wing Area: 17.2dm ² (265.7sq in) | Receiver: GWS-R6N II / R8M / R8MSL |
| Length: 830mm (30.9in) | Servo: NARO × 4 |
| Flying Weight: 580~650g (20.5~23oz) | Speed Controller: GWESC25A / ICS400 |
| Wing Loading: 33.7~37.8g / dm ² (11.1~12.5oz / sq ft) | Battery Required: 11.1V 1.3-2.2Ah Li-Po / 9.6V 0.75~1.6Ah Ni-Mh |
| Propeller: EP1060HD / EP1147 / EP1080HD | Power System: EPS400C-FS / EPS-BR2028-4BS / BL 2215-12T |

Parts List

| | | | | | |
|-----------------------------------|----|-----------------------------|----|---------------------------|----|
| 01.GWS190 Fuselage(L) | x1 | 19.Fiberglass Rod 4*2.5*470 | x2 | 37.Wooden Stick | x1 |
| 02.GWS190Fuselage(R) | x1 | 20.Fiberglass Rod 3*1.6*340 | x1 | 38.U shape Canopy latch A | x1 |
| 03.Horizontal Stabilizer/Elevator | x1 | 21.Tubing(Elevator) | x1 | 39.U shape Canopy latch B | x1 |
| 04.Left Wing | x1 | 22.Tubing(Rudder) | x1 | 40.Ball Shape Latch | x6 |
| 05.Right Wing | x1 | 23.V Shape connecting rod | x1 | 41.Ball Shape Latch | x6 |
| 06.Battery cover | x1 | 24.push rod(elevator) | x1 | 42.Frame A | x1 |
| 07.Canopy(PET) | x1 | 25.push rod(Rudder) | x1 | 43.Frame C | x1 |
| 08.Engine Cowling | x1 | 26.push rod(aileron) | x2 | 44.Clear Tubing | x8 |
| 09.SPINNER(R) | x1 | 27.U shape connecting rod | x1 | 45.Pushrod Fixing | x4 |
| 10.SPINNER(L) | x1 | 28.Pushrod Lock Head ∅ 1.0 | x2 | 46.Washer | x8 |
| 11.Foam Tire / Wheel (2") * | x2 | 29.Pushrod Lock Head ∅ 1.4 | x2 | 47.M3*4 Screws | x4 |
| 12.Foam Tire / Wheel (1") * | x1 | 30.Y split servo wire | x1 | 48.GWS Glue | x1 |
| 13.Tubing(black) * | x1 | 31.Double sided foam tape | x4 | 49.Clay Stick | x1 |
| 14.Tail 3*2*30 Landing Gear * | x1 | 32.Hinge Plates | x1 | 50.Spinner ∅30mm * * | x1 |
| 15.Left Landing Gear * | x1 | 33.M3 Hex Nut | x3 | 51.Instruction Manual | x1 |
| 16.Right Landing Gear * | x1 | 34.M3x35 Screws | x2 | 52.GWS Decal | x1 |
| 17.Washer * | x6 | 35.3x30 Screws * * | x1 | 53.GWS190 Decal(A) | x1 |
| 18.Tubing 3*1.2*20 * | | 36.∅3 Washer * * | x2 | 54.GWS190 Decal(B) | x1 |

* * Not included in SG kit

* * * Only used for SG kit

GWS190 Suggested Power System

| Power System | Propeller | Battery | E.S.C |
|--------------------|-----------|-------------------------------|--------|
| EPS400C-FS | EP1147 | 9.6V 750~1600mAh Ni-MH | ICS400 |
| GWBLM003(2212/13T) | EP1060HD | 11.1V 1.3Ah-2.2Ah (10C) Li-Po | ESC25A |
| GWBLM004(2215/12T) | | | |
| EPS-BR2028-4BS | | | |

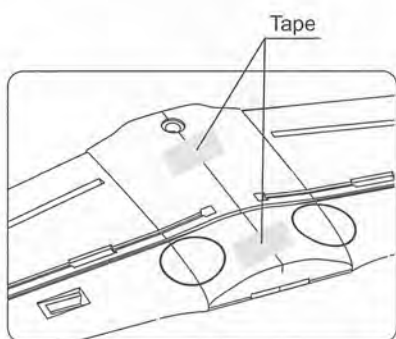
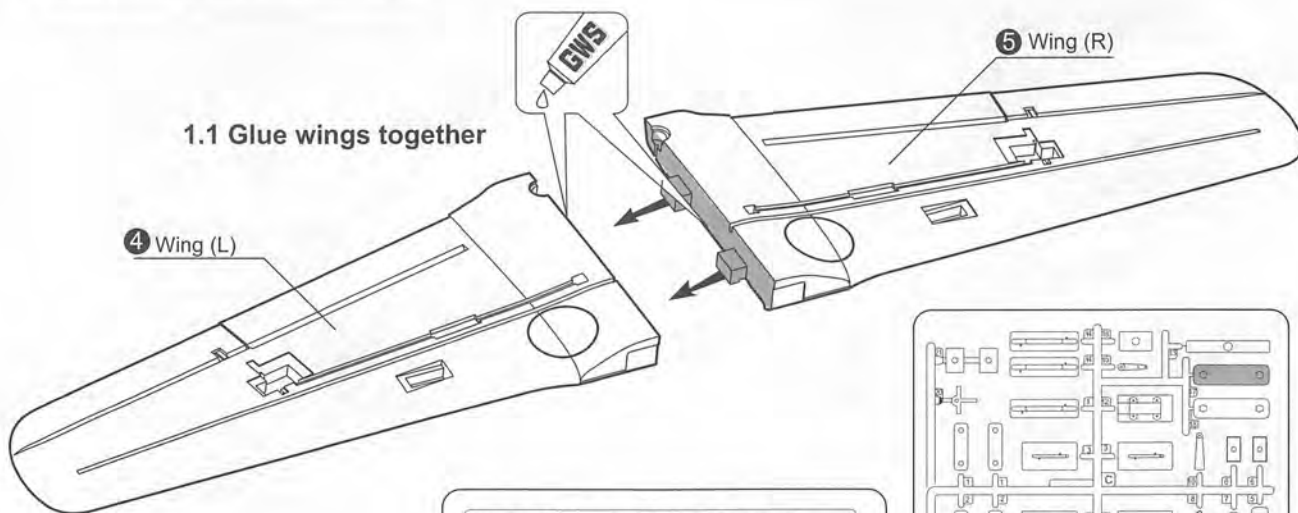
Required tools before assembly.

TOOLS & MATERIALS

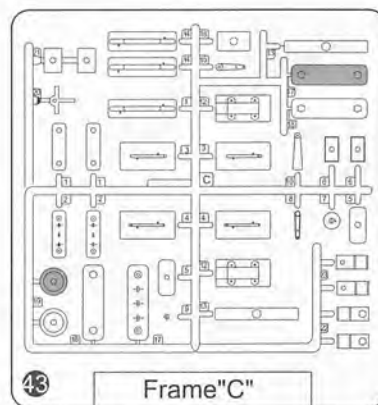
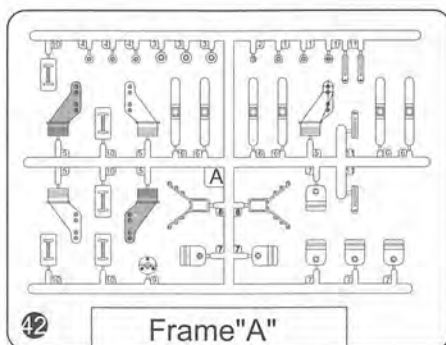


1. Wing Assembly

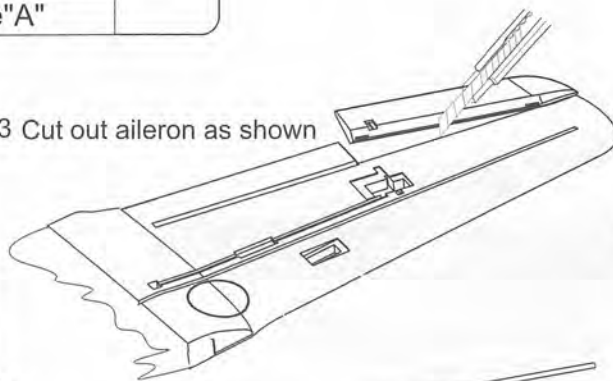
1.1 Glue wings together



1.2 Secure with tape temporarily



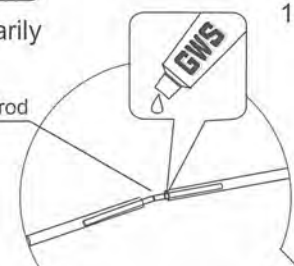
1.3 Cut out aileron as shown



1.6 Cut hinge slots



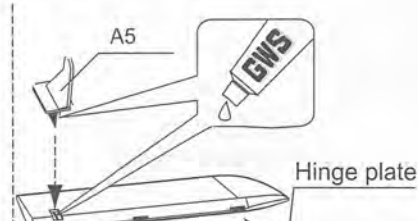
28 V shape connecting rod



1.4 Connect/glue fiberglass rods

1.5 Secure rods with glue

19 470mm fiberglass rod



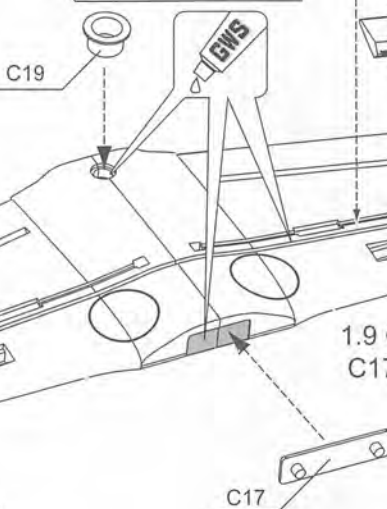
1.8 Attach horn with glue



Aileron

Hinge plate

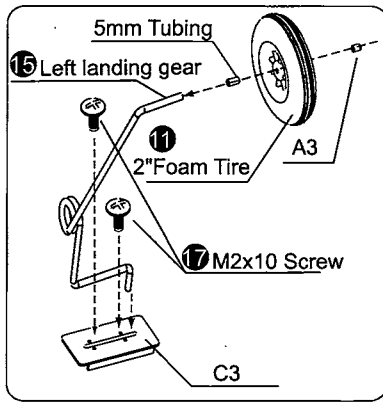
1.7 Apply GWS glue to each hinge and insert into slots on aileron / wing



1.9 Glue on plastic parts C17 and C19

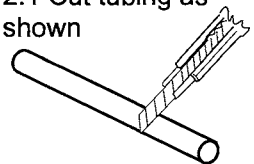
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2. Landing Gear Assembly



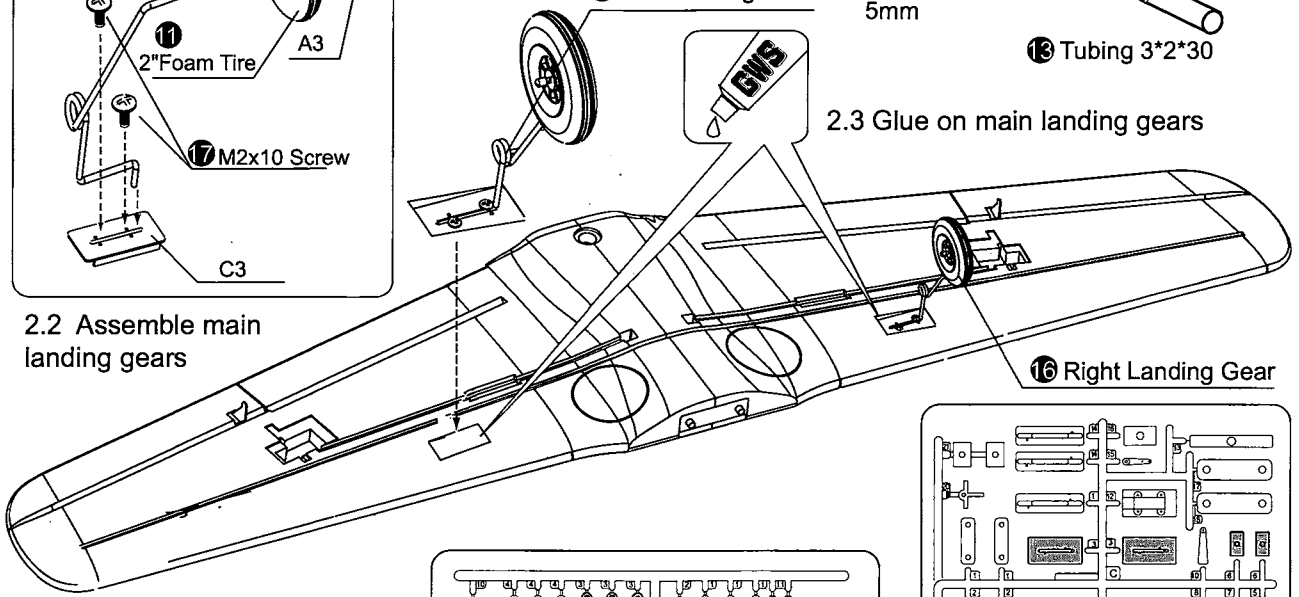
2.2 Assemble main landing gears

2.1 Cut tubing as shown

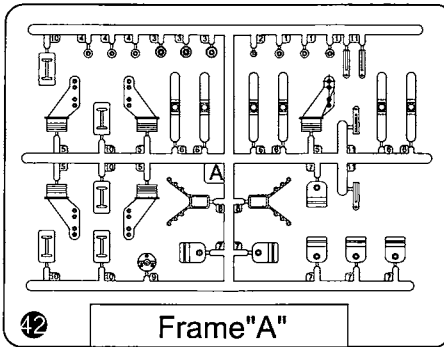


13 Tubing 3*2*30

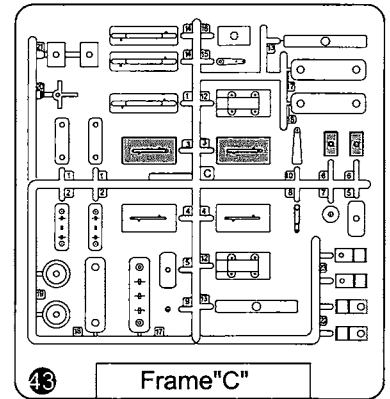
2.3 Glue on main landing gears



16 Right Landing Gear



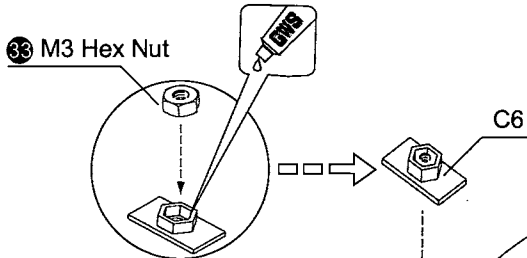
42 Frame "A"



43 Frame "C"

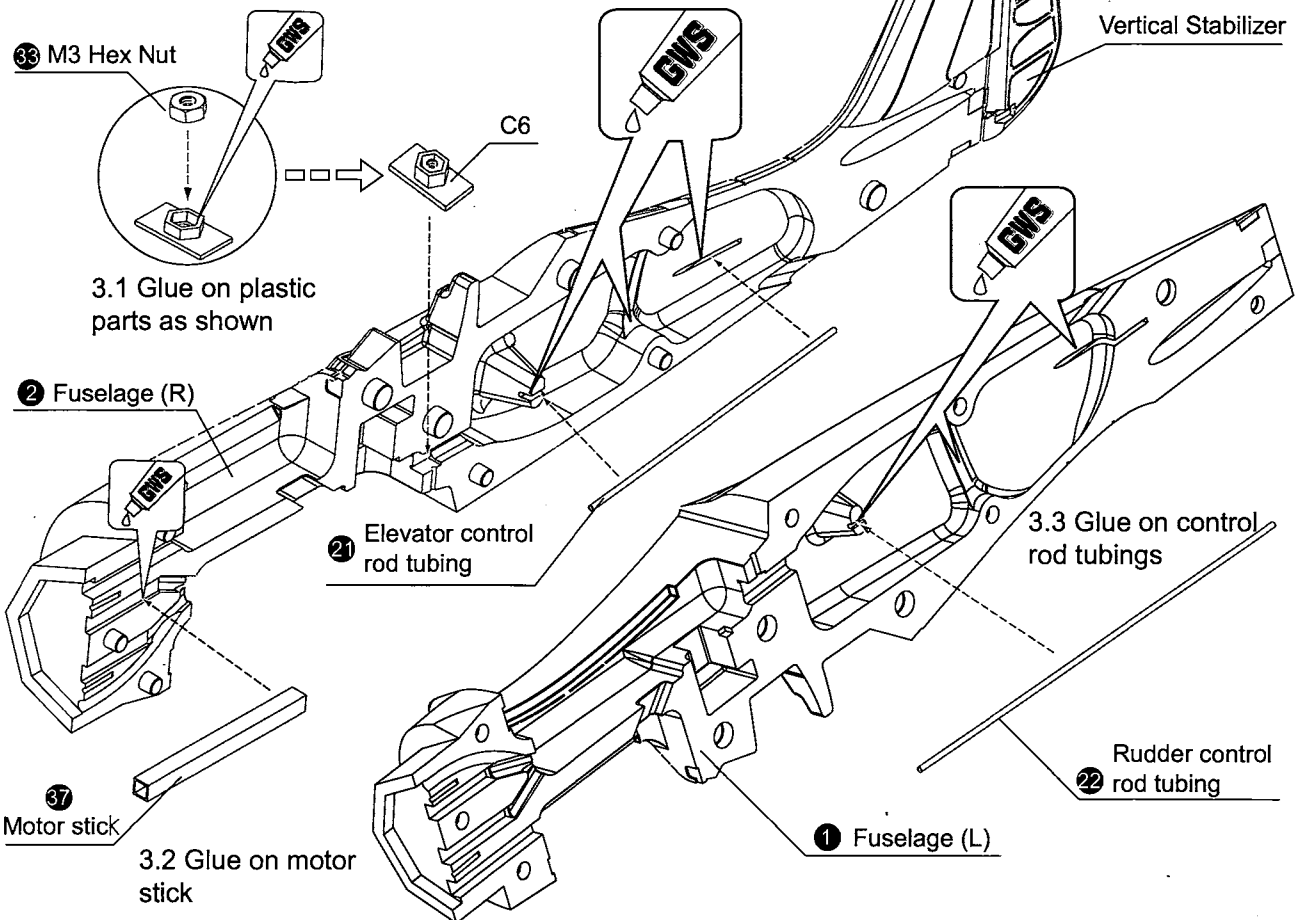
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3. Fuselage Assembly



3.1 Glue on plastic parts as shown

2 Fuselage (R)



Vertical Stabilizer

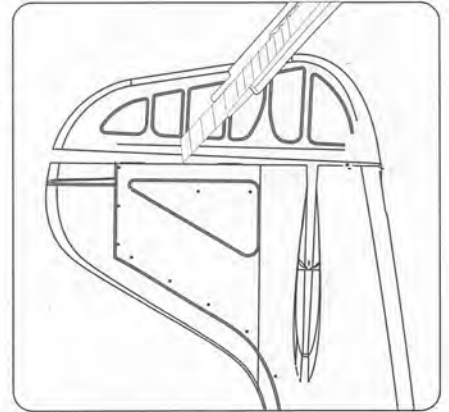
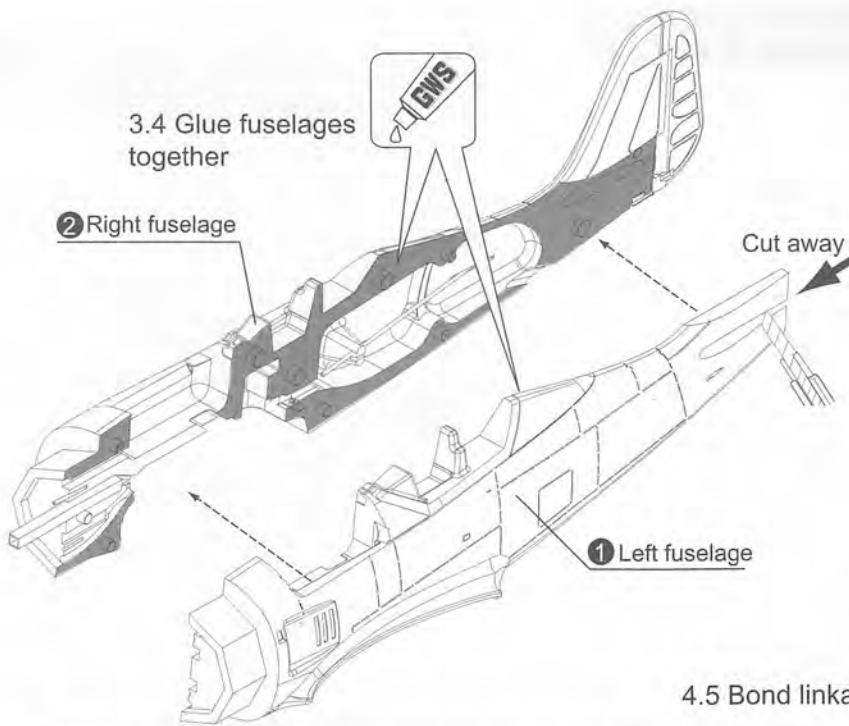
21 Elevator control rod tubing

3.3 Glue on control rod tubings

22 Rudder control rod tubing

1 Fuselage (L)

3.2 Glue on motor stick

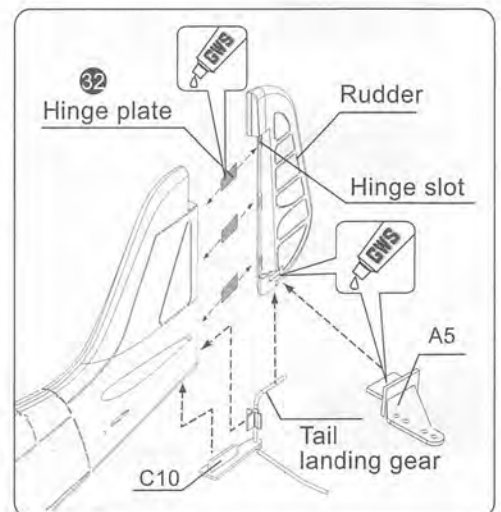
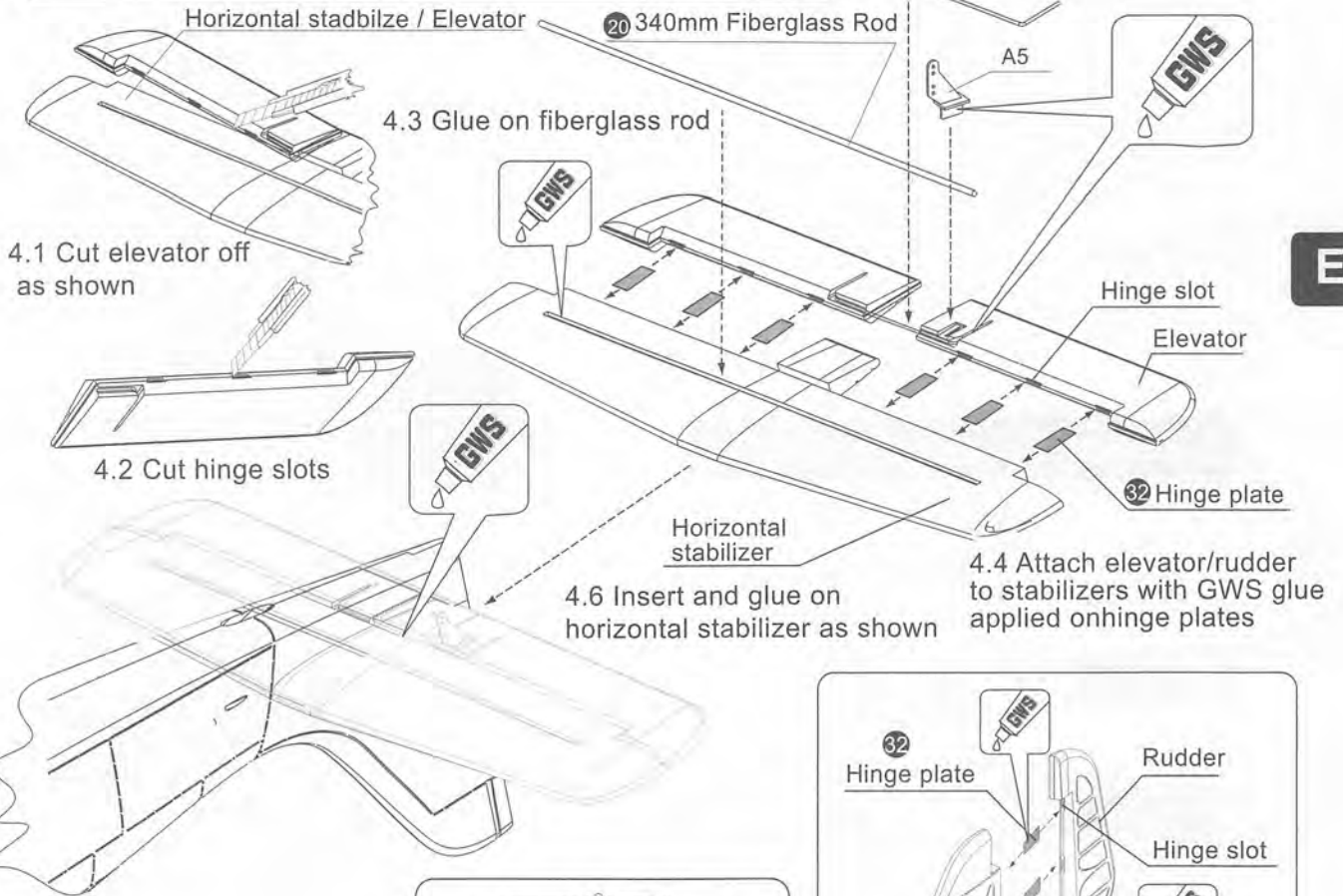


3.5 Cut rudder off

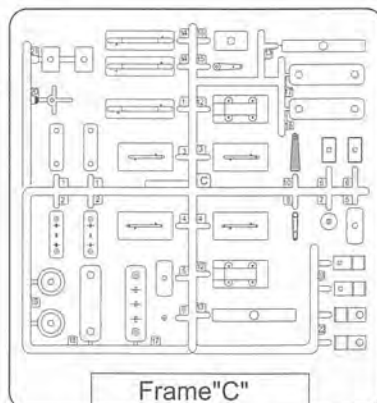
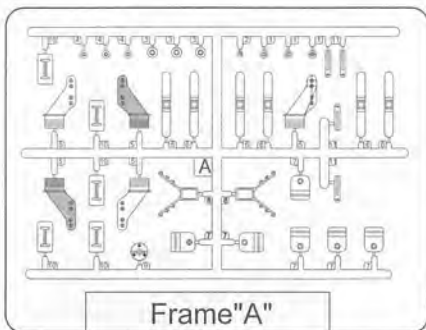
4.5 Bond linkage wire

27 Glue on U shape connecting rod

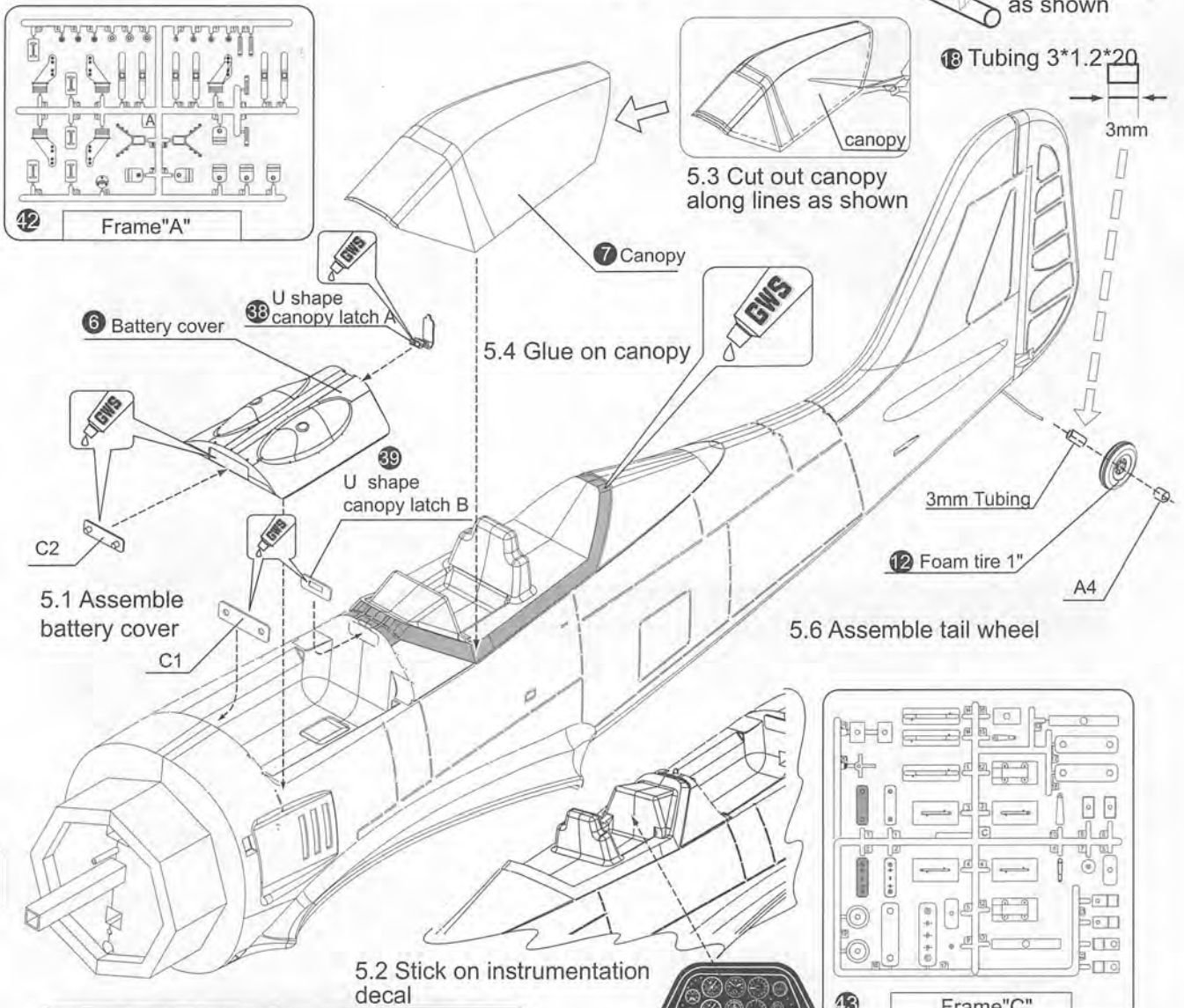
4. Horizontal/Vertical Stabilizer Assembly



4.7 Assemble vertical stabilizer and tail landing gear

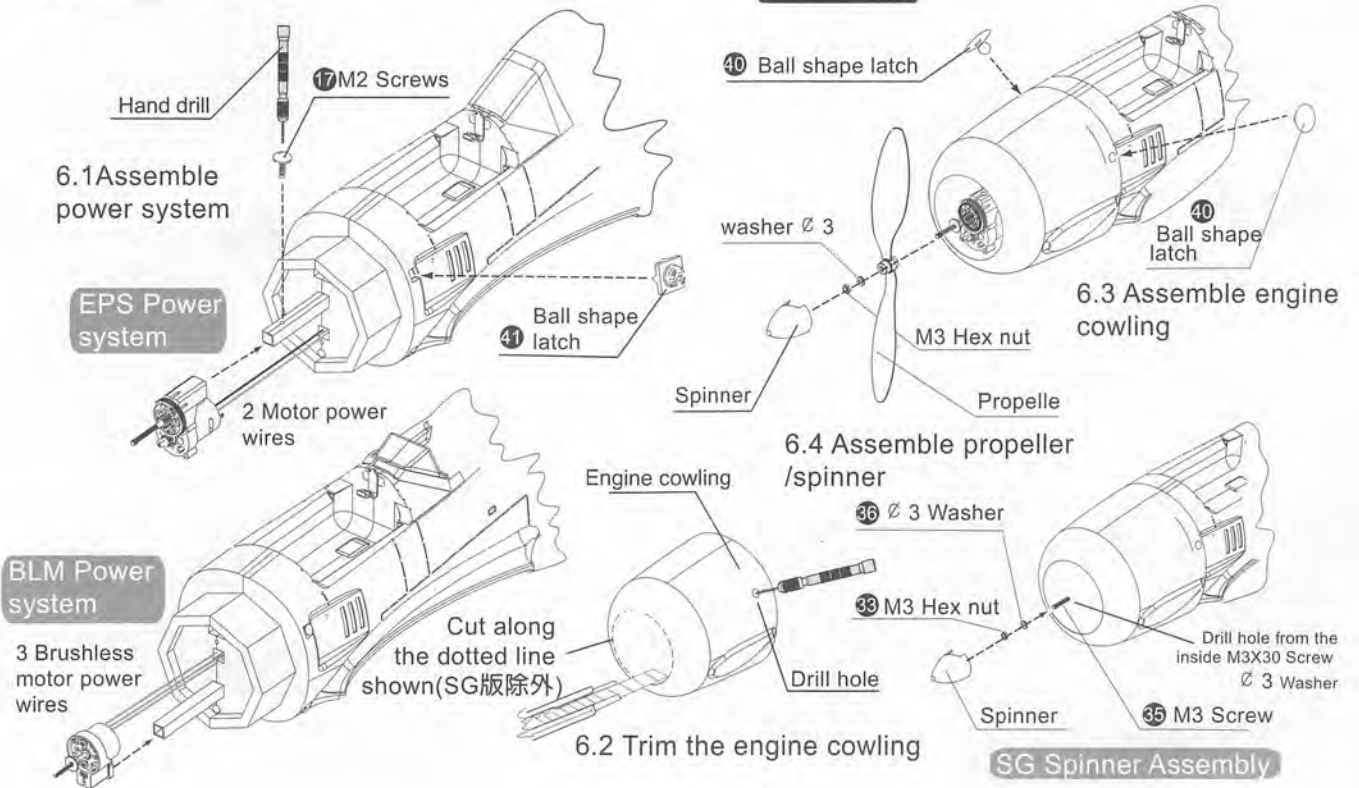


5. Canopy/Tail Wheel Assembly

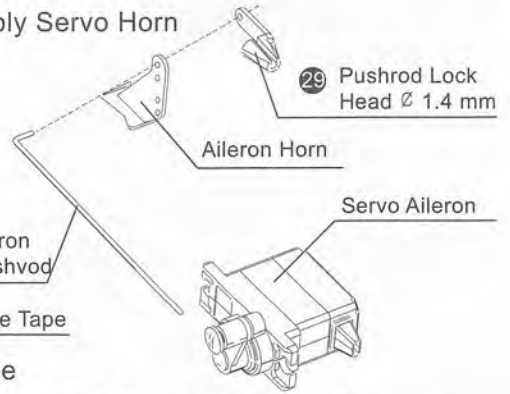
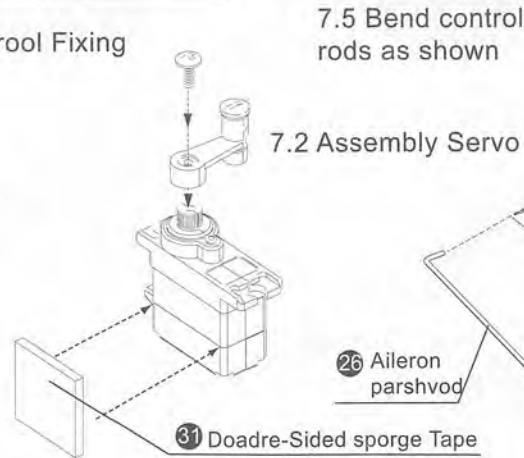
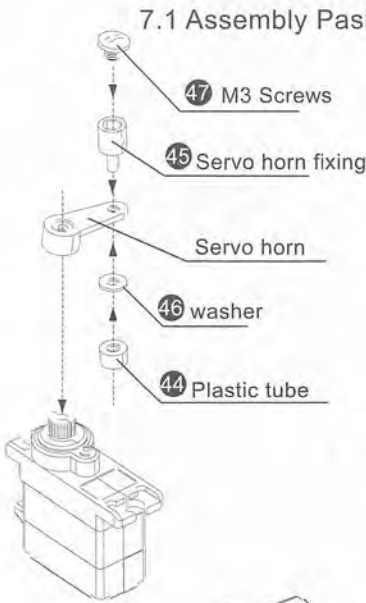
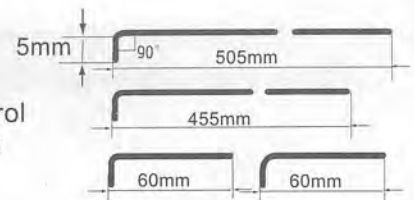


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6. Power System Assembly

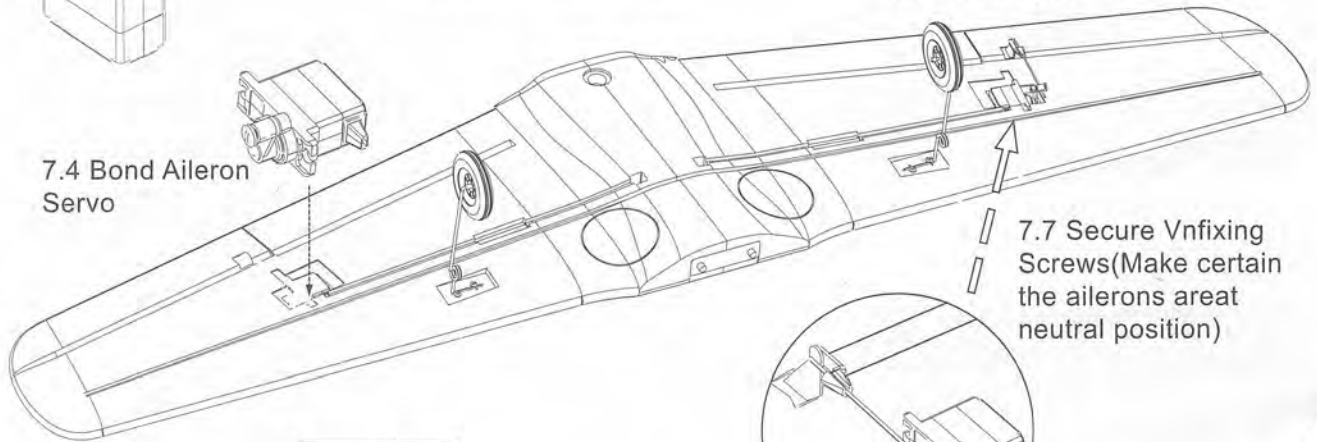


7. CONTROL SYSTEM ASSEMBLY

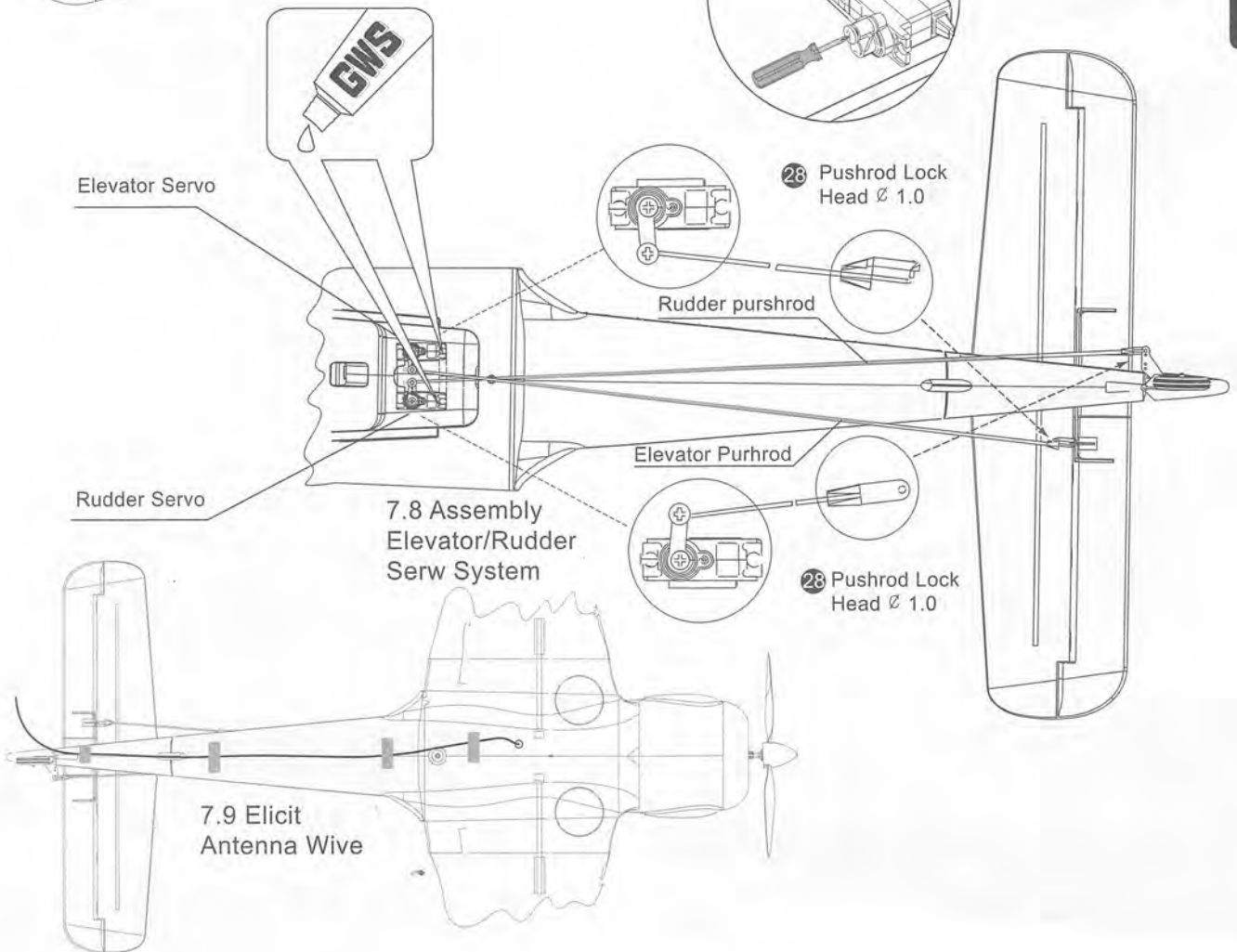


7.3 Attach double - Sided sponge tapes to each servo

7.6 Assembly Aibron Pushrod

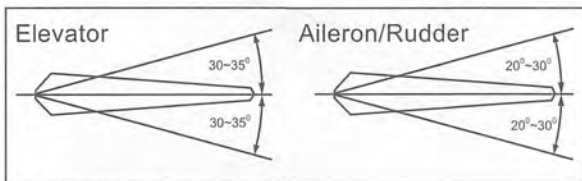
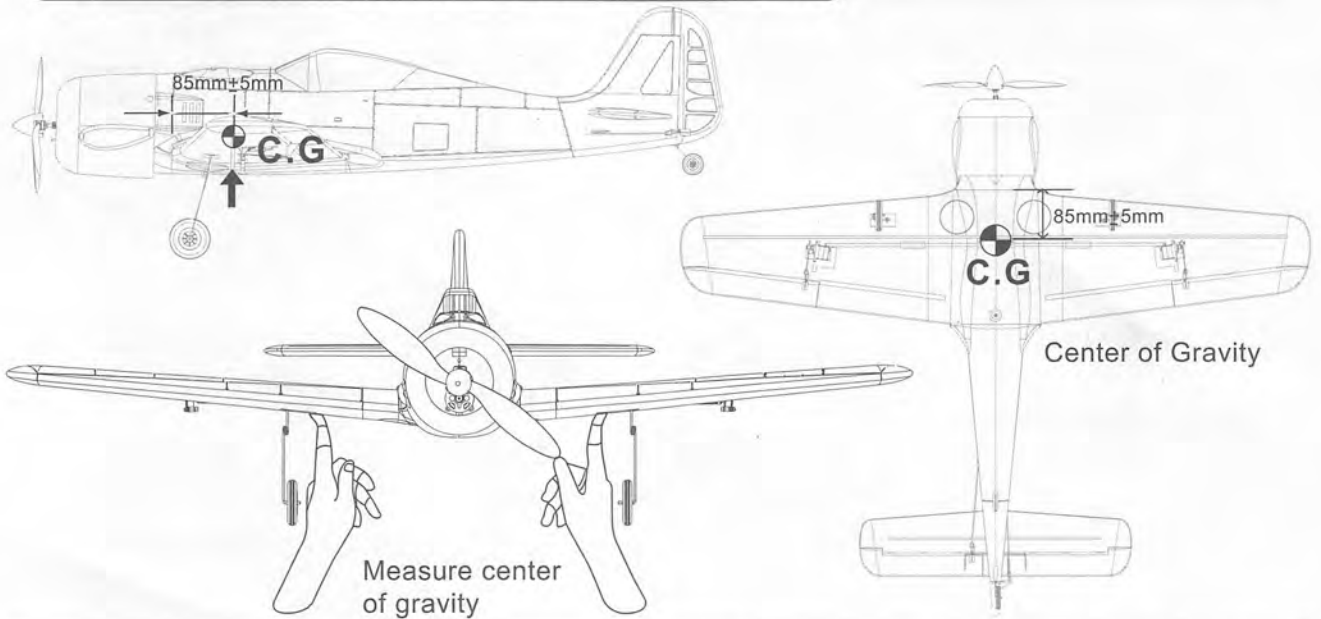


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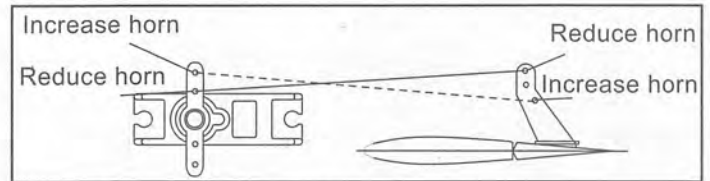


7.9 Elicit Antenna Wive

8. Control Throw and Center of Gravity



Control throw

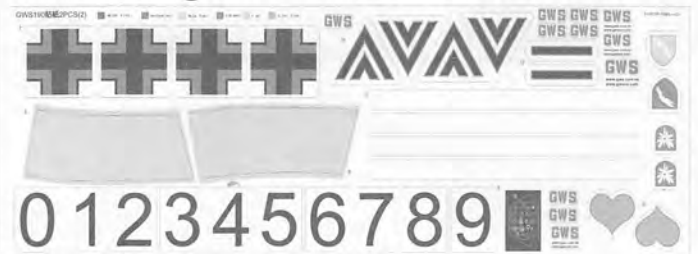
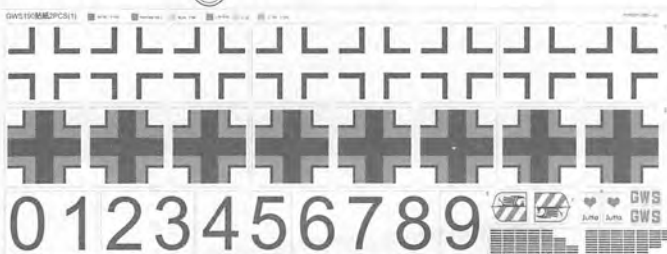
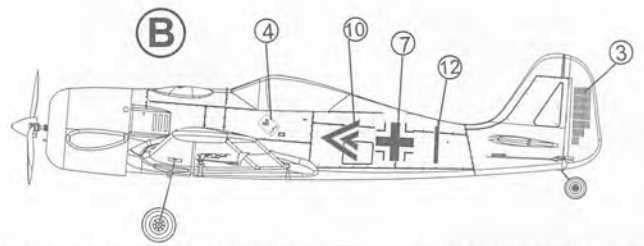
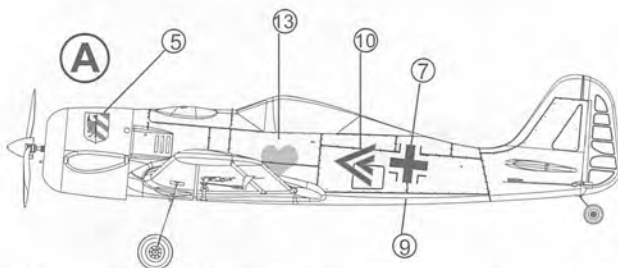
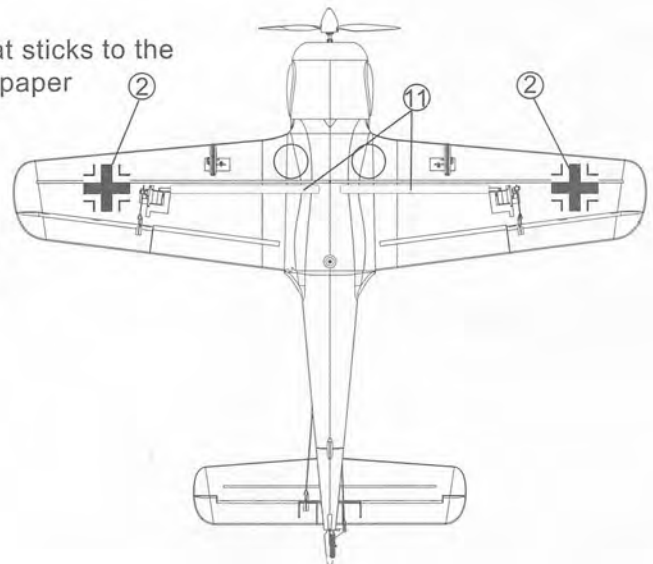
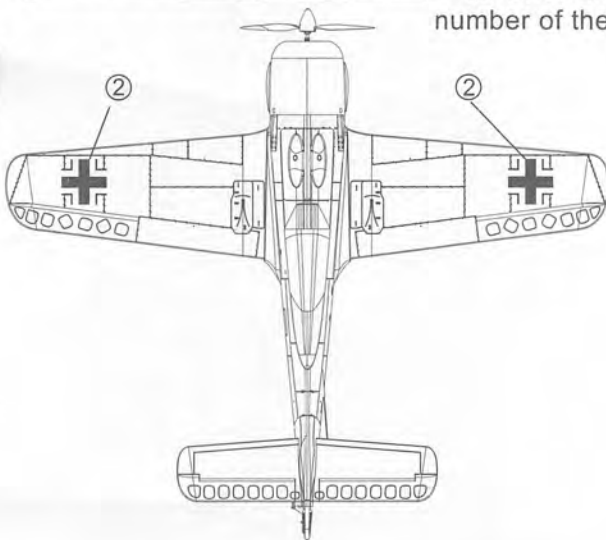


Control angle adjustment

9. 貼紙位置參考

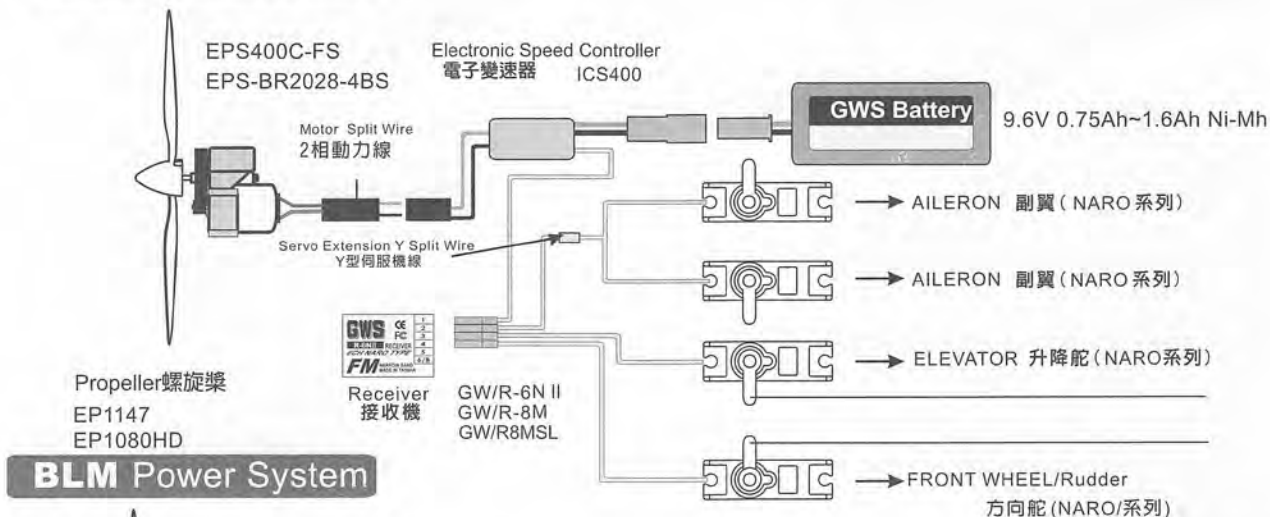
“② Show that sticks to the number of the paper

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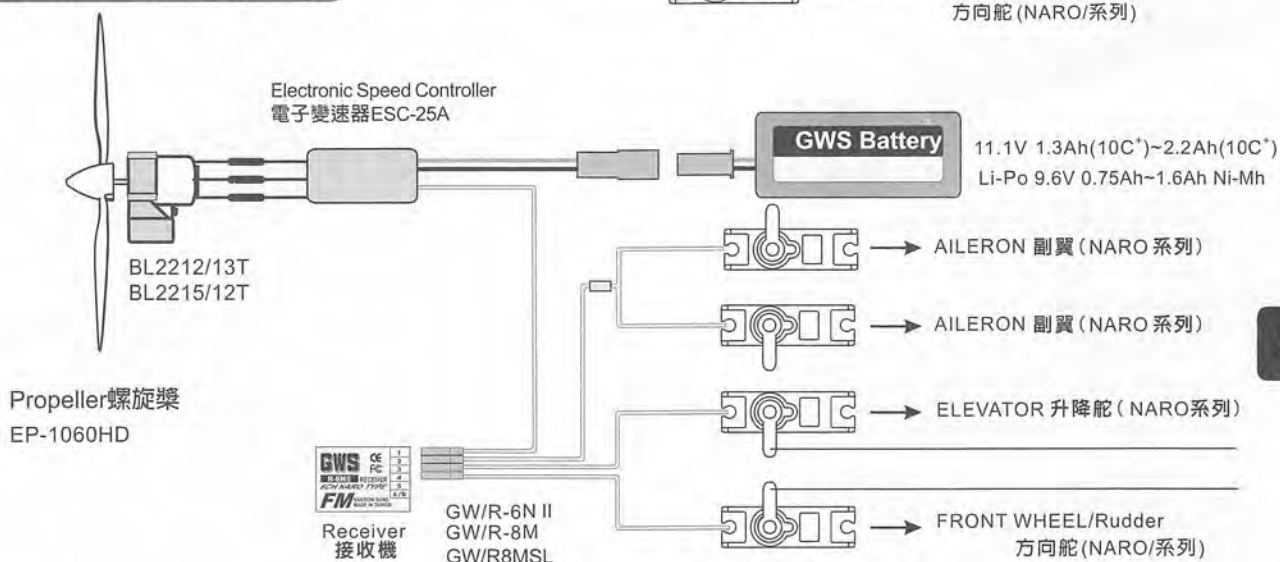


10. Control System Wiring Diagram

EPS Power System



BLM Power System



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飛行注意事項

1. Flying field should be wide-open and free of obstacles; do not fly near power lines or buildings.
2. Flight must take place at approved sites; do not fly in restricted air space.
3. Before each flight, make certain that the radio frequency is open to avoid interference.
4. First time flyers, please seek assistance from experienced flyers.
5. Always choose a flat smooth surface for rolling take-offs.

1. 飛行場所應以空曠無障礙為佳，禁止在高壓電塔或建築物附近（400米以內）飛行。
2. 不得在禁止飛行場所飛行，如飛航管制區、軍事要地等。
3. 飛行前需聲明使用頻率，並詢問有否同頻率，避免相互干擾情況發生。
4. 如無飛行經驗，建議先請有經驗者代為進行首次試飛。
5. 選擇在平坦路面滑跑起飛