

Before start ,please carefully read the explanations!

Cessna 185



Specification:

Length	:1550 mm(61")
Wing Span	:2200 mm(86.6")
Wing Area	:55.3 sq. dm 5.95 sq. ft
Wing Loading	:117.5 g/sq. dm 38.5 oz/sq. ft
Flying Weight	:6.5 kg(14.3 lbs)
Radio	:6ch&9 servos
Engine	:108 2-cycle 120 4-cycle

INSTRUCTION MANUAL



SAFETY PRECAUTIONS


This R/C airplane is not a toy!

(The people under 18 years old is forbidden from flying this model)


First-time builders should seek advice from people having building experience.If misused or abused,it can cause serious bodily injury and damage to property.

Fly only in open areas and preferably at a dedicated R/C flying site. We suggest having a qualified instructor carefully inspect your airplane before its first flight.Please carefully read and follow all instructions included with this airplane,your radio control system and any other components purchased separately.

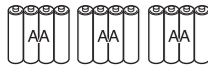
REQUIRED FOR OPERATION (Purchase separately!)

 **CAUTION:** For details concerning the equipment listed below (size, maker, etc.), check with your hobby shop.

1 A minimum 6 channel radio for airplanes (with 9 servos), and dry batteries.

 **CAUTION:** Only use a minimum 6 channel radio for airplanes! (No other radio may be used!)
6 channel radio for airplane is highly recommended for this model.

12 AA-size Batteries



A minimum 6 channel transmitter for airplanes.

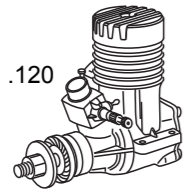
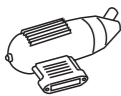


For handling the radio properly, refer to its instruction manual.

2 Engine and Muffler

Model Airplane Engine 4-cycle .120

Muffler



Glow P



3 Propeller Spinner

Purchase a propeller that will match your engine.



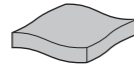
2.5 in Spinner



15"X7

4

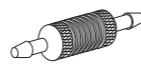
Sponge Sheet



Silicone Tube




Fuel Filter

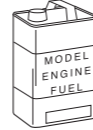


5

Required for engine starting:

 **WARNING:** Normal gasoline cannot be used with glow engines.

Glow engine fuel only.



Fuel Pump



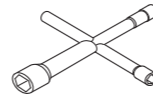
Booster Cord



4 D-size Batteries



Plug Wrench

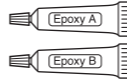


6

Glue Instant Glue



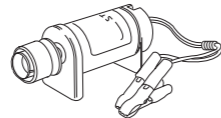
Epoxy Glue



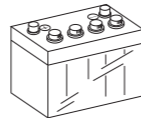
7

Other equipment for enhancing airplane operation & performance

Engine Starter



12V Battery (for starter)



8

Optional parts: rubber wheel with metal hub.

TOOLS REQUIRED (Purchase separately!)

Sharp Hobby Knife



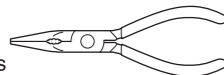
Phillips Screw Driver (l, m, s)



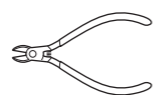
Awl



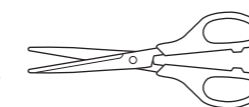
Needle Nose Pliers



Wire Cutters



Scissors












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.

3 Symbols used throughout this instruction manual, comprise:

 Apply epoxy glue.  Drill holes with the specified diameter (2mm).  Cut off excess.  Pay close attention here!

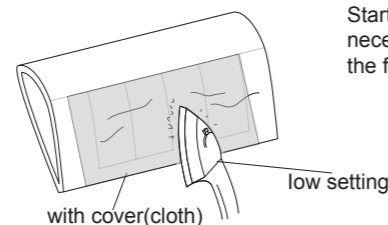
 Apply instant glue (CA glue, super glue).  Cut off shade portion.  Ensure smooth non-binding movement while assembling.  Assemble left and right sides the same way.  Must be purchased separately!

Do not overlook this Symbol!



Warning
Remove the covering with proper pressure to cut through only the covering itself. Otherwise, cutting down into the balsa structure may weaken the model part and cause accident.

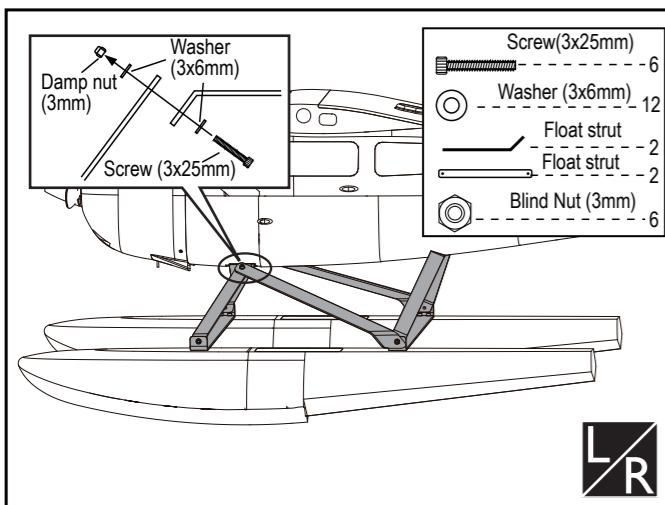
The pre-covered film on ARF kits may wrinkle due to variations of temperature. Smooth out as explained right.



► Pre-cover the covering with clean cloth!
Start at low setting. Increase the setting if necessary. If it is too high, you may damage the film.

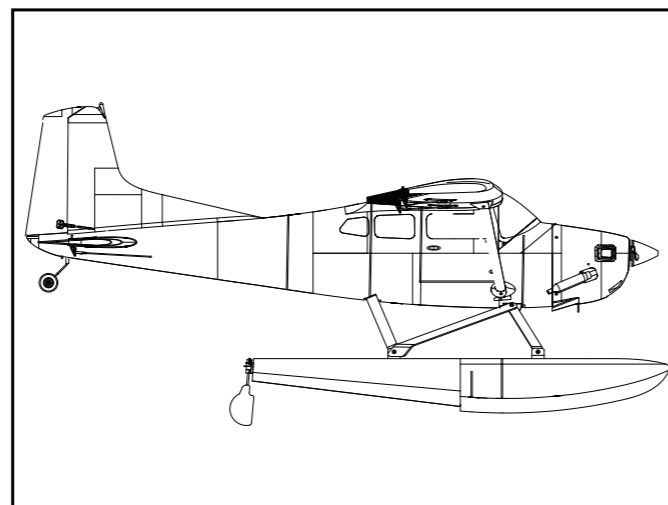
78

Float struts assembly.



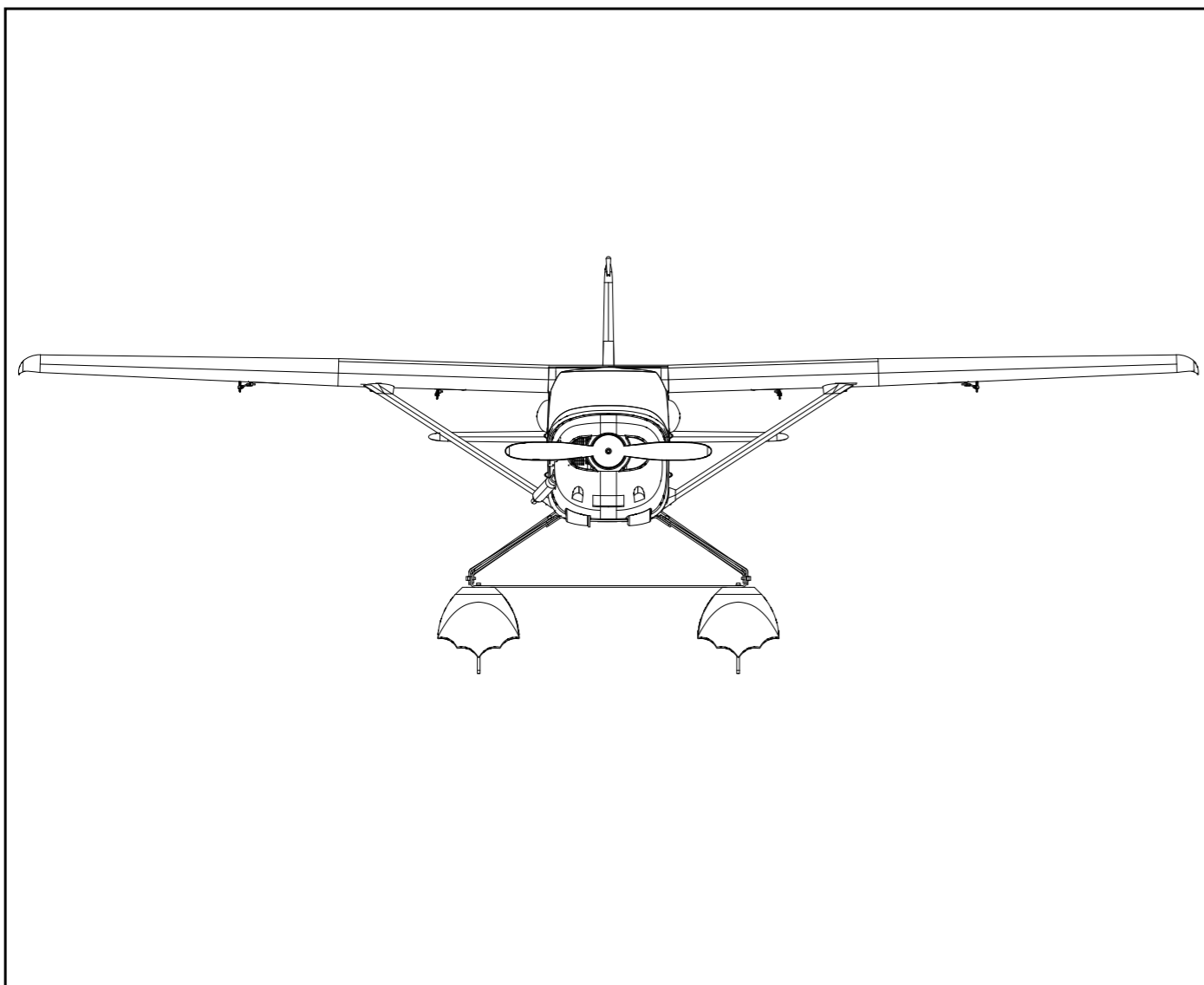
79

The side view of the Cessna 185 seaplane.



80

The front view of the Cessna 185 seaplane.

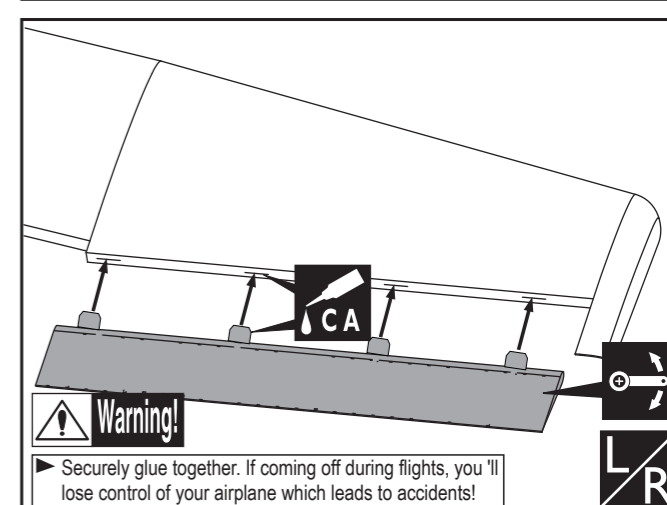


Accessory list for the coming installation steps.

- Clevis 2
- Retainer 2
- Rod (2x300mm) 2
- TP Screw (2.3x12mm) 8
- Screw (3x35mm) 2
- Servo tray(68.5x56.5x2mm) 4
- Wooden Block(20x20x8mm) 4
- Pin hinge(24x24mm) 8
- Washer(3x15mm) 2
- Lock Nut (3mm) 2
- Washer(3x15mm) 2

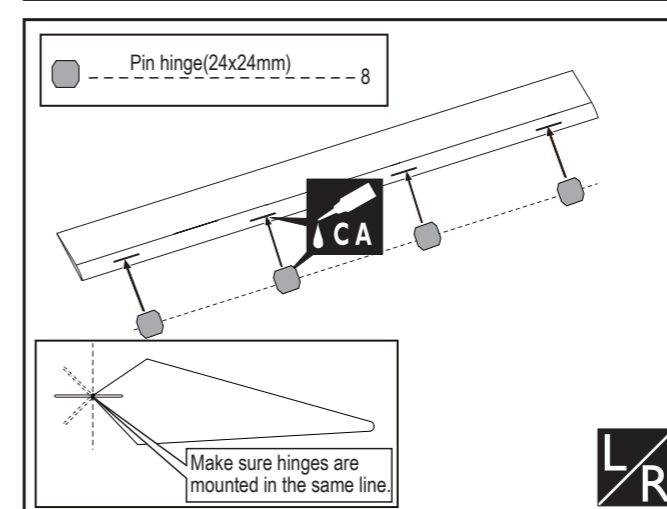
3

Assemble the aileron to main wing with instant type CA glue.



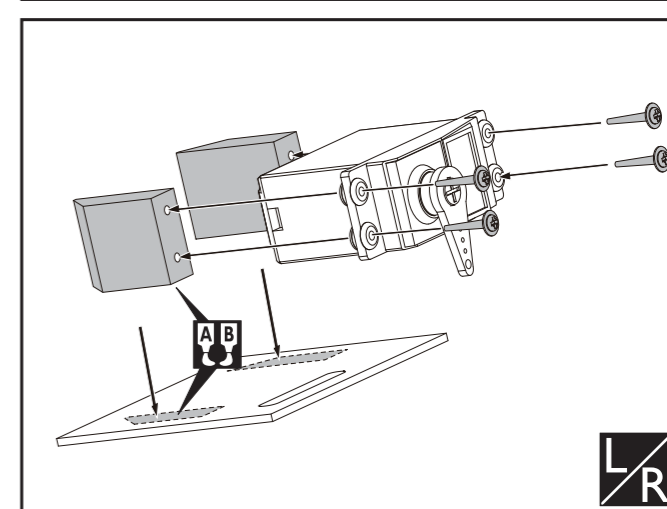
1

Apply instant type CA glue to aileron and pin hinge.



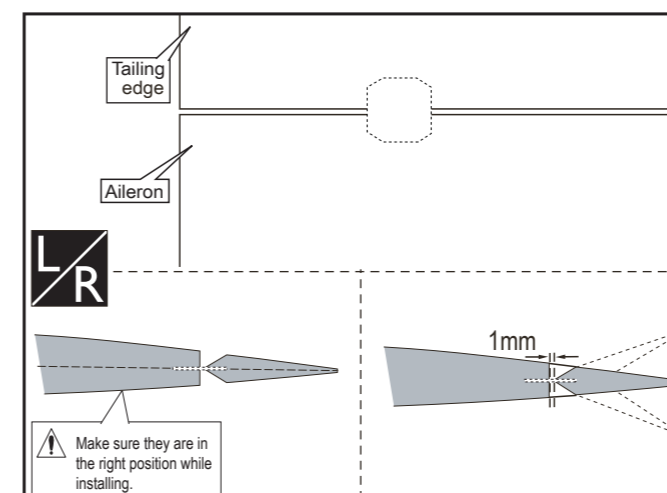
4

Install the servo as the illustration below.



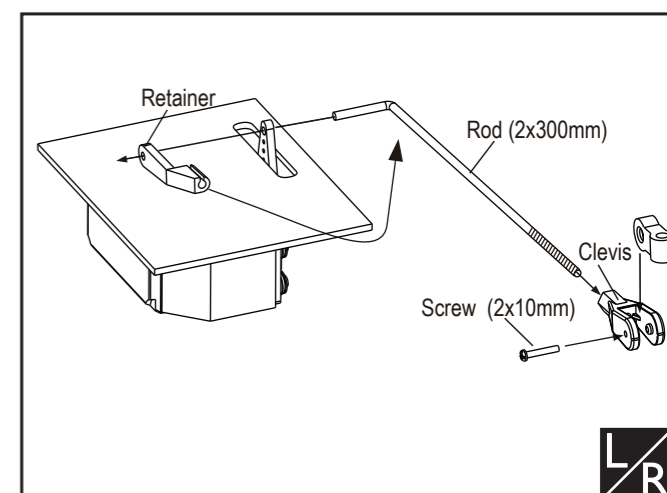
2

Keep some space about 1mm width between aileron and trailing edge and aileron.



5

Install the nylon control horn and connect the linkage.



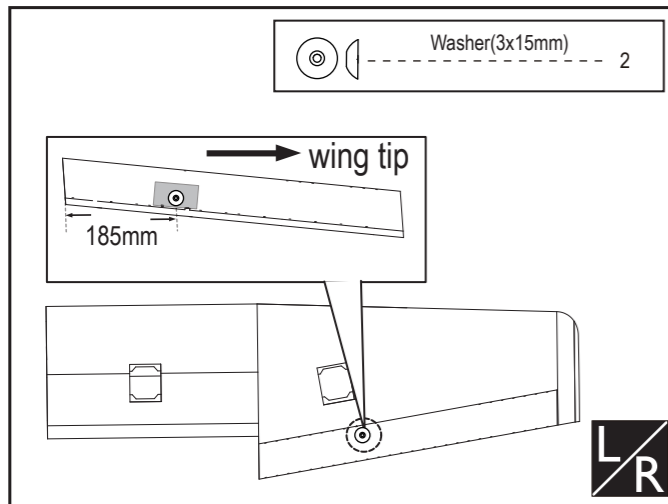
AB Apply epoxy glue. **LR** Assemble left and right sides the same way. **Hand** Pay close attention here! **Warning!** Do not overlook this symbol!

CA Apply instant glue (CA glue, super glue). **Wrench** Ensure smooth non-binding movement while assembling. **Scissors** Cut off shaded portion.

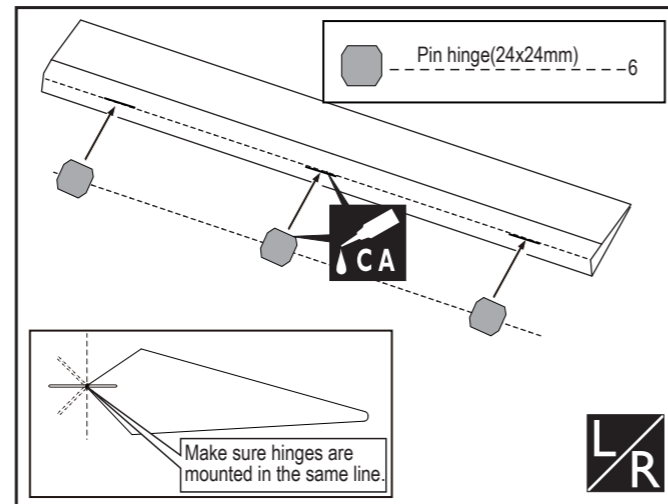
AB Apply epoxy glue. **LR** Assemble left and right sides the same way. **Hand** Pay close attention here! **Warning!** Do not overlook this symbol!

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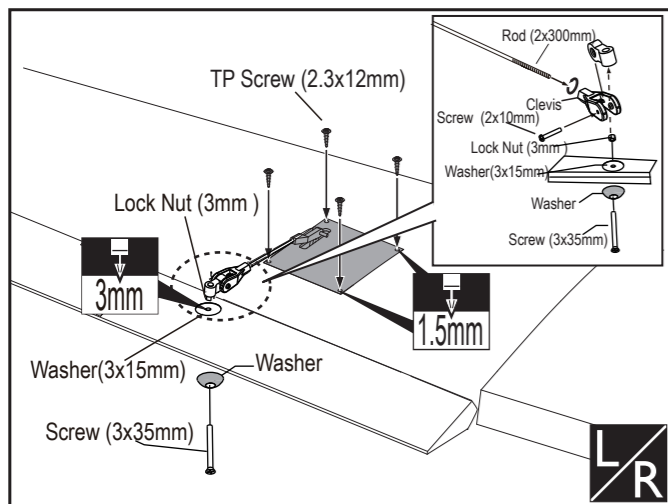
6 The position of the aileron control horn



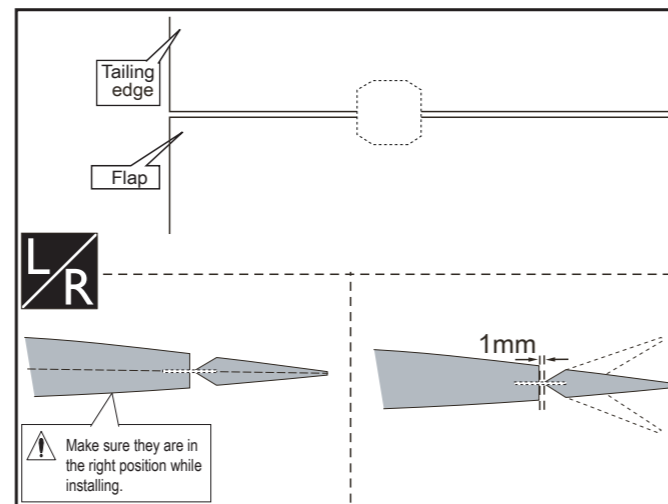
8 Apply instant type CA glue to flap and pin hinge.



7 Secure the servo. Install the nylon control horn and connect the linkage.



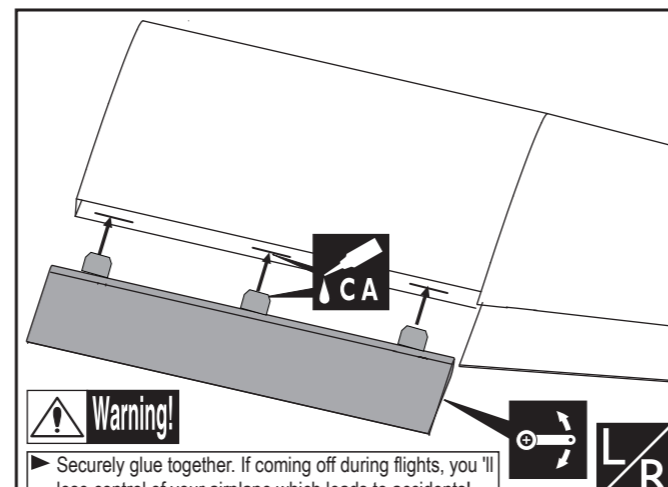
9 Keep some space about 1mm with between the tailing edge and flap.



Warning! Accessory list for the coming installation steps.

- Clevis ----- 2
- Retainer ----- 2
- Rod (2x300mm) ----- 2
- TP Screw (2.3x12mm) ----- 8
- Screw (3x35mm) ----- 2
- Servo tray(68.5x56.5x2mm) ----- 4
- Wooden Block(20x20x8mm) ----- 4
- Pin hinge(24x24mm) ----- 6
- Washer(3x15mm) ----- 2
- Lock Nut (3mm) ----- 2
- Washer(3x15mm) ----- 2

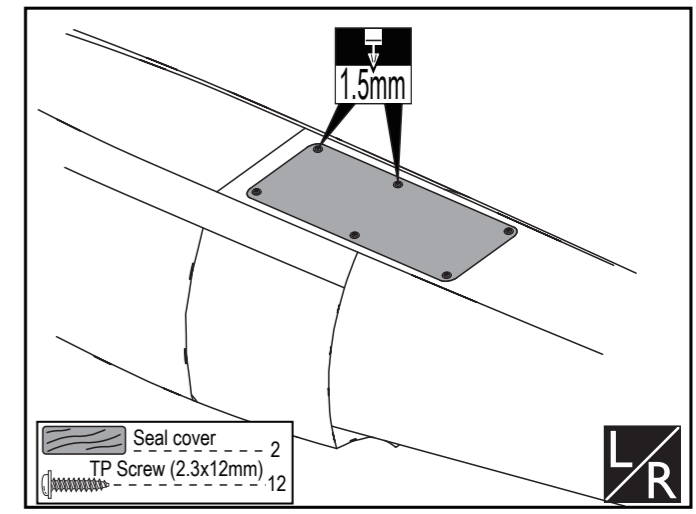
10 Assemble the flap to main wings with instant type CA glue.



Assemble the floats

Thank you for purchasing ESM'S products. When we designed this model we have fore considered some of our customers who loves fly it with floats. So we have provided floats as Optional parts. Please be kind to find the floats installation diagram below.

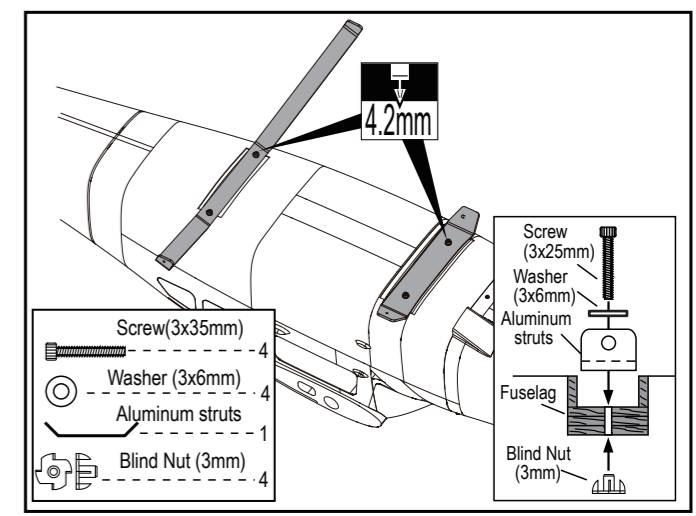
75 Mount the seal cover.



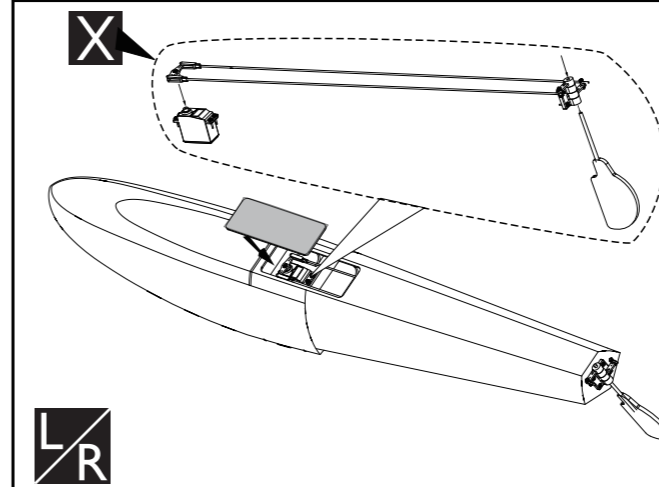
Warning! Accessory list for the coming installation steps.

- Seal cover ----- 2
- TP Screw (2.3x12mm) ----- 12
- Washer (3x6mm) ----- 24
- Damp nut (3mm) ----- 6
- Blind Nut (3mm) ----- 4
- TP Screw (2.6x14mm) ----- 8
- Screw (3x25mm) ----- 6
- Screw (3x35mm) ----- 4
- Float strut ----- 2
- Float strut ----- 2
- Float strut ----- 1
- Float strut ----- 2
- Float strut ----- 2

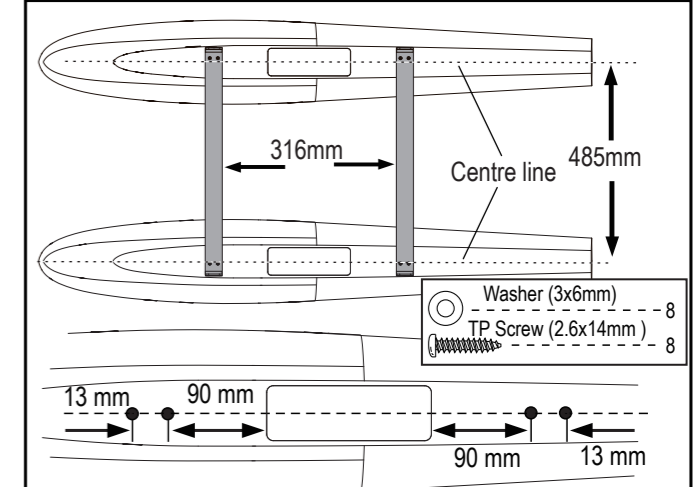
76 Float struts assembly.



74 This step for option.



77 Float struts assembly.



AB Apply epoxy glue. **LR** Assemble left and right sides the same way. **Hand icon** Pay close attention here! **Warning!** Do not overlook this symbol!

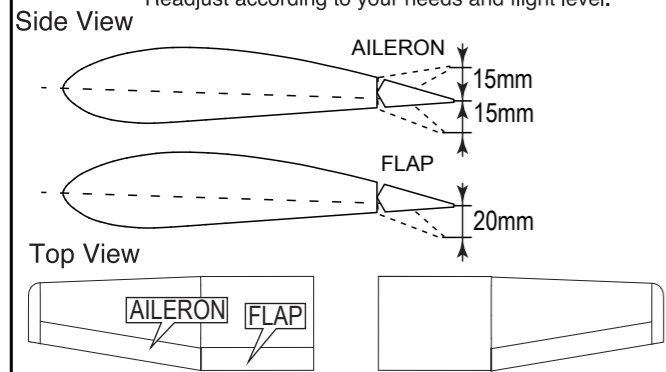
CA Apply instant glue (CA glue, super glue). **Arrow icon** Ensure smooth non-binding movement while assembling. **Scissors icon** Cut off shaded portion.

AB Apply epoxy glue. **LR** Assemble left and right sides the same way. **Hand icon** Pay close attention here! **Warning!** Do not overlook this symbol!

CA Apply instant glue (CA glue, super glue). **Arrow icon** Ensure smooth non-binding movement while assembling. **Scissors icon** Cut off shaded portion.

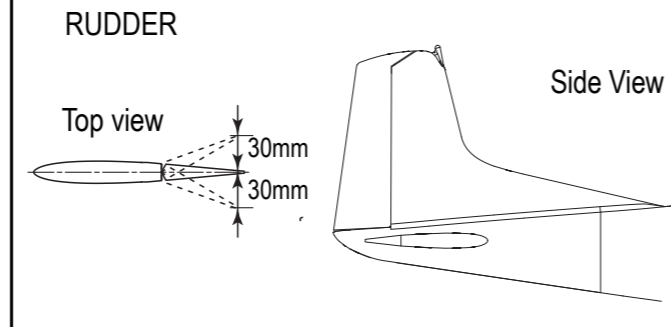
71 Adjustment.

- Adjust the travel of each control surface to the values in the diagrams. These values fit general flight capabilities. Readjust according to your needs and flight level.



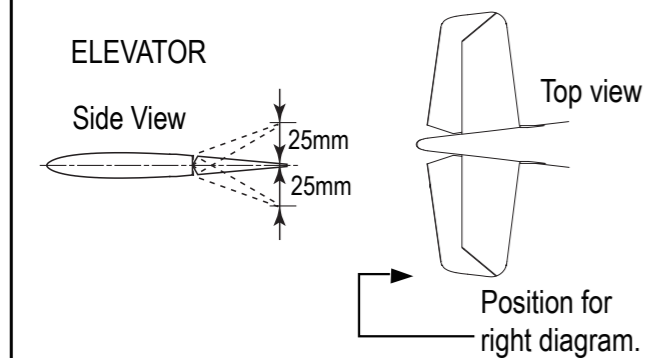
72 Adjustment.

- Adjust the travel of each control surface to the values in the diagrams. These values fit general flight capabilities. Readjust according to your needs and flight level.



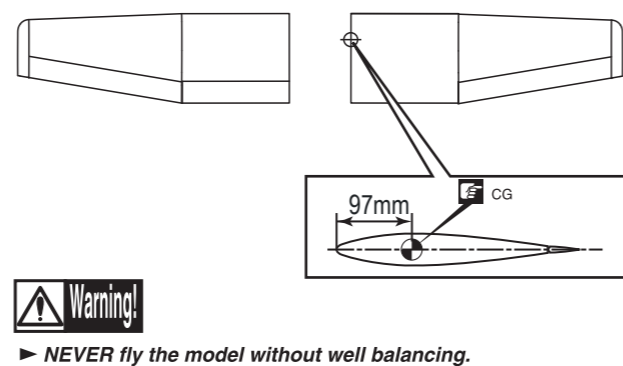
73 Adjustment.

- Adjust the travel of each control surface to the values in the diagrams. These values fit general flight capabilities. Readjust according to your needs and flight level.

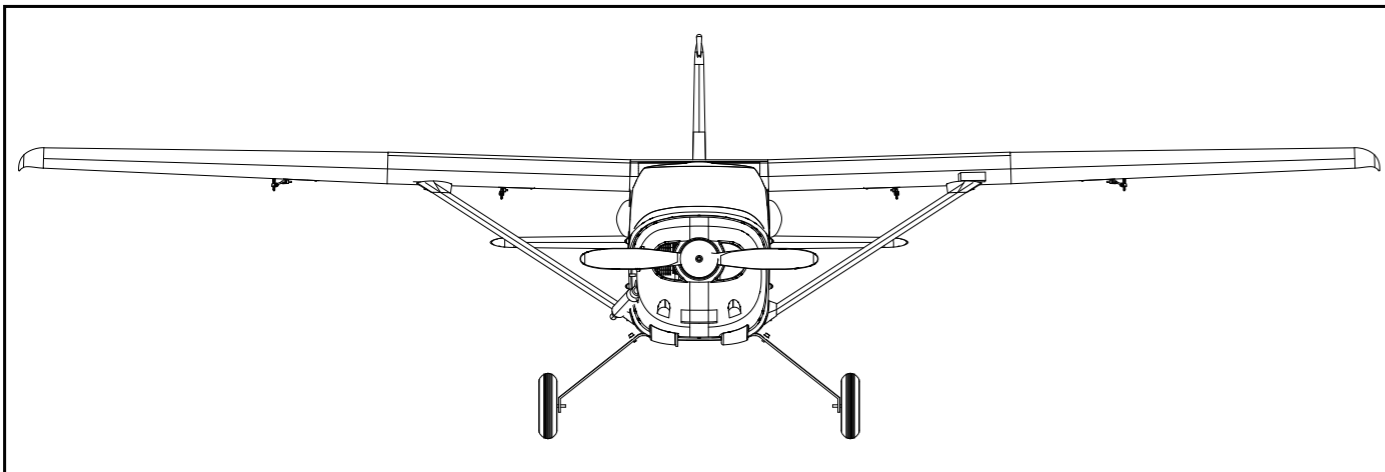


74 Centre of Gravity.

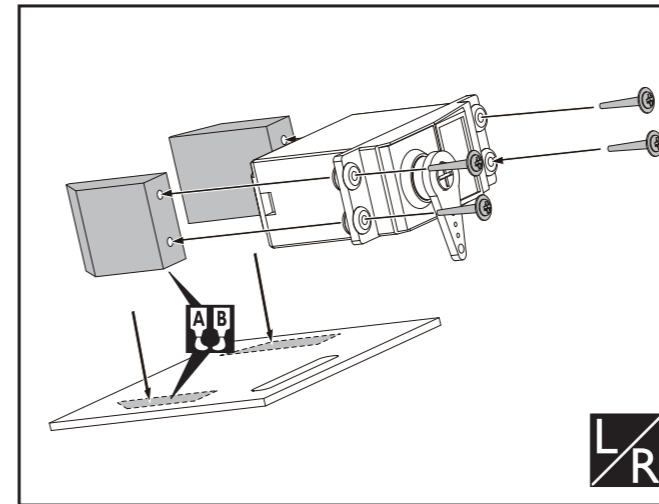
- Never fly before checking the CG's required position. In order to obtain the CG specified, reposition the receiver and battery.



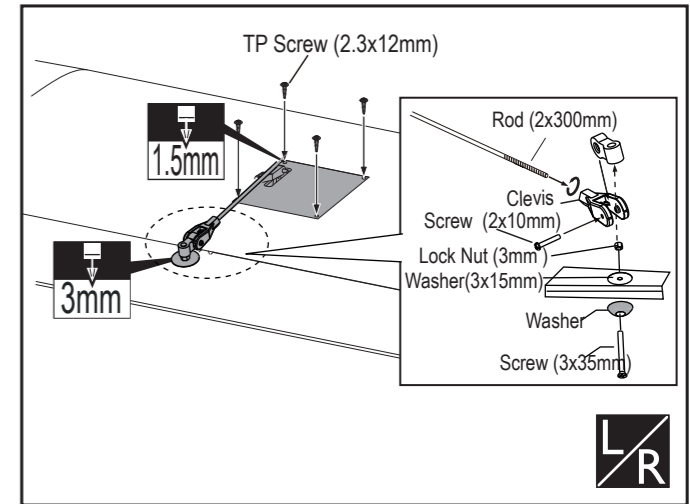
75 The front view when the kit install completion.



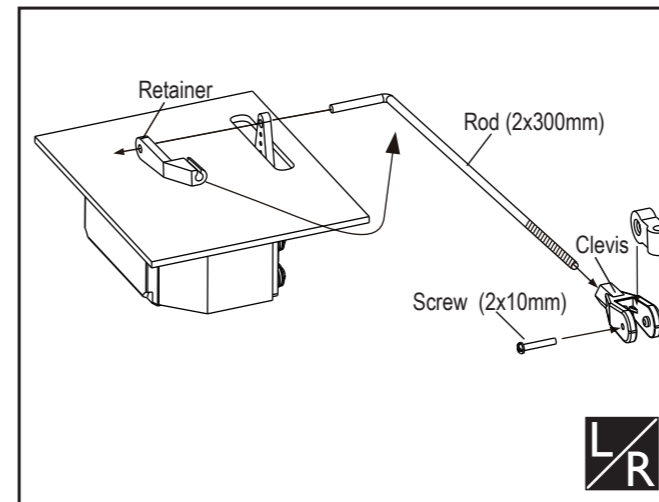
11 Install the servo.



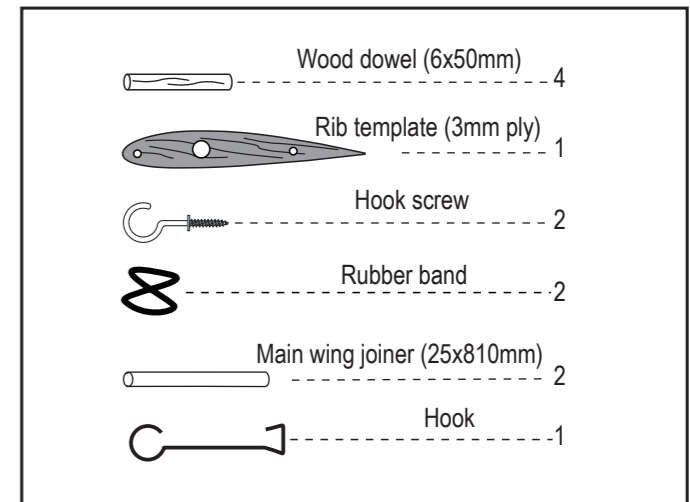
14 Secure the flap servo. Install the nylon control horn and connect the linkage.



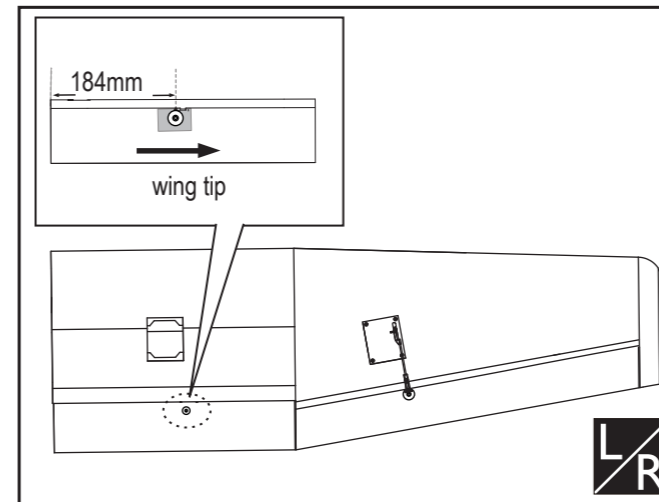
12 Install the nylon control horn and connect the linkage.



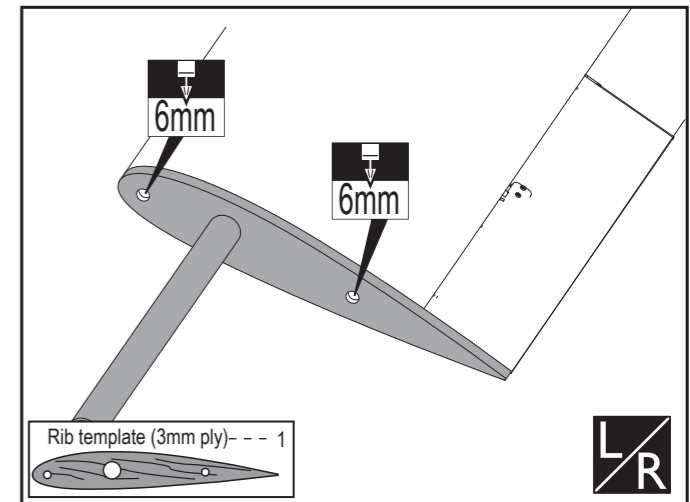
Accessory list for the coming installation steps.



13 The position of the control horn for the flap.



15 According the rib template to drill two holes on the wings as below.



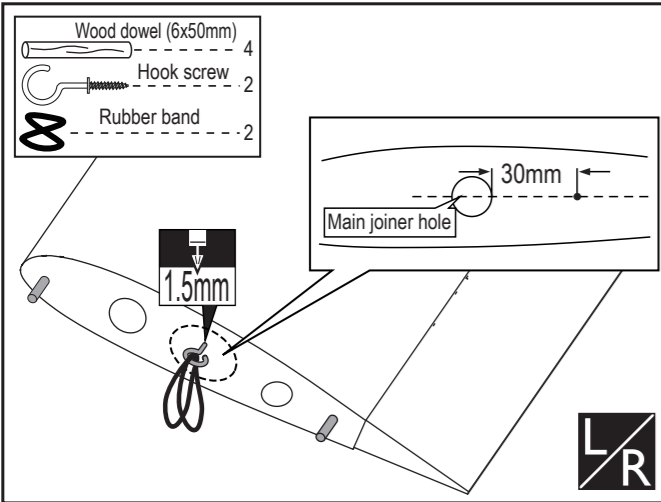
Apply epoxy glue.
 Assemble left and right sides the same way.
 Pay close attention here!
 Do not overlook this symbol!

Apply instant glue (CA glue, super glue).
 Ensure smooth non-binding movement while assembling.
 Cut off shaded portion.

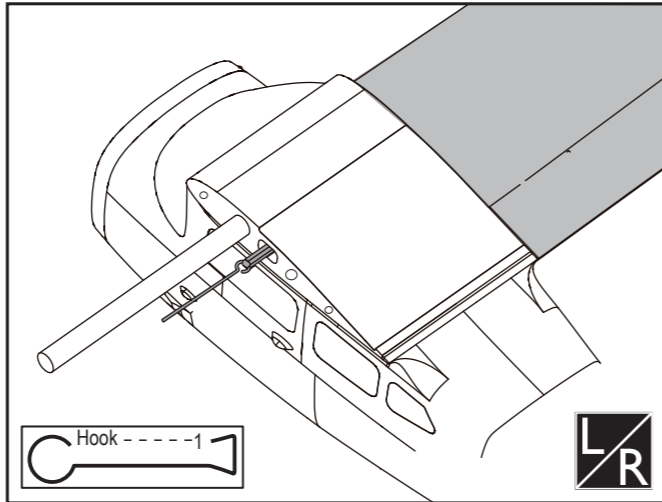
Apply epoxy glue.
 Assemble left and right sides the same way.
 Pay close attention here!
 Do not overlook this symbol!

Apply instant glue (CA glue, super glue).
 Ensure smooth non-binding movement while assembling.
 Cut off shaded portion.

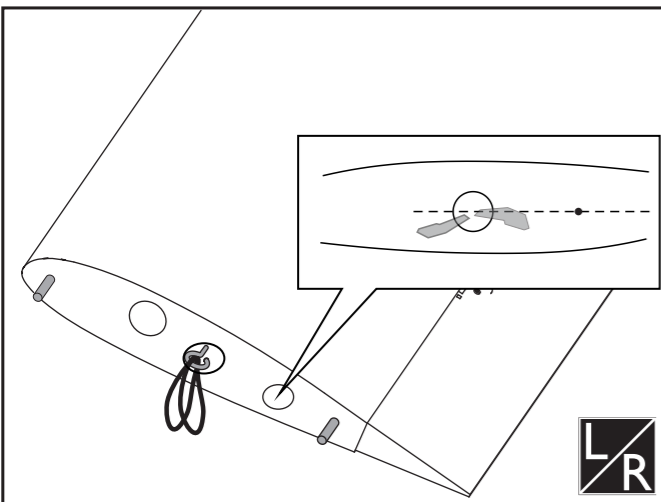
16 Epoxy the wood dowels in the holes and set the hook screws to appropriate position



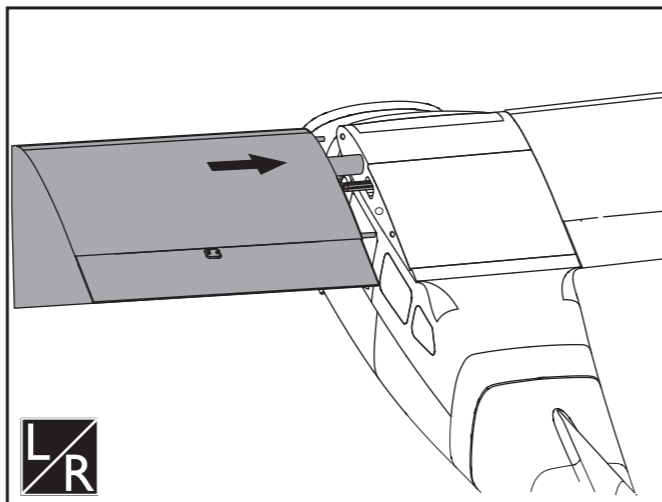
19 Assemble the wing to fuselage and draw out the rubber band with hook from fuselage as below.



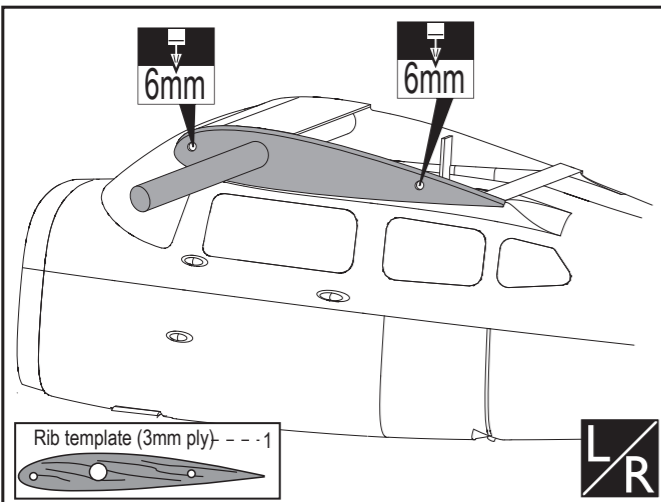
17 Fetching out the servo line and air pipe.



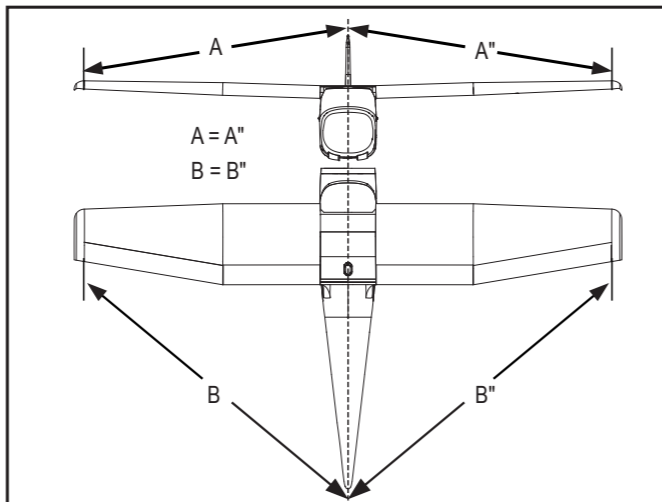
20 Fasten another wing with the rubber band.



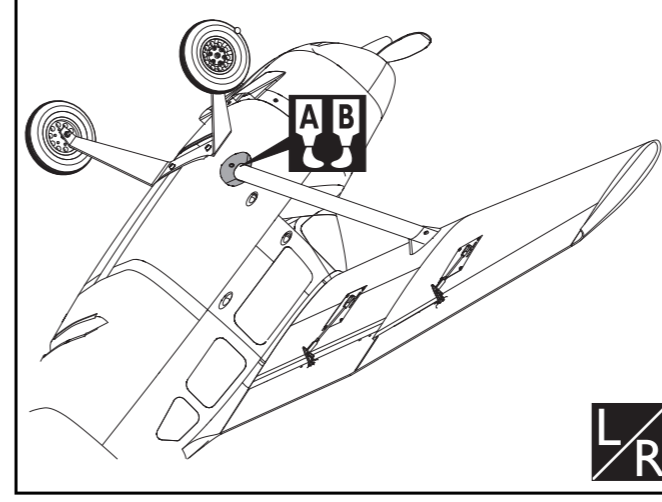
18 According the rib template drill two holes in the fuselage.



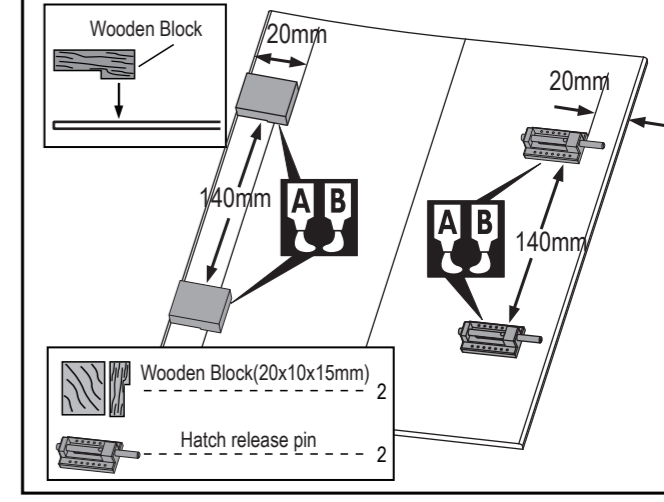
21 Assembly of main wing.



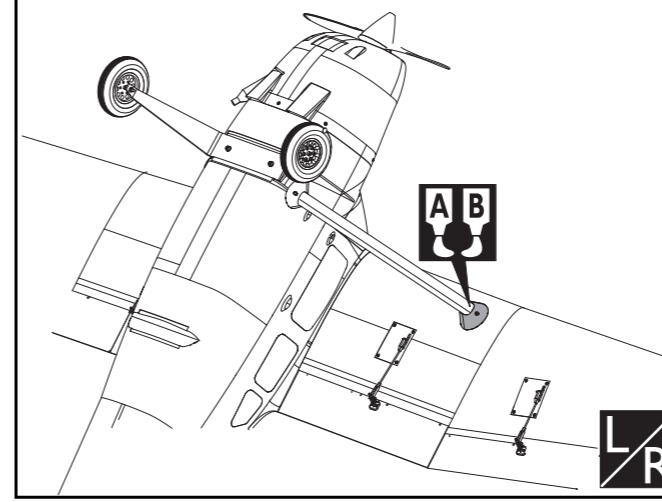
67 Epoxy the strut cover around the wing strut in the fuselage and take care to keep the fuselage clean.



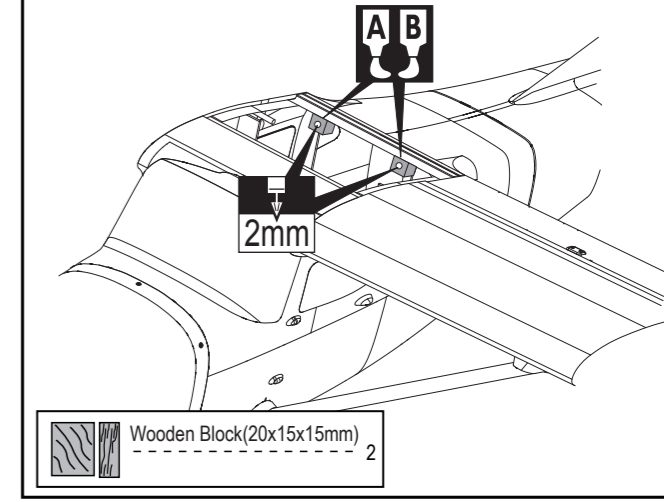
68 Epoxy wooden block and thinbles inside hatch cover.



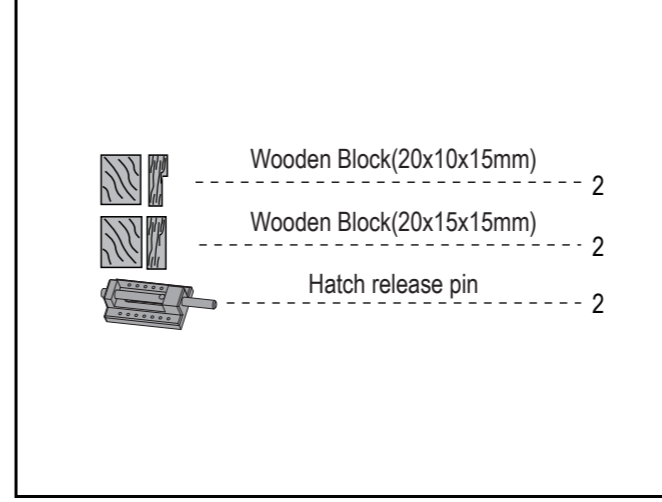
66 Epoxy the strut cover around the wing strut in the fuselage and take care to keep the wing clean.



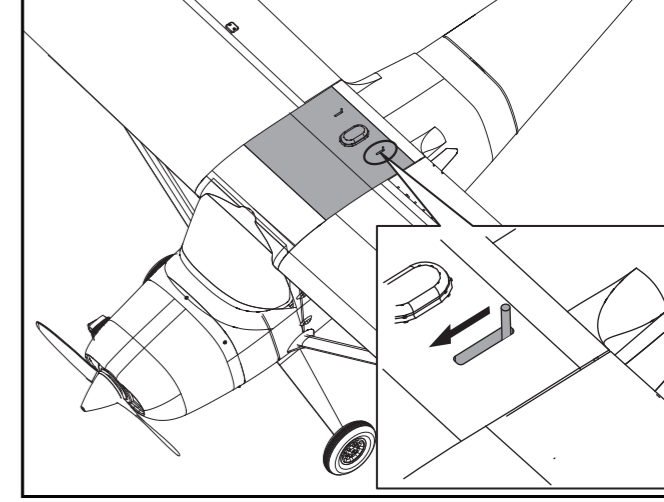
69 Epoxy wooden block to appropriate position inside fuselage and drill a hole in each of them.



Warning! Accessory list for the coning installation steps.



70 Mount hatch cover to fuselage.



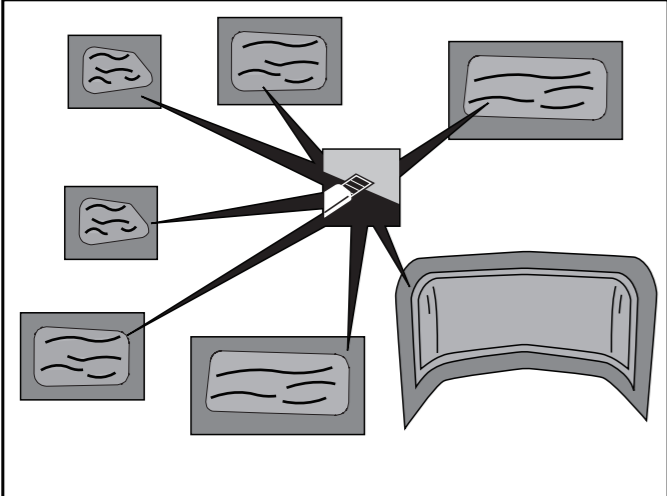
AB Apply epoxy glue. **L/R** Assemble left and right sides the same way. **Hand icon** Pay close attention here! **Warning!** Do not overlook this symbol!

CA Apply instant glue (CA glue, super glue). **Arrow icon** Ensure smooth non-binding movement while assembling. **Scissors icon** Cut off shaded portion.

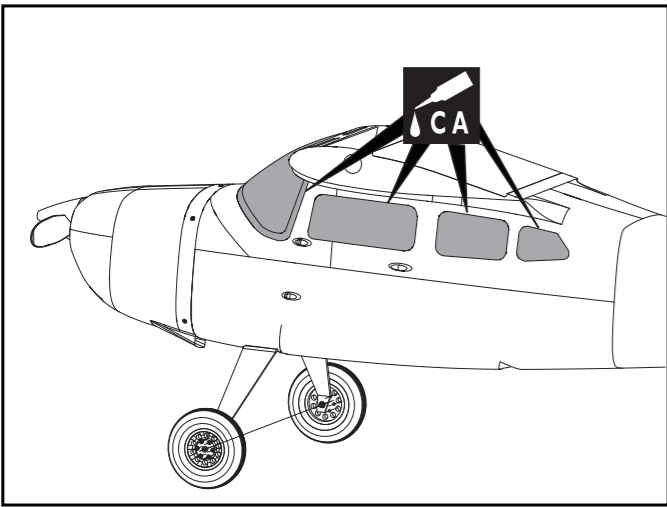
AB Apply epoxy glue. **L/R** Assemble left and right sides the same way. **Hand icon** Pay close attention here! **Warning!** Do not overlook this symbol!

CA Apply instant glue (CA glue, super glue). **Arrow icon** Ensure smooth non-binding movement while assembling. **Scissors icon** Cut off shaded portion.

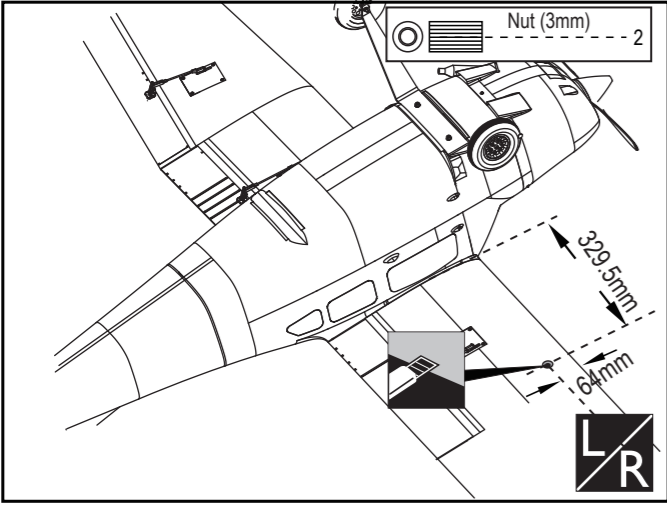
60 Cut away the surplus parts of plastic cover carefully along the shaded line.



61 Glue windows to openings on fuselage.



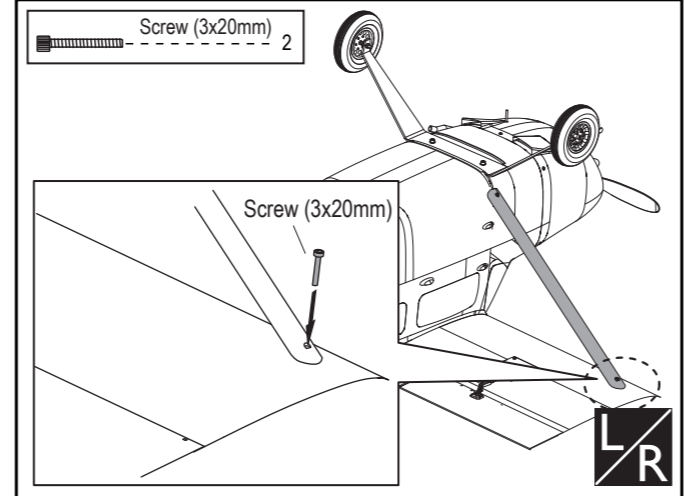
62 Find out the marked position in the wing and drill a hole, set nut in it.



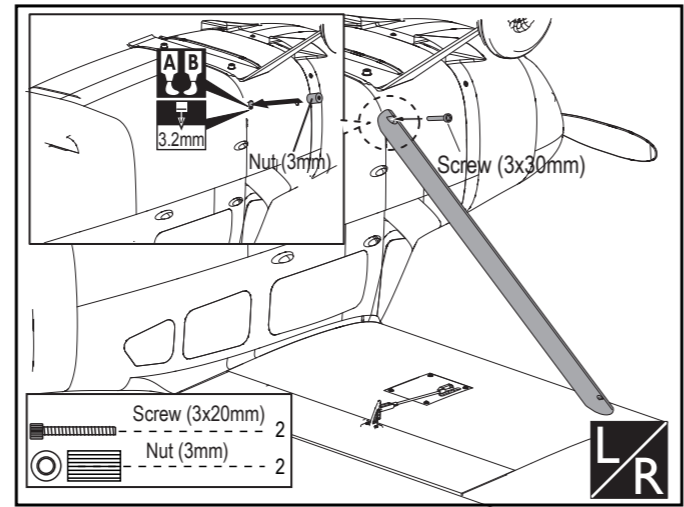
AB Apply epoxy glue. **LR** Assemble left and right sides the same way. **Hand icon** Pay close attention here! **Warning!** Do not overlook this symbol!

CA Apply instant glue (CA glue, super glue). **Hand icon** Ensure smooth non-binding movement while assembling. **Hand icon** Cut off shaded portion.

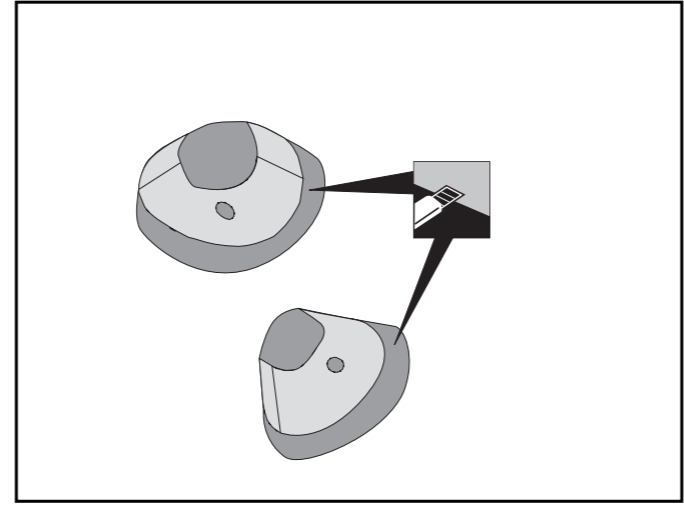
63 Fix one side of the strut with screw.



64 Find out the marked position in the fuselage, drill a hole, set nut in it and fix the wing strut.



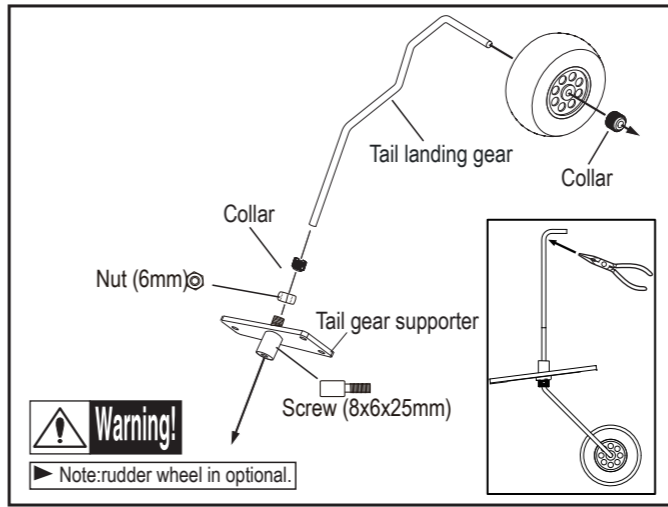
65 Cut away surplus part along the shaded area carefully.



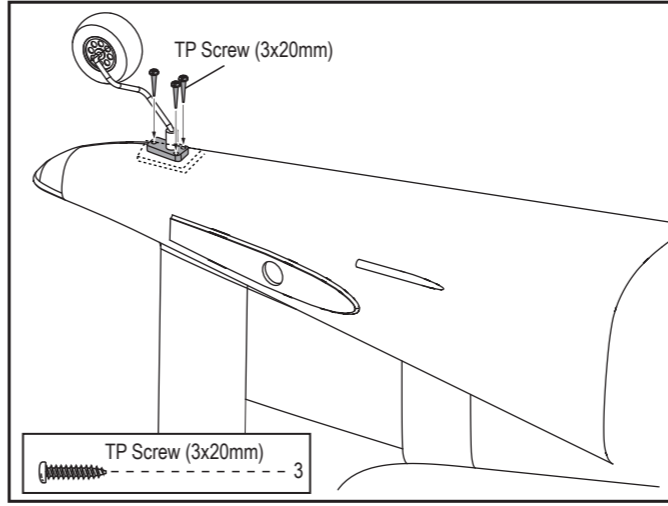
Warning! Accessory list for the coming installation steps.

- Tail landing gear(3mm) -----1
- Tail gear supporter(14x2 2x25mm) -----1
- Screw (8x6x25mm) -----1
- Nut (6mm) -----1
- Tail wheel (45mm) -----1
- Collar (3mm) -----2
- TP Screw (2.6x14mm) -----3
- Pin hinge(24x24mm) -----9
- Stab joiner (16x260mm) -----1
- Wooden dowel (4x30mm) -----4
- Rib template (3mm ply) -----1

22 Assemble the wheel to the tail landing gear.



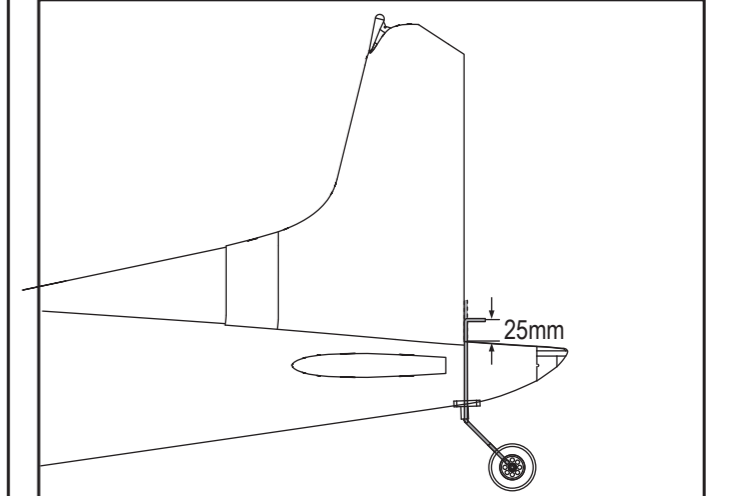
23 Install the tail landing gear.



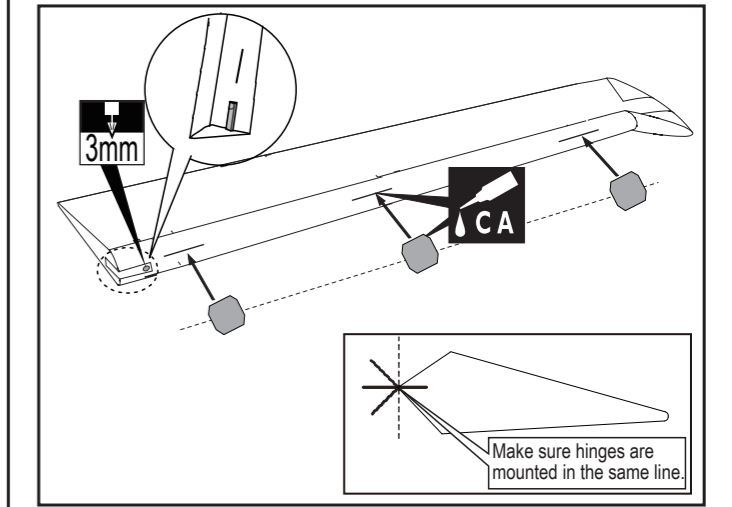
AB Apply epoxy glue. **LR** Assemble left and right sides the same way. **Hand icon** Pay close attention here! **Warning!** Do not overlook this symbol!

CA Apply instant glue (CA glue, super glue). **Hand icon** Ensure smooth non-binding movement while assembling. **Hand icon** Cut off shaded portion.

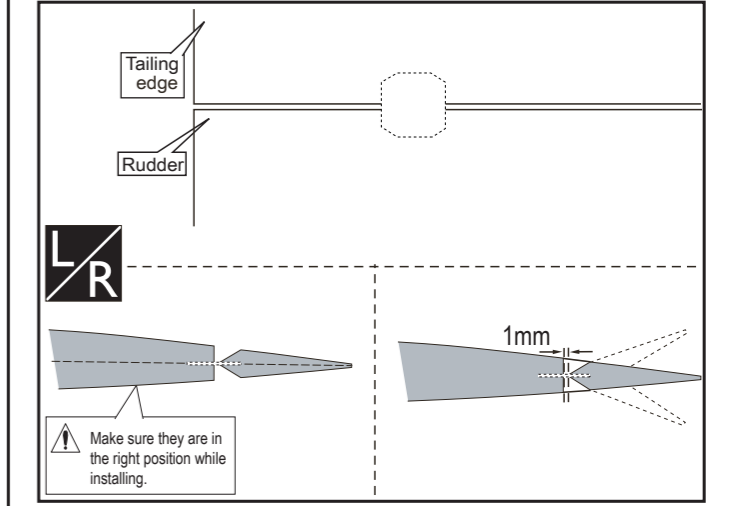
24 Bend tail gear wire to attach rudder.



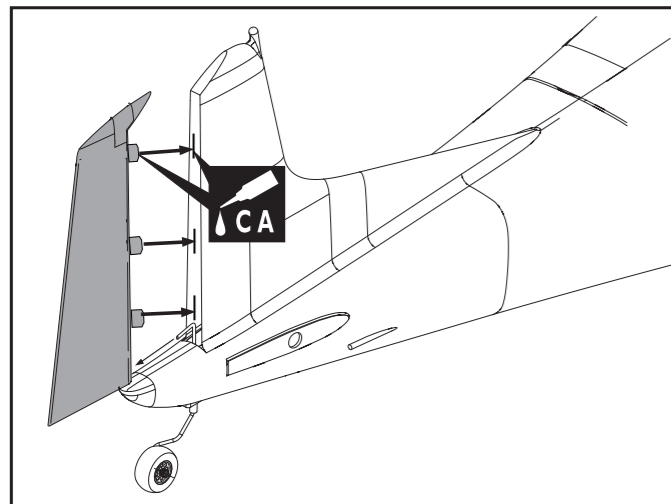
25 Apply instant type CA glue to rudder and pin hinge.



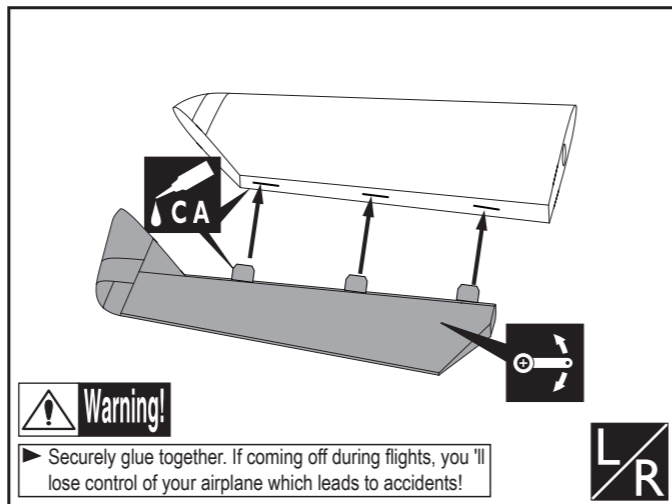
26 Keep some space with 1mm width between tailing edge and rudder as below.



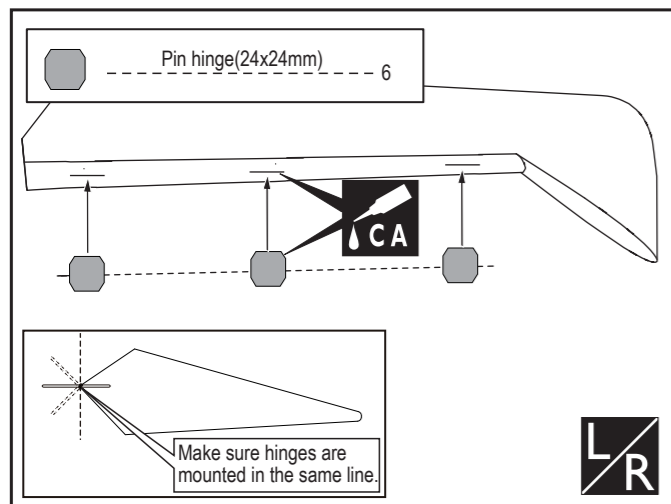
27 Assemble the rudder to the vertical tail with CA glue.



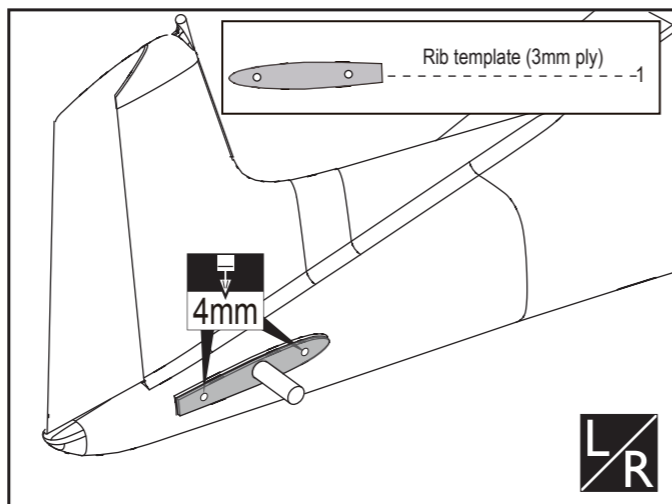
30 Assemble the elevator to the horizontal tail with CA glue.



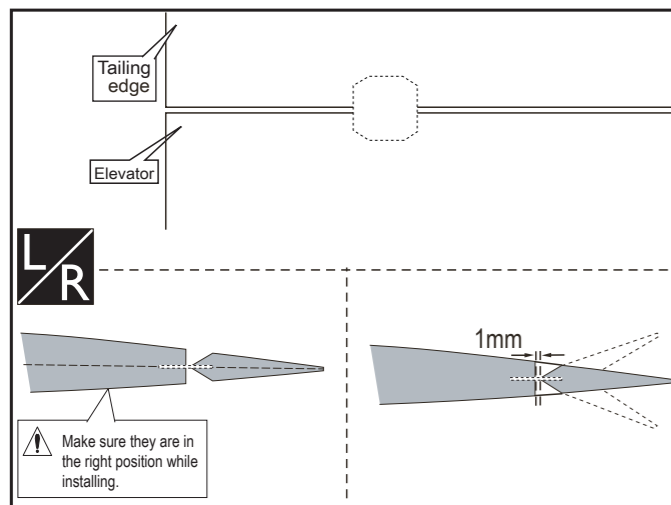
28 Apply instant type CA glue to elevator and pin hinge.



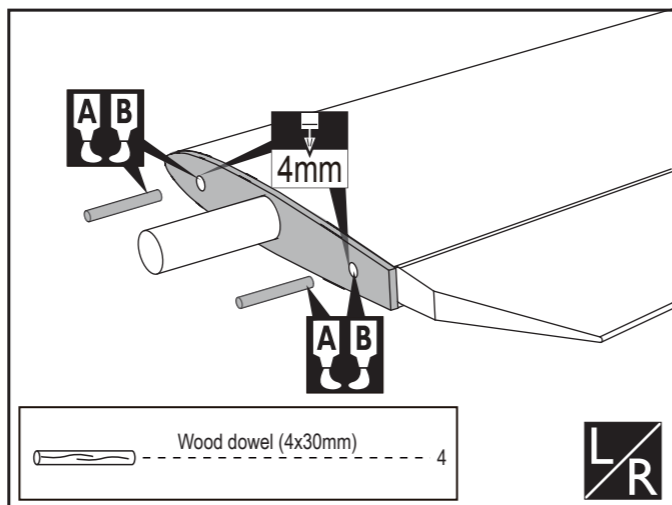
31 According to the rib template drill holes to the tail of fuselage as below.



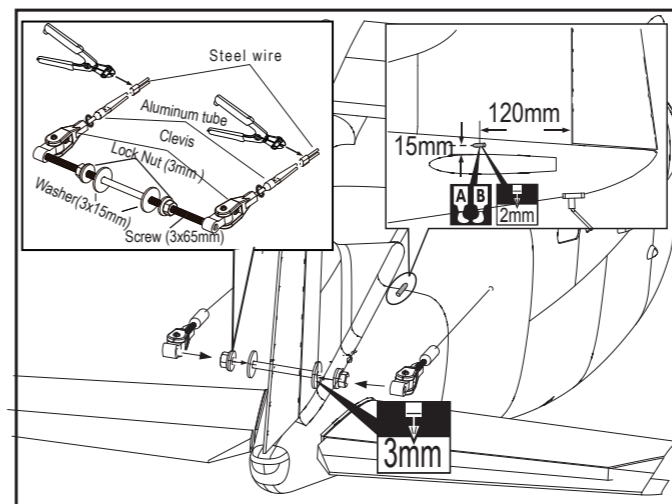
29 Keep some space with 1mm width between tailing edge and elevator as below.



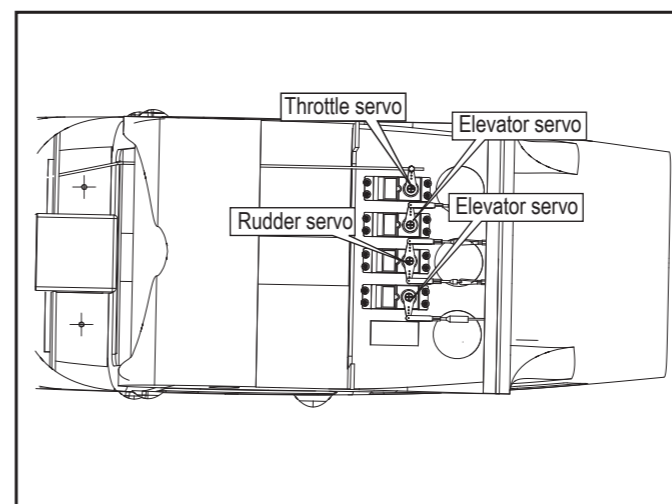
32 Drill two holes at the stabilizer root base on rib template and epoxy the metal dowel in them.



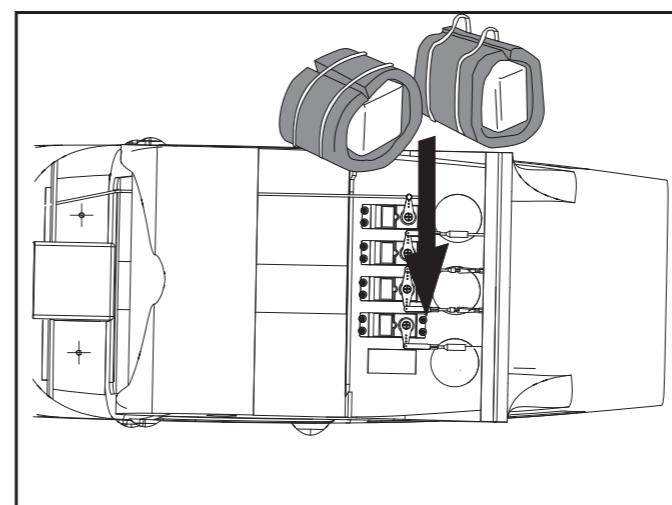
55 Connect the linkage rod to the horn.



56 The sketch map of the servos install completion in the fuselage.



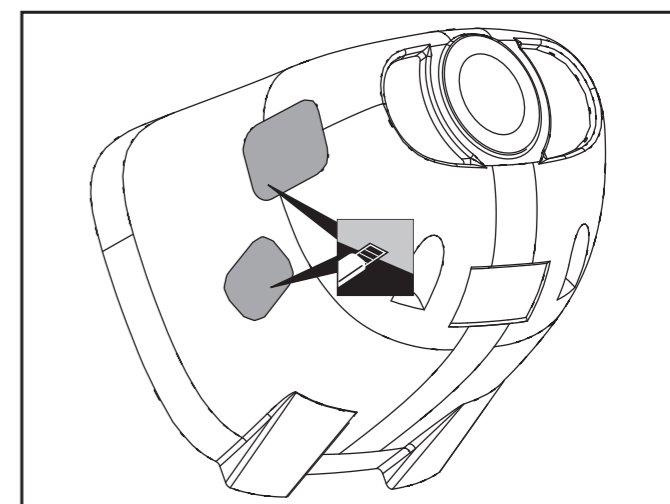
57 Mounting of the receiver and the battery.



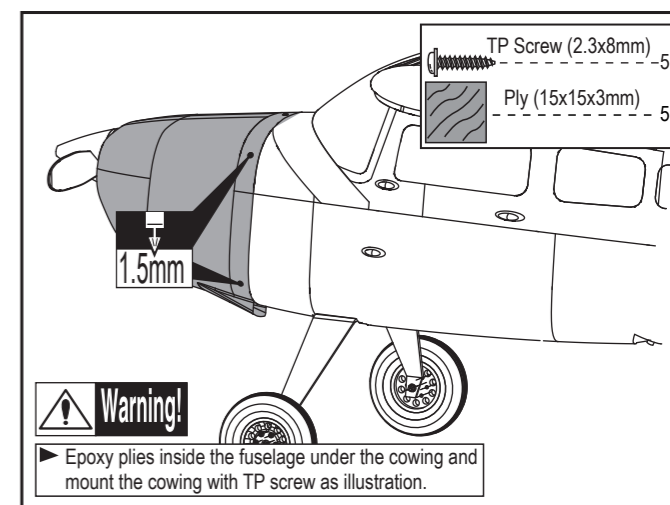
Accessory list for the coming installation steps.

	PVC part	1		PVC part	2
	PVC part	2		PVC part	2
	PVC part	2		Screw (3x20mm)	4
	PVC part	2		Screw (3x65mm)	4
	Nut (3mm)	4		Ply (15x15x3mm)	5
	TP Screw (2.3x8mm)	5			

58 Trim the cowling for engine and muffler.



59 Assemble the cowling.



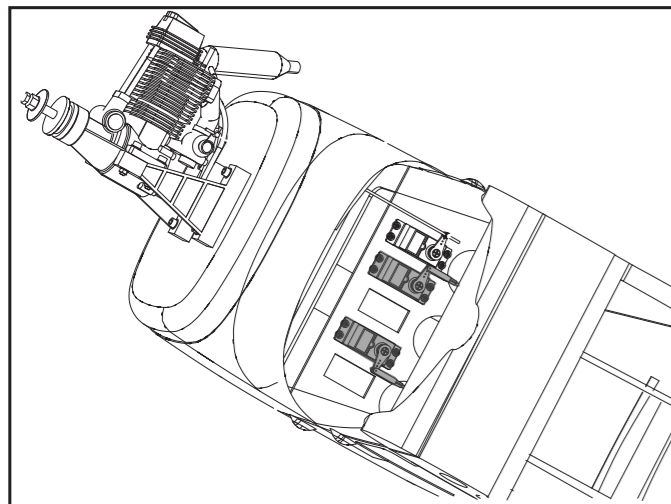
AB Apply epoxy glue. **LR** Assemble left and right sides the same way. Pay close attention here! Do not overlook this symbol!

CA Apply instant glue (CA glue, super glue). Ensure smooth non-binding movement while assembling. Cut off shaded portion. Warning!

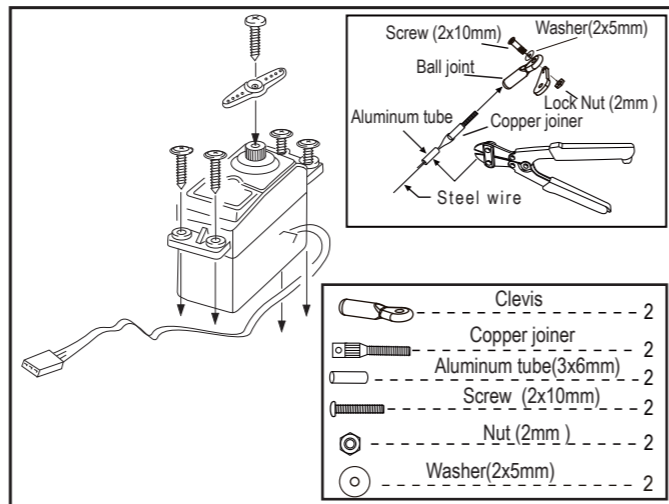
AB Apply epoxy glue. **LR** Assemble left and right sides the same way. Pay close attention here! Do not overlook this symbol!

CA Apply instant glue (CA glue, super glue). Ensure smooth non-binding movement while assembling. Cut off shaded portion. Warning!

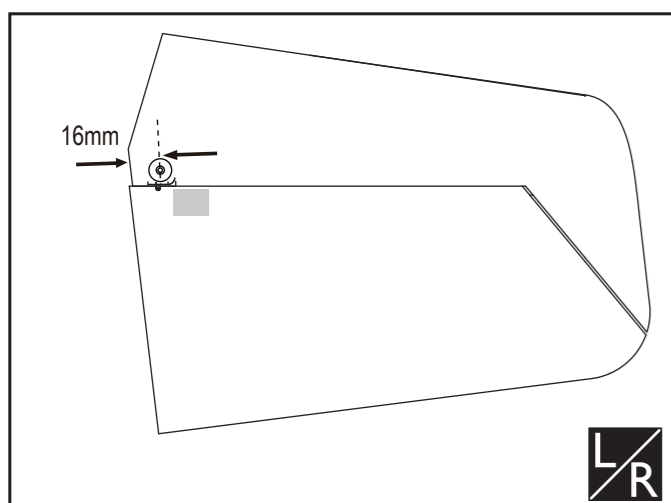
49 Install the elevator servos in the fuselage.



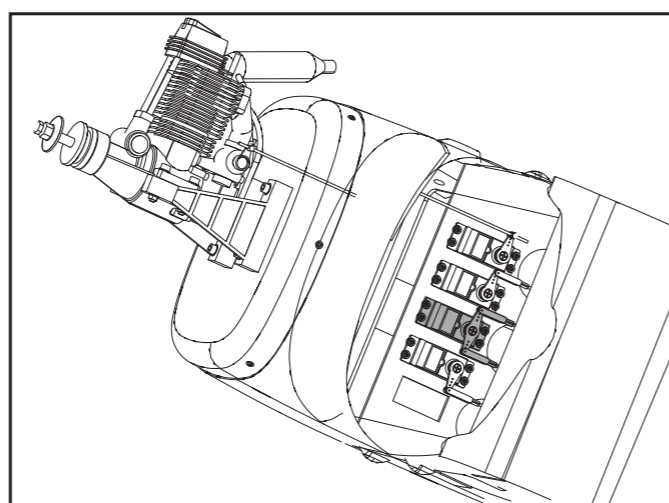
52 Install the rudder servo.



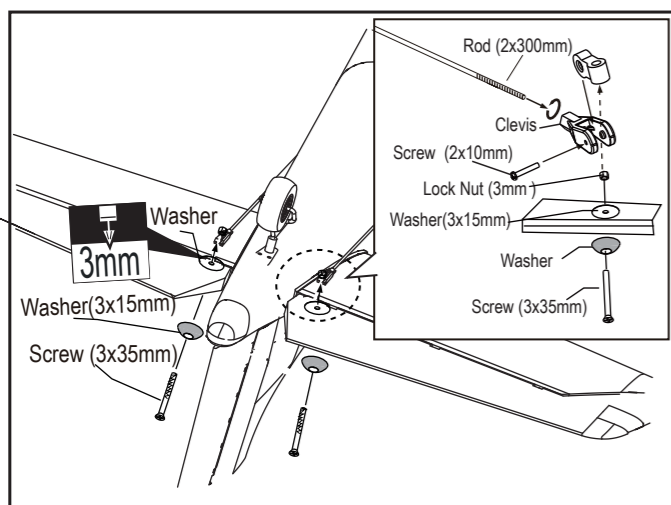
50 The position of the elevator control horn.



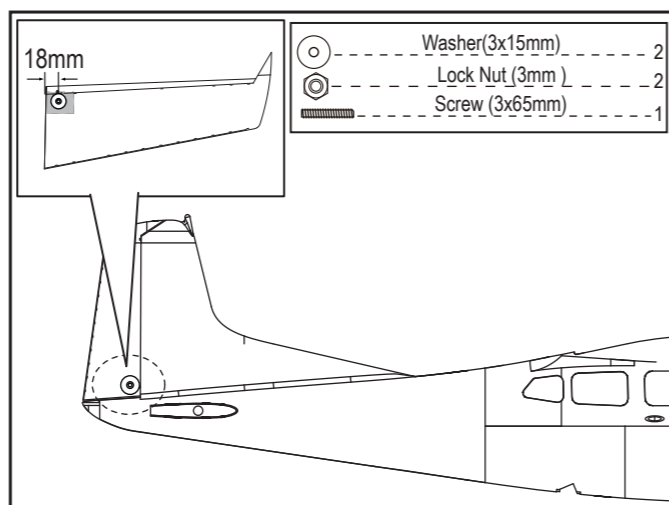
53 Mount the rudder servo in the fuselage.



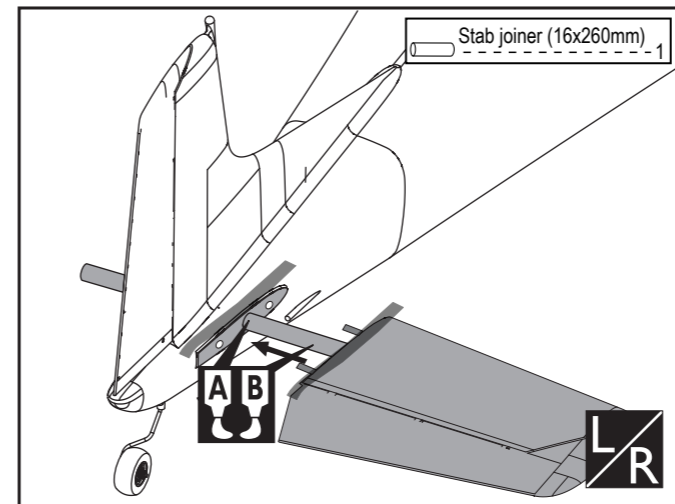
51 Elevator. Connect the linkage rod to the horn.



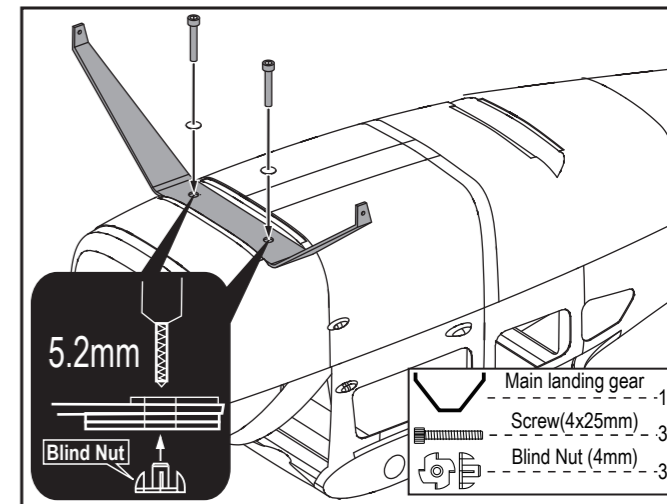
54 The position of the rudder control horn.



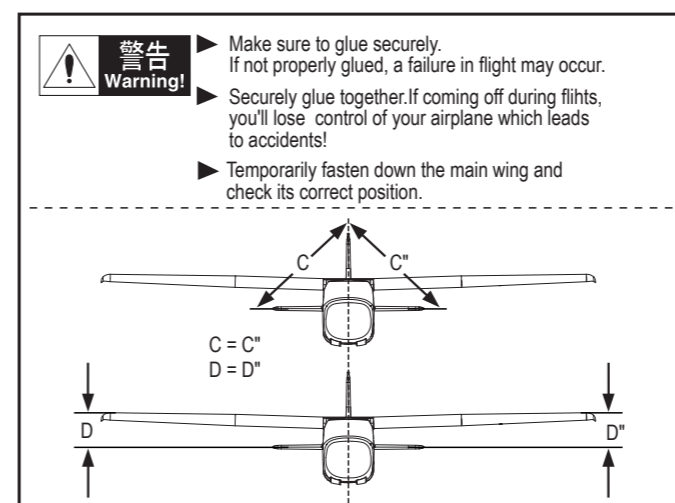
33 Epoxy the horizontal tail to the fuselage and take care to keep it clean.



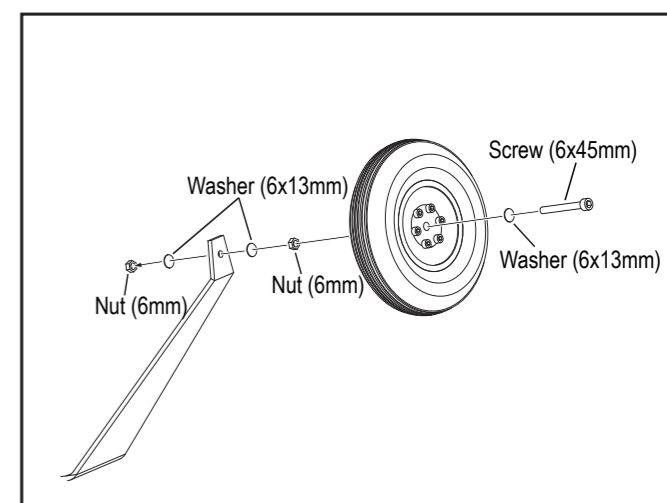
35 Install the main landing gear.



34 Assemble the horizontal tail, Vertical tail separately.



36 Assemble the wheel to the landing gear.



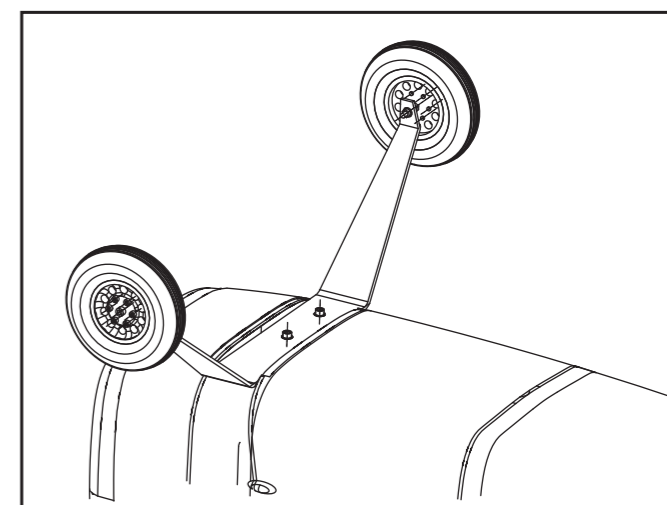
AB Apply epoxy glue. **LR** Assemble left and right sides the same way. **Hand icon** Pay close attention here! **Warning icon** Do not overlook this symbol!

CA Apply instant glue (CA glue, super glue). **Arrow icon** Ensure smooth non-binding movement while assembling. **Scissors icon** Cut off shaded portion.

Warning icon Accessory list for the coming installation steps.

- Main landing gear 1
- Blind Nut (4mm) 3
- Nut (6mm) 4
- Screw (4x25mm) 3
- Screw (6x45mm) 2
- Washer (6x13mm) 6
- Wheel (90 mm) 2

37 The sketch map when the landing gear install completion.



AB Apply epoxy glue. **LR** Assemble left and right sides the same way. **Hand icon** Pay close attention here! **Warning icon** Do not overlook this symbol!

CA Apply instant glue (CA glue, super glue). **Arrow icon** Ensure smooth non-binding movement while assembling. **Scissors icon** Cut off shaded portion.

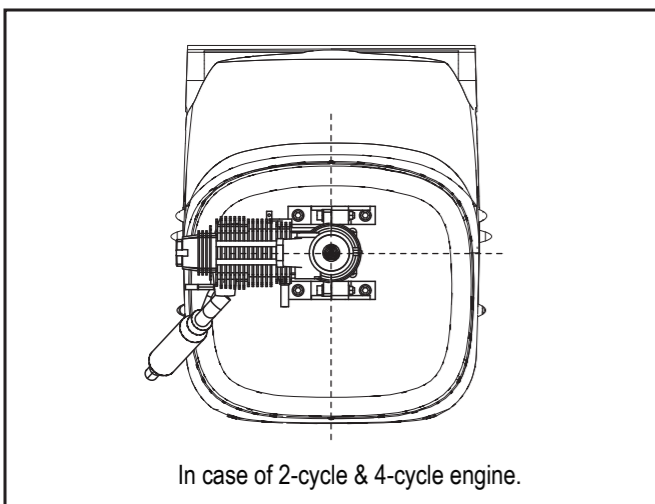


Accessory list for the coming installation steps.

	Screw (4x35mm) 4		Fuel tank (550cc) 1
	Screw (4x25mm) 4		Copper joiner 4
	Washer (4x8mm) 12		Copper joiner 4
	Spring Washer (4mm) 4		Aluminum tube (3x6mm) 4
	Nut (4mm) 4		Clevis 2
	Linkage Stopper 2		Fiberglass pushrod (3x900mm) 2
	TP Screw (2.3x8mm) 5		Steel wire (0.5x1500mm) 2
	Plastic tube (2x650mm) 1		Ply (20x16x2mm) 6
	Engine mount (68x105mm) 2		Blind Nut (4mm) 4
	Clevis 2		Washer (3x15mm) 2
	Washer (3x15mm) 4		Screw (3x65mm) 1
	Lock Nut (3mm) 6		Clevis 4
	Nut (2mm) 4		Screw (2x10mm) 4
			Washer (2x5mm) 4

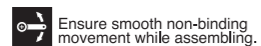
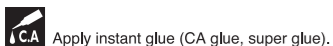
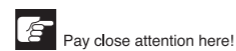
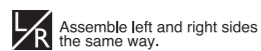
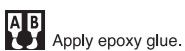
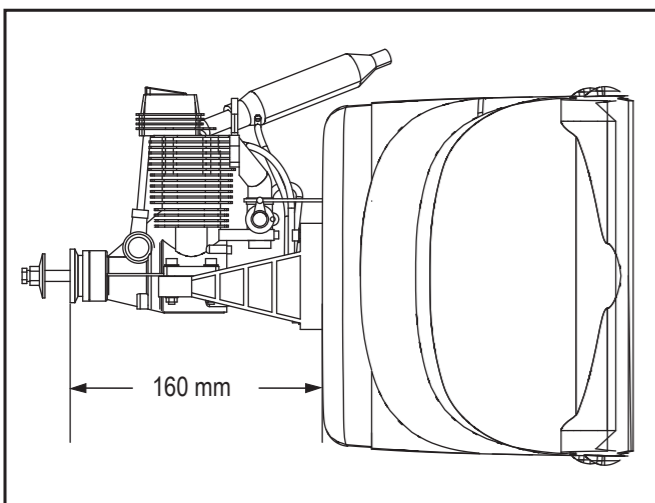
38

The front view when the engine install completion.



39

The side view when the engine install completion.

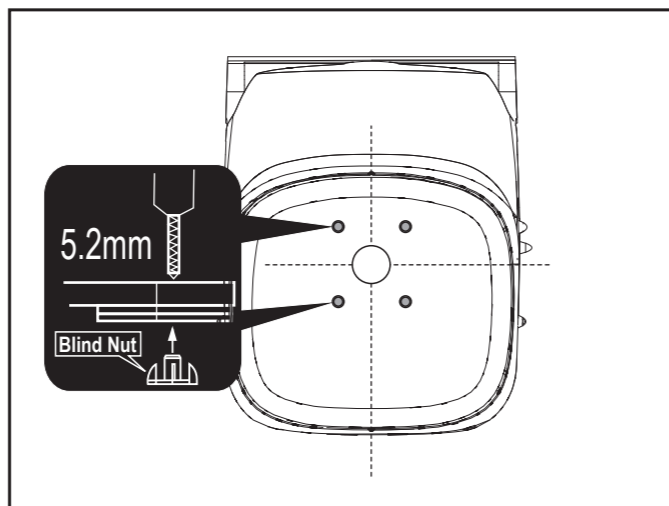


Do not overlook this symbol!



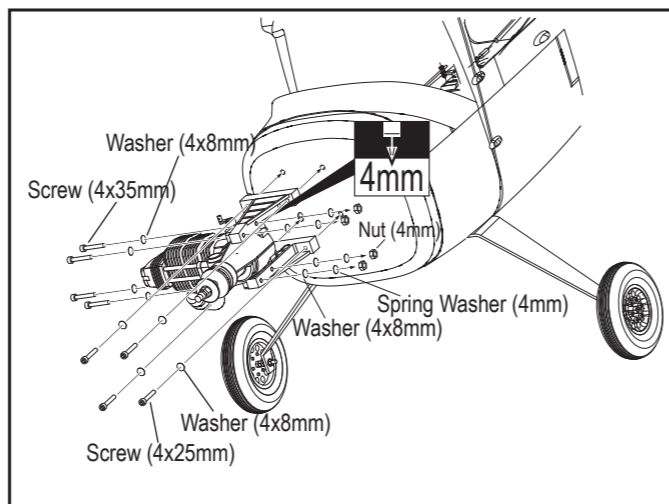
40

Drill four holes at the diameters as shown for engine mount.



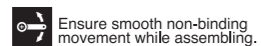
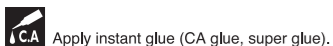
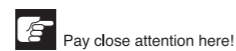
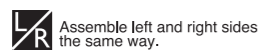
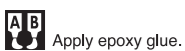
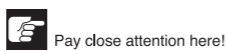
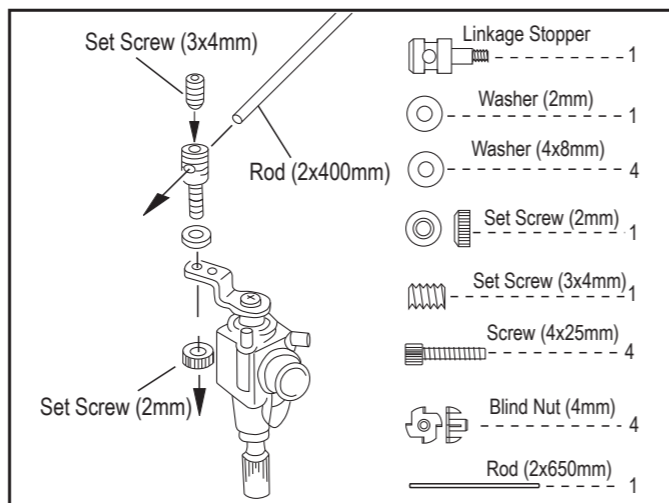
41

Assemble the engine.



42

Assemble the throttle linkage.

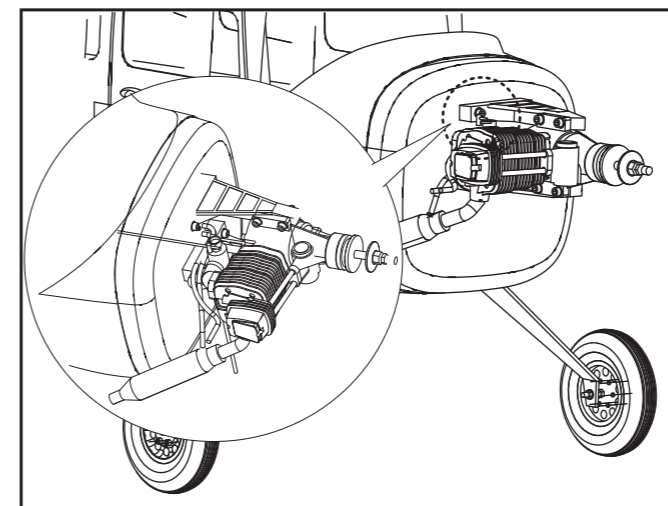


Do not overlook this symbol!



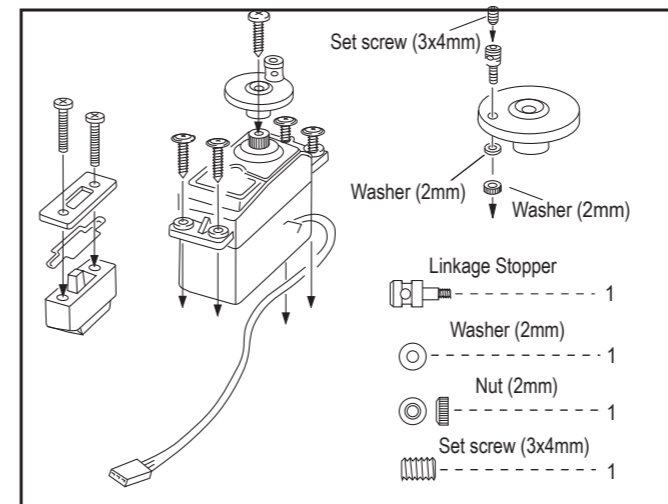
43

Assemble the throttle linkage to the engine.



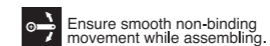
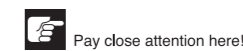
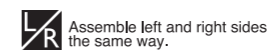
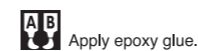
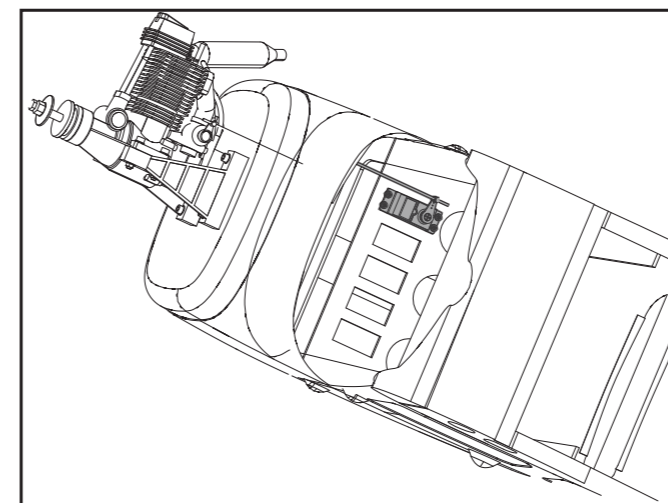
44

Assemble the servo and switch.



45

Install the servo and switch in the fuselage.

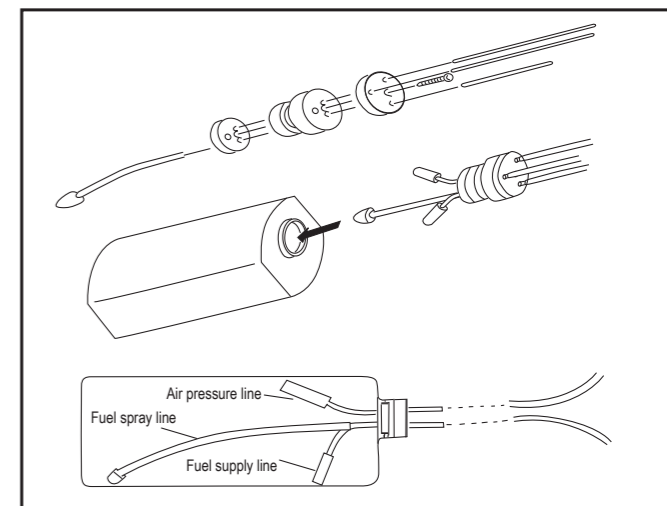


Do not overlook this symbol!



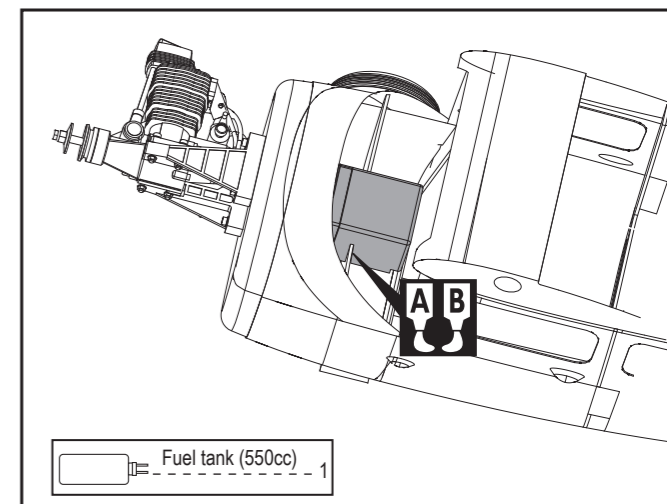
46

Assembly of the fuel tank.



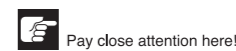
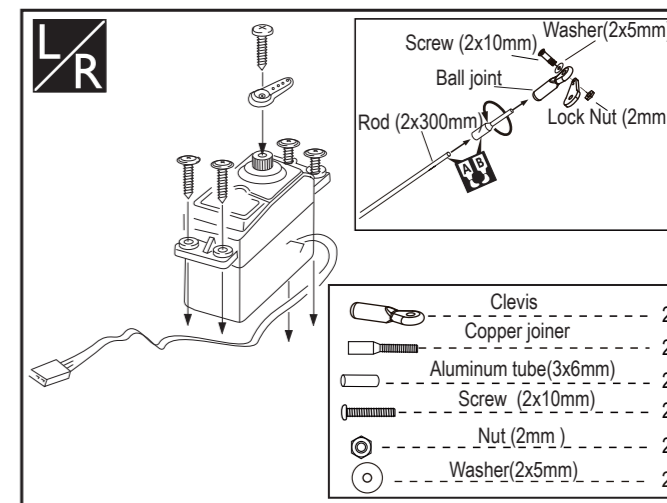
47

Mount the fuel tank into the fuselage.



48

Assemble the elevator servos.



Do not overlook this symbol!

