45 Class
2-cycle engine

70 Class
4-cycle engine

Or Electric equivalent

YAK

INSTRUCTION MANUAL / Montageanleitung

All balsa, plywood construction and almost ready to fly

TECHNISCHE DATEN

Spannweiter	1520mm
Länge	1237mm
Elektroantrieb	800-900Watt
Verbrennerantrieb	7.5cc 2-T / 11cc 4-T
Fernsteuerung	6 Kanal / 6-7 Servos

SPECIFICATIONS

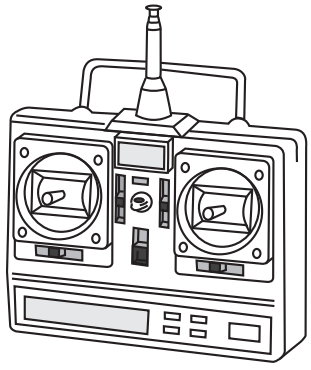
Wingspan	59.8 in.
Length	48.7 in.
Electric Motor	800-900Watt
Glow Engine	.46 2-T / .70 4-T
Radio	6 Channels / 6-7Servos

WARNING! This radio controlled model is NOT a toy. If modified or flown carelessly it could go out of controll and cause serious human injury or property damage. Before flying your airplane, ensure the air field is spacious enough. Always fly it outdoors in safe areas and seek professional advice if you are unexperienced.

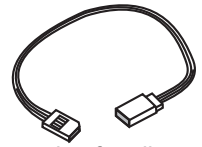
ACHTUNG! Dieses ferngesteuerte Modell ist KEIN Spielzeug! Es ist für fortgeschrittene Modellflugpiloten bestimmt, die ausreichende Erfahrung im Umgang mit derartigen Modellen besitzen Bei unsachgemäßer Verwendung kann hoher Personen- und/oder Sachschaden entstehen. Fragen Sie in einem Modellbauverein in Ihrer Nähe um professionelle Unterstützung, wenn Sie Hilfe im Bau und Betrieb benötigen. Der Zusammenbau dieses Modells ist durch die vielen Abbildungen selbsterklärend und ist für fortgeschrittene, erfahrene Modellbauer bestimmt.

NEXA

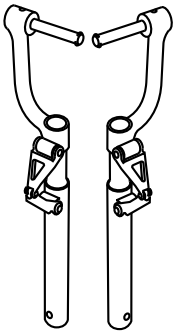
OPTIONAL ACCESSORIES / BENOTIGTES ZUBEHOR



10.5x6 for .40 - 2 cycle engine
11x6 for .46 - 2 cycle engine
12x6 for .60 - 4 cycle engine
12x7 for .70 - 4 cycle engine
11x8 for Brushless Motor



Extension for aileron flap and retract servo.



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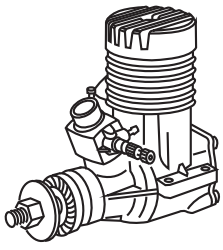
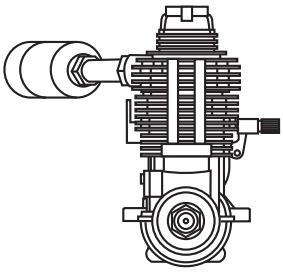
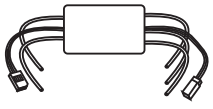


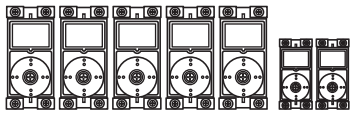
.46 ~ .50 - 2 cycle



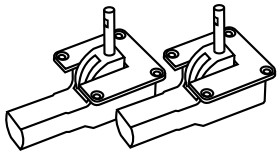
.60 ~.70 - 4 cycle



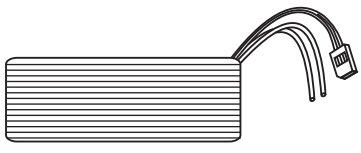
ESC:60-65A



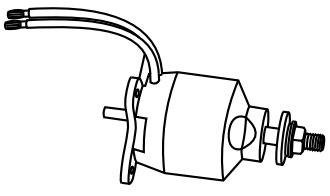
Minimum 6 channel radio
for airplane with 7 servos
.Motor control x1 .Aileron x2
.Flap x2 (mini servo)
.Elevator x1 .Rudder x1



Silicone tube



Li-Po Battery

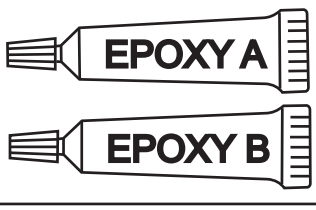


800-900Watt brushless Motor

GLUE (Purchase separately)

Silicon sealer

Cyanoacrylate
Glue
Klebstoff



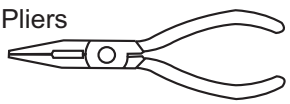
Epoxy Glue (5 minute type)
Epoxy-Klebstoff (5min-Typ)

Epoxy Glue (30 minute type)
Epoxy-Klebstoff (30min-Typ)

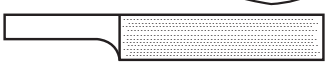
TOLLS REQUIRED (Purchase separately)

Hobby knife

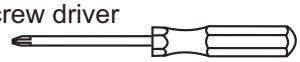
Needle nose Pliers



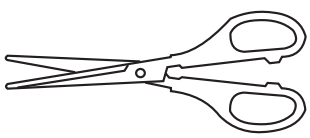
Sander



Phillip screw driver



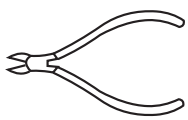
Scissors



Hex Wrench

Awl

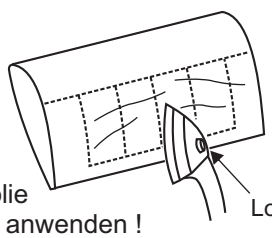
Wire Cutters



Masking tape - Straight Edged Ruler - Pen or pencil - Rubbing alcohol - Drill and Assorted Drill Bits

If exposed to direct sunlight and/or heat, wrinkels can appear. Storing the model in a cool place will let the wrinkles disappear. Otherwise, remove wrinkles in covering film with a hair dryer, starting with low temperature. You can fix the corners by using a hot iron.

Bei Sonneneinstrahlung und/oder Wärme kann die Folie erschlaffen bzw. Falten entstehen. Verwenden Sie ein Warumluftgebläse (Haartrockner) um evtl. Falten aus der Folie zu bekommen. Die Kanten können Sie mit einem Bügeleisen behandeln. Nicht zuviel Hitze anwenden !



Low setting

Drill holes using the stated size of drill (in this case 1.5 mm Ø)

Take particular care here

Hatched-in areas: remove covering film carefully

Check during assembly that these parts move freely, without binding

Use epoxy glue

Apply cyano glue

Assemble left and right sides the same way.

Not included.
These parts must be purchased separately

Löcher bohren mit dem angegebenen Bohrer (hier 1,5 mm)

Hier besonders aufpassen

Schraffierte Stellen, Bespannfolie vorsichtig entfernen

Während des Zusammenbaus immer prüfen, ob sich die Teile auch reibungslos bewegen lassen

Epoxy-Klebstoff verwenden

Sekundenkleber auftragen

Linke und rechte Seite wird gleichermaßen zusammengebaut

Nicht enthalten. Teile müssen separat gekauft werden.

CONVERSION TABLE

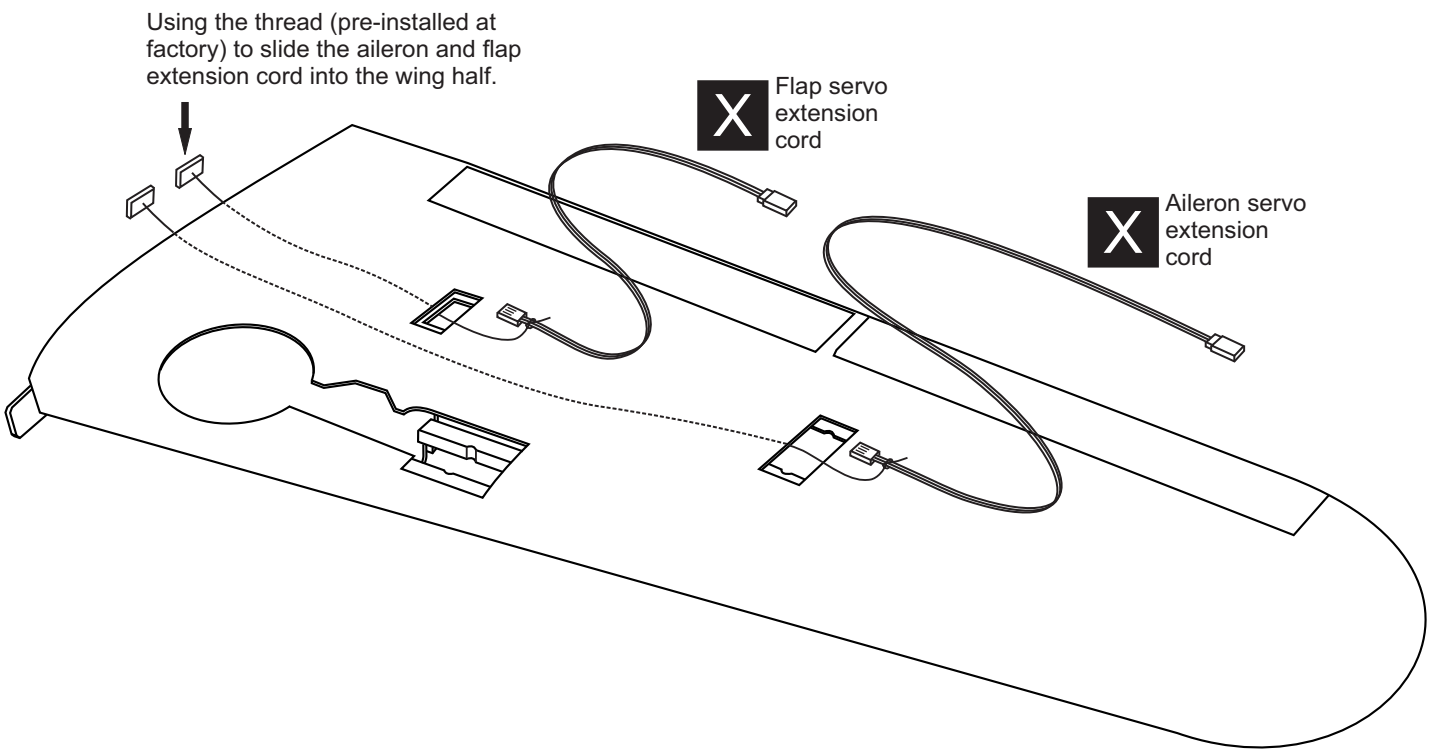
1.0mm = 3/64”	3.0mm = 1/8”	10mm = 13/32”	25mm = 1”
1.5mm = 1/16”	4.0mm = 5/32”	12mm = 15/32”	30mm = 1-3/16”
2.0mm = 5/64”	5.0mm = 13/64”	15mm = 19/32”	45mm = 1-51/64”
2.5mm = 3/32”	6.0mm = 15/64”	20mm = 51/64”	

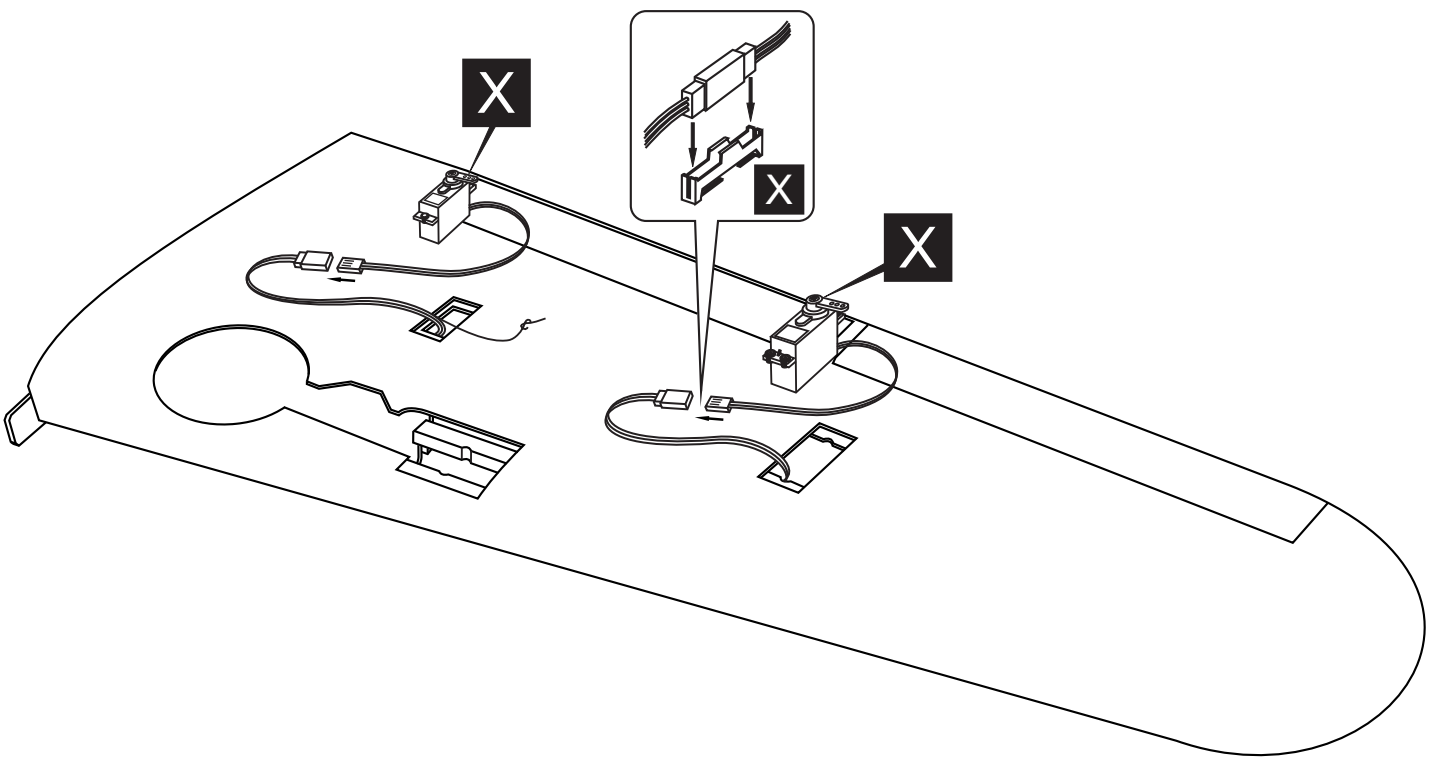
YAK-9 1- MAIN WING: Extension cord & Servo

Read through the manual before you begin, so you will have an overall idea of what to do.

SAFETY NOTES BEFORE ASSEMBLING

This model is highly pre-fabricated and can be built in a very short time. However, the work which you have to carry out is important and must be done carefully. The model will only be strong and fly well if you complete your tasks competently - so please work slowly, accurately and check every joints, maybe apply more glue to be safe.





YAK-9 2- MAIN WING: Control horn & Linkages

Plastic control horn

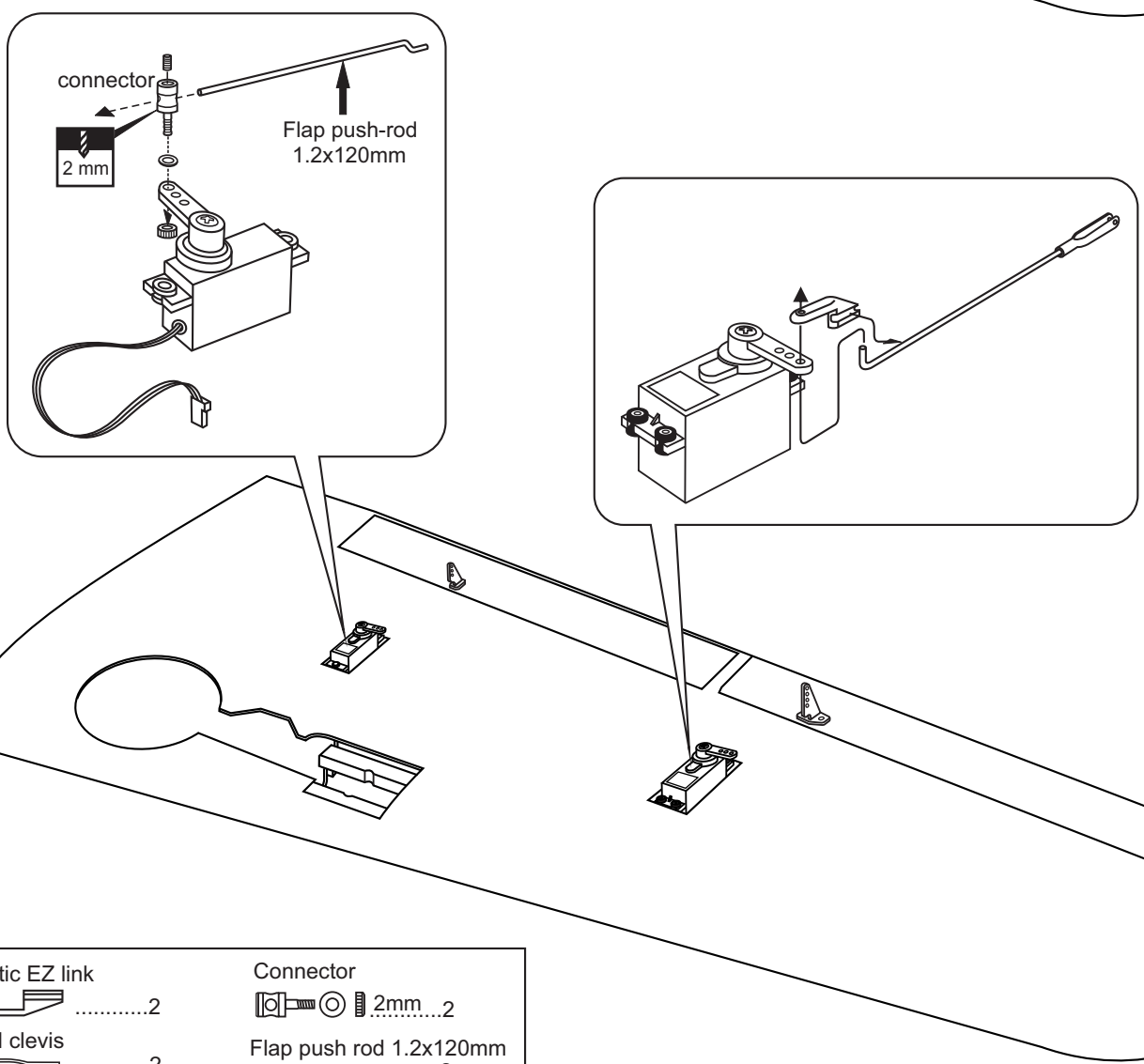
.....2 set

Plastic control horn

.....2 set

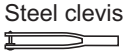
2x20mm screw

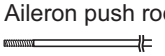
.....4



Plastic EZ link

.....2

Steel clevis

.....2

Aileron push rod 2x175mm

.....2

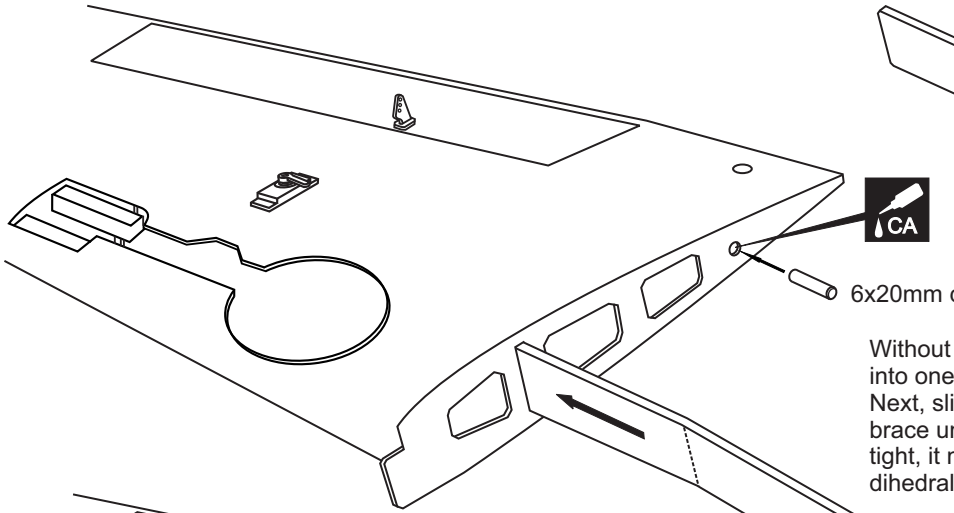
Connector

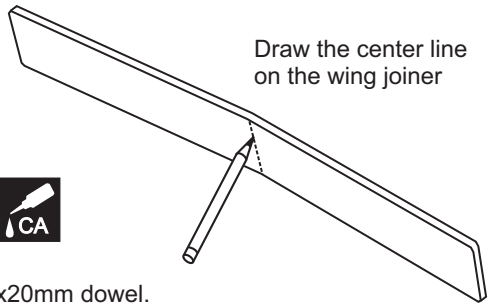
2mm 2

Flap push rod 1.2x120mm

.....2

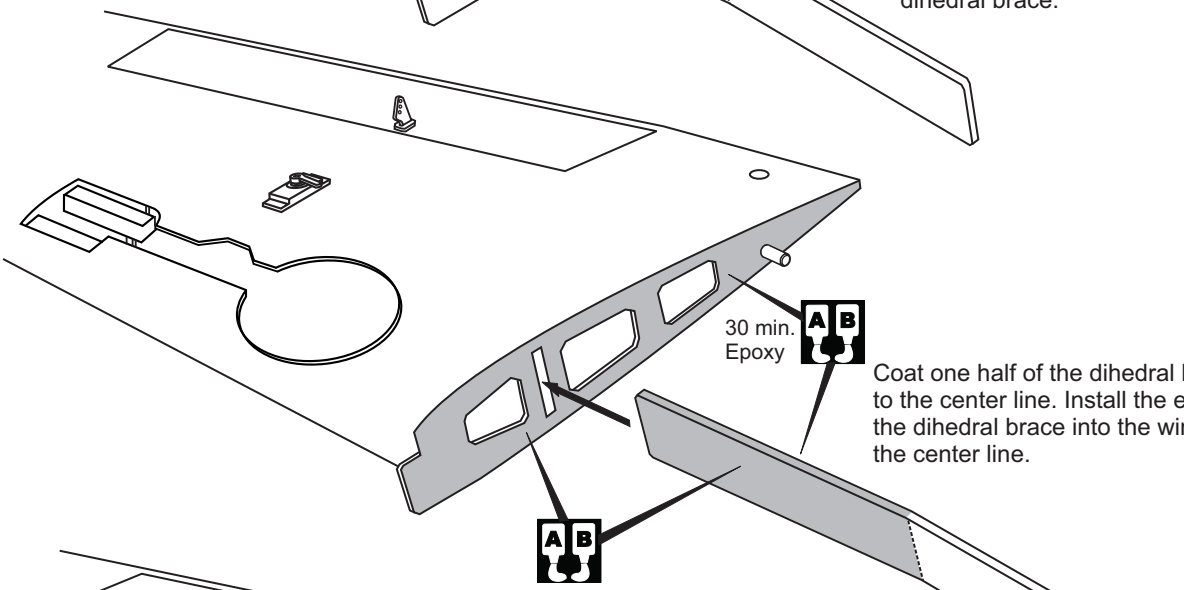
YAK-9 3- MAIN WING: Joining the wing halves



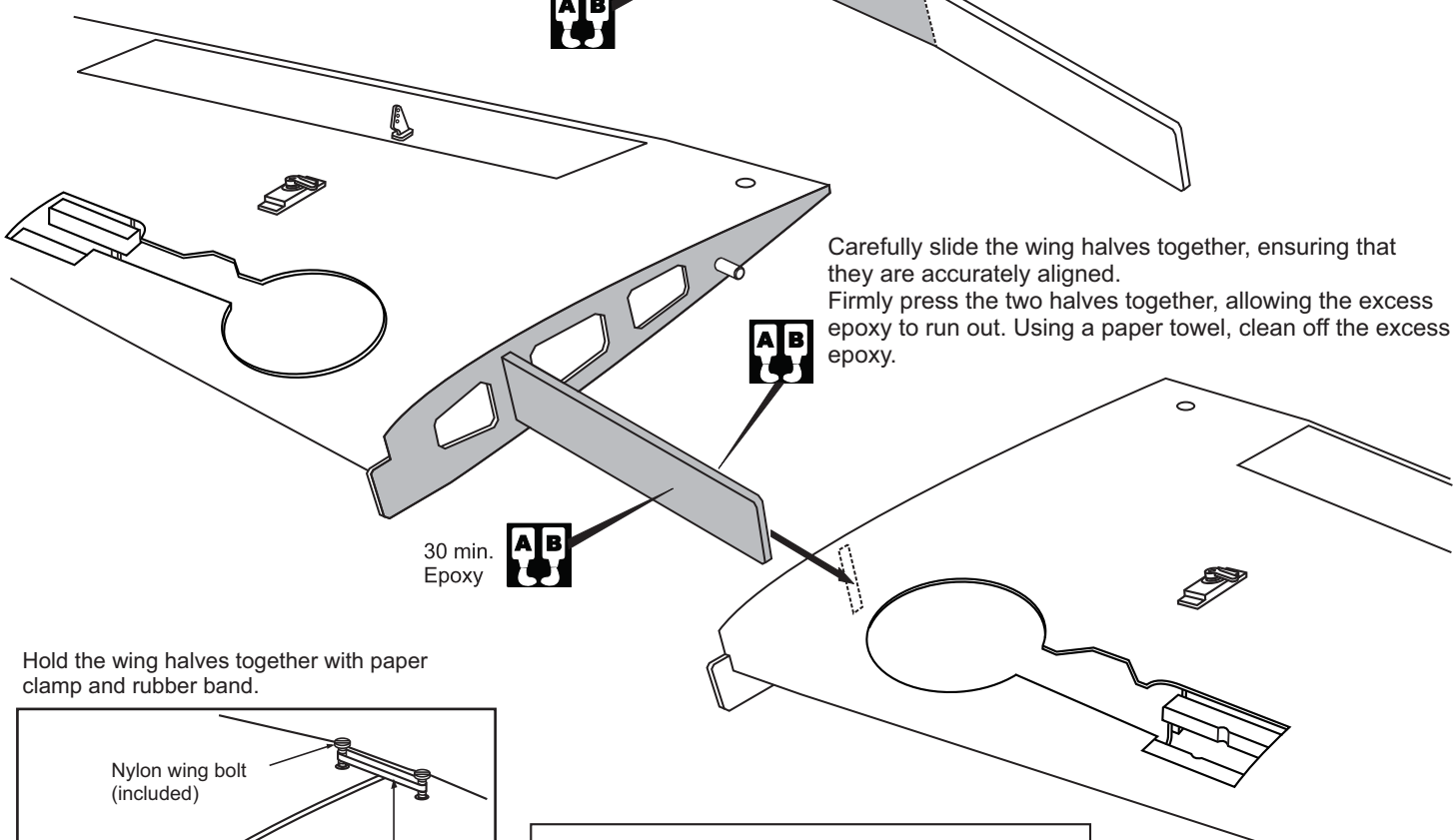


Draw the center line on the wing joiner

Without using Epoxy yet, trial fit the wing joiner into one of the wing panels.
Next, slide the other wing half onto the dihedral brace until the wing panels meet. If the fit is overly tight, it may be necessary to lightly sand the dihedral brace.

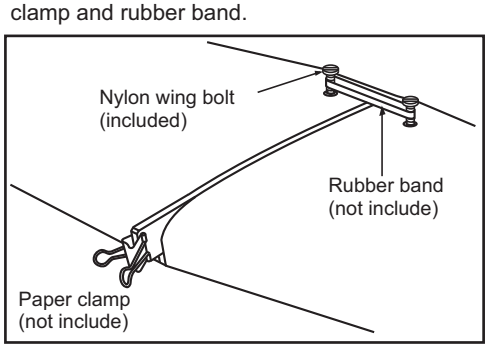


Coat one half of the dihedral brace with epoxy up to the center line. Install the epoxy-coated side of the dihedral brace into the wing joiner cavity up to the center line.



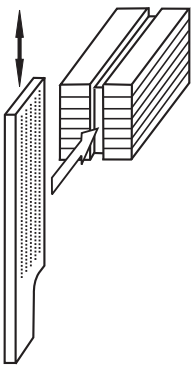
Carefully slide the wing halves together, ensuring that they are accurately aligned.
Firmly press the two halves together, allowing the excess epoxy to run out. Using a paper towel, clean off the excess epoxy.

Hold the wing halves together with paper clamp and rubber band.

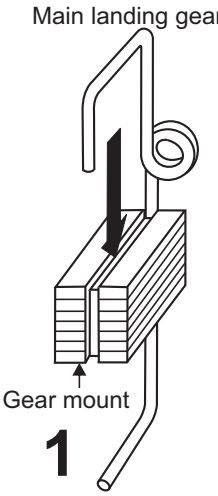


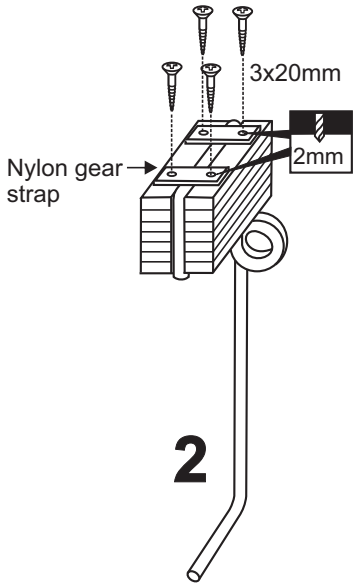
Securely glue together. If coming off during flight, you lose control of your air plane.

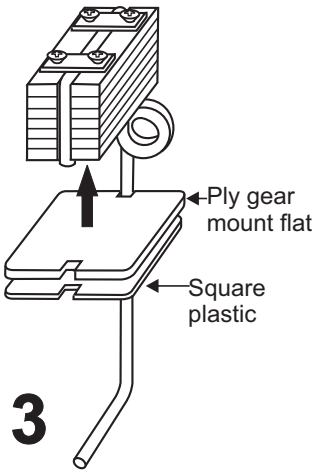
YAK-9 4- MAIN WING: Fixed gear assembly



Insert the main landing gear into the slot on the gear mount, if necessary, use sander to widen the slot to make this easier.







Ply gear mount plate x 2

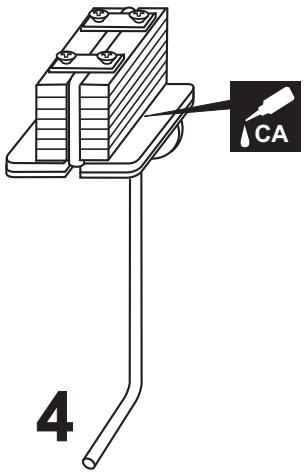
Gear mount x 2

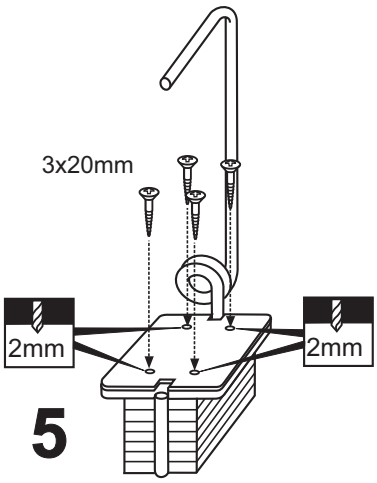
Nylon gear strap 4

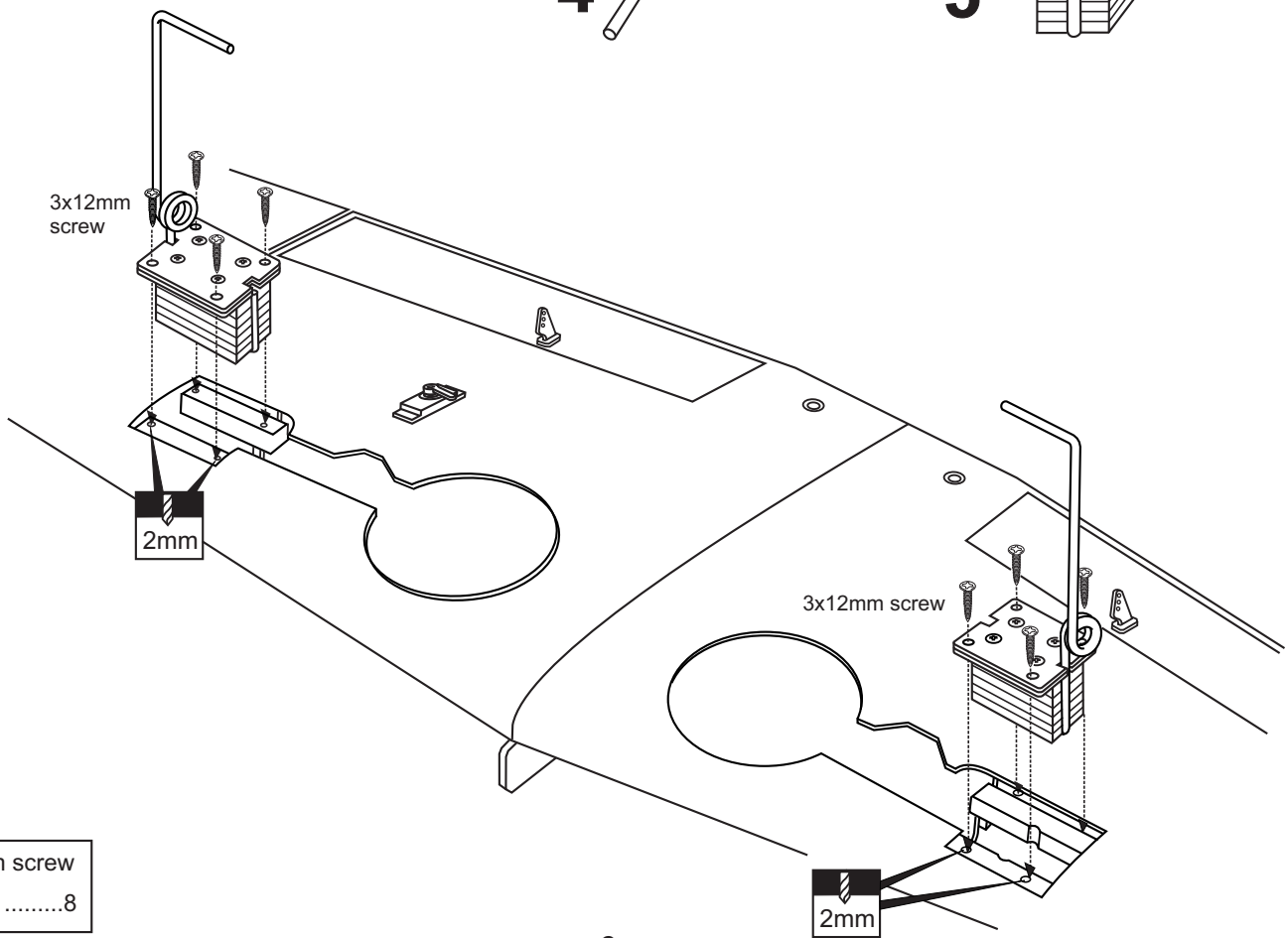
3x12mm screw 8

3x20mm screw 16

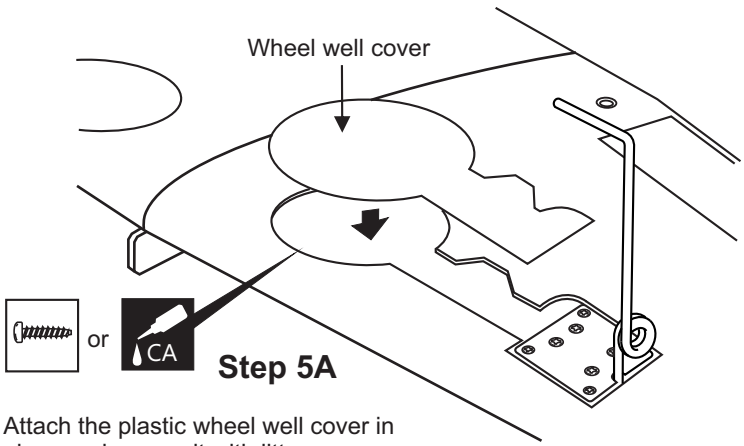
Square plastic x 2





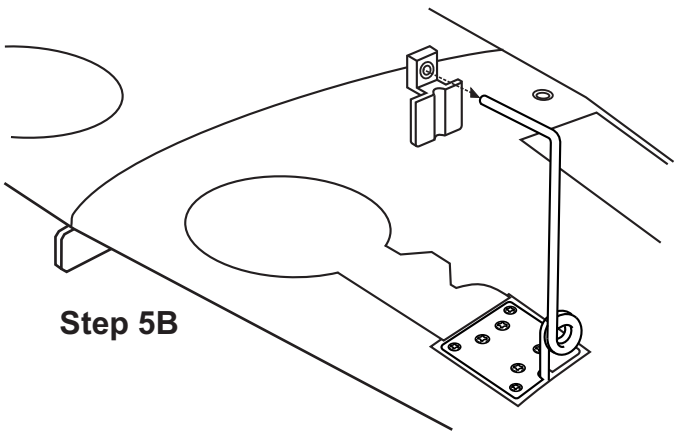


3x12mm screw 8

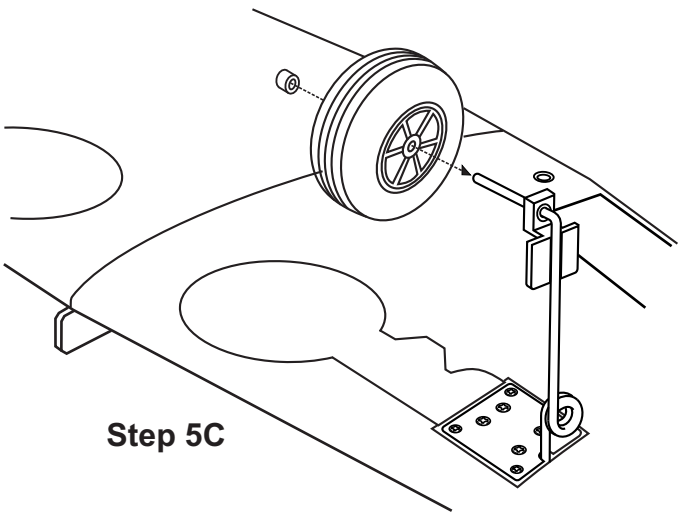


Step 5A

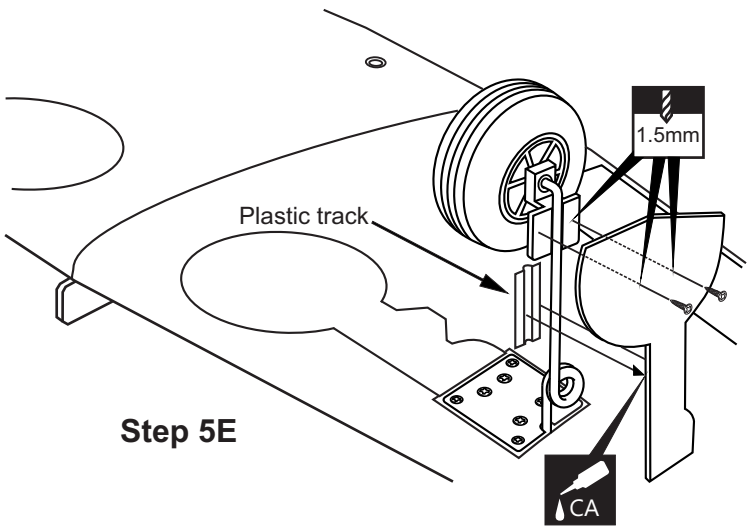
Attach the plastic wheel well cover in place and secure it with litter CA glue or 2x8mm screws.



Step 5B



Step 5C



Step 5E

2x6mm screw 4

4mm collar

...2 2

6- MAIN WING: E-retract & strut

Note: Eretract and strut must be purchase separately

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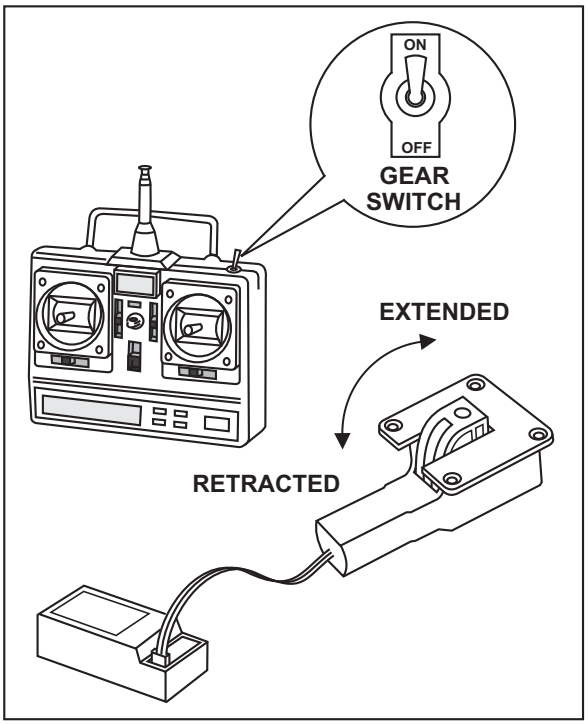
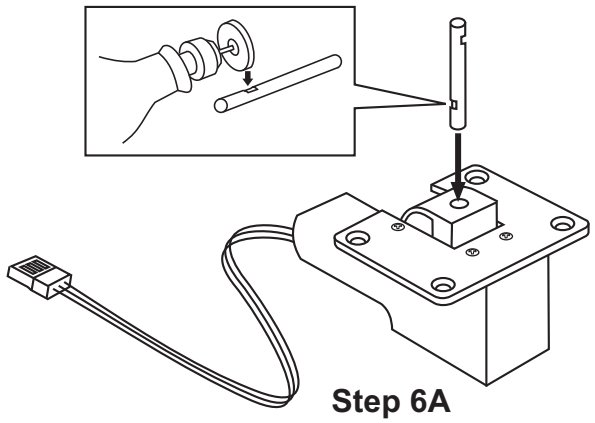
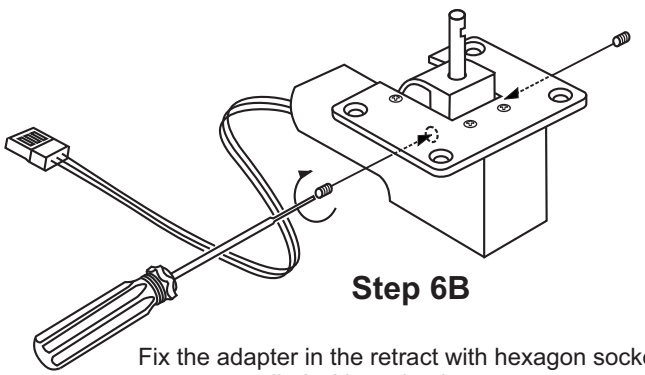


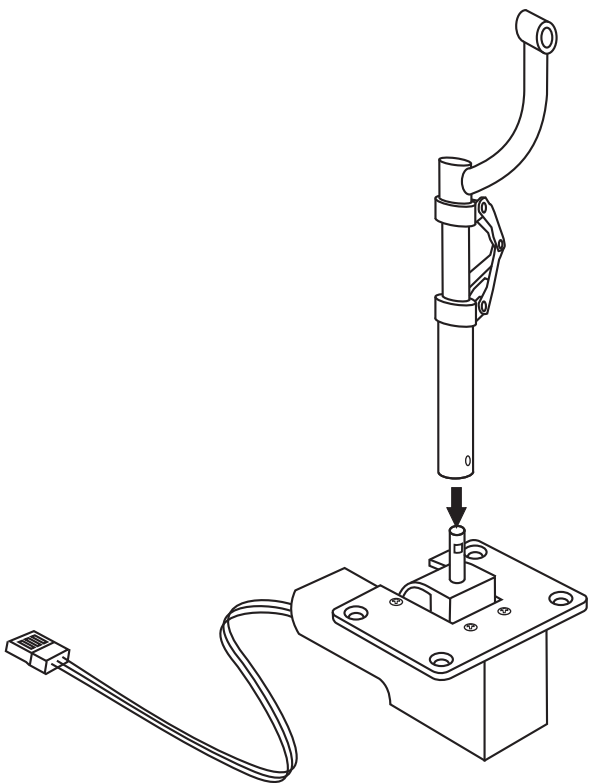


Step 6A



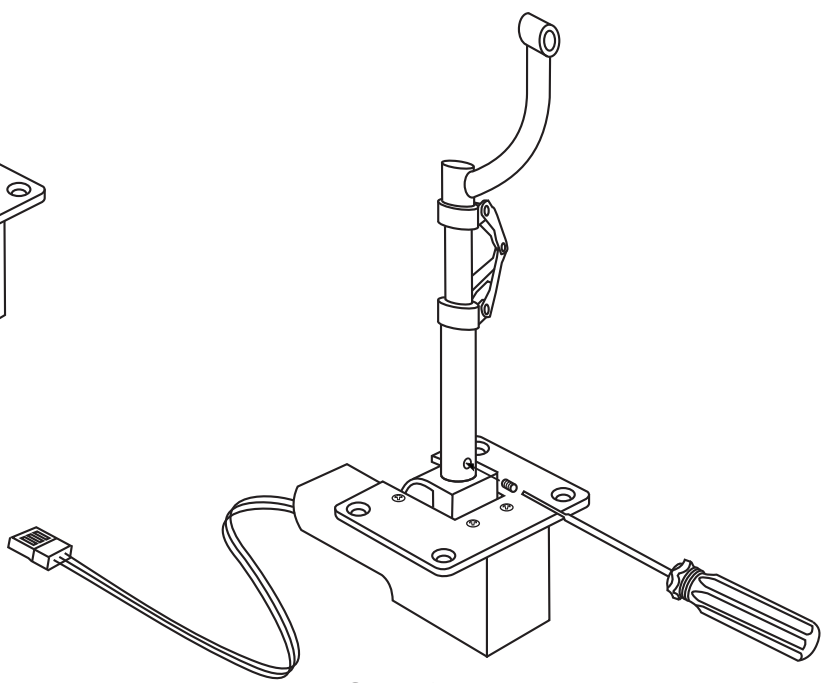
Step 6B

Fix the adapter in the retract with hexagon socket screws supplied with scale oleo strut.



Step 6C

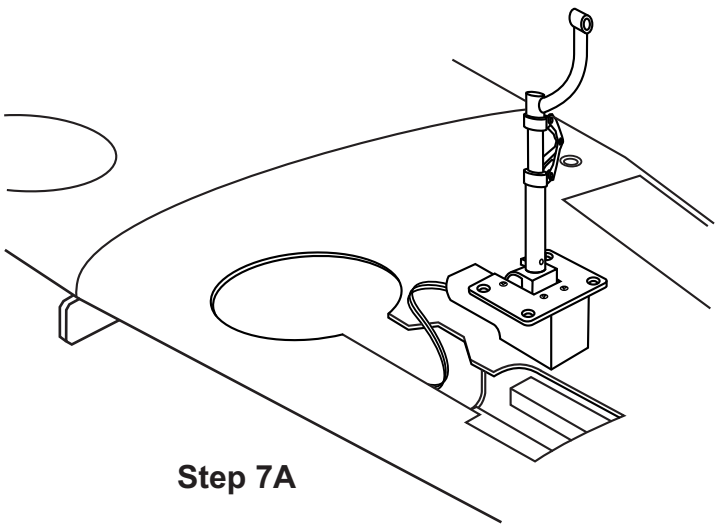
Fix the strut on the adapter....



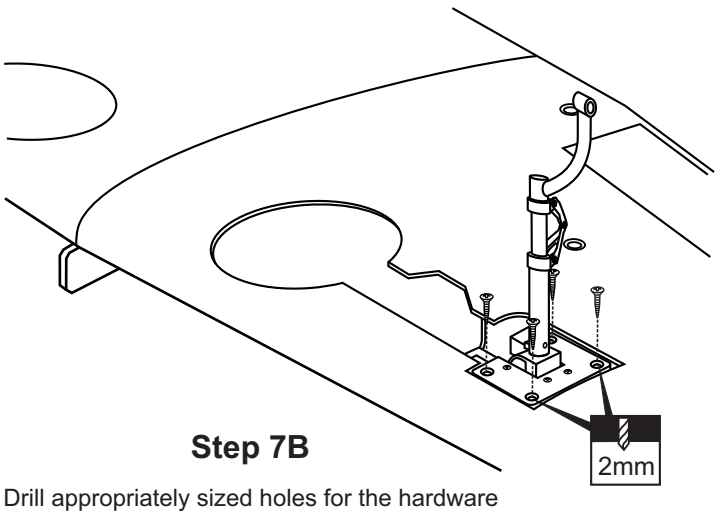
Step 6D

...then tighten the locking bolt.

7- MAIN WING: E-retract & strut

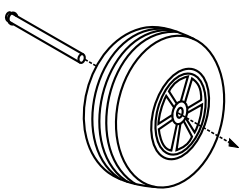


Step 7A



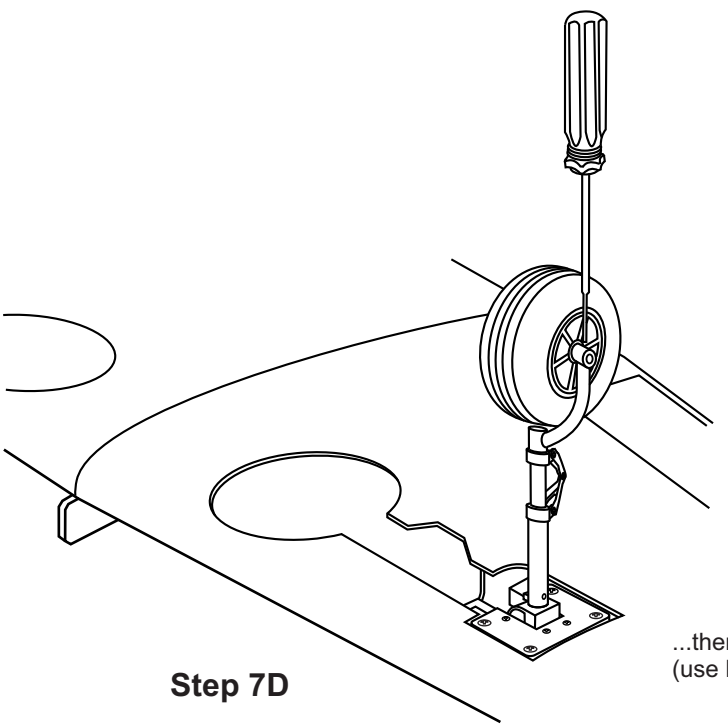
Step 7B

Drill appropriately sized holes for the hardware you intend to use (not supplied) then attach the retract in place (we recommend to use self tapping screws 3x15mm).



Step 7C

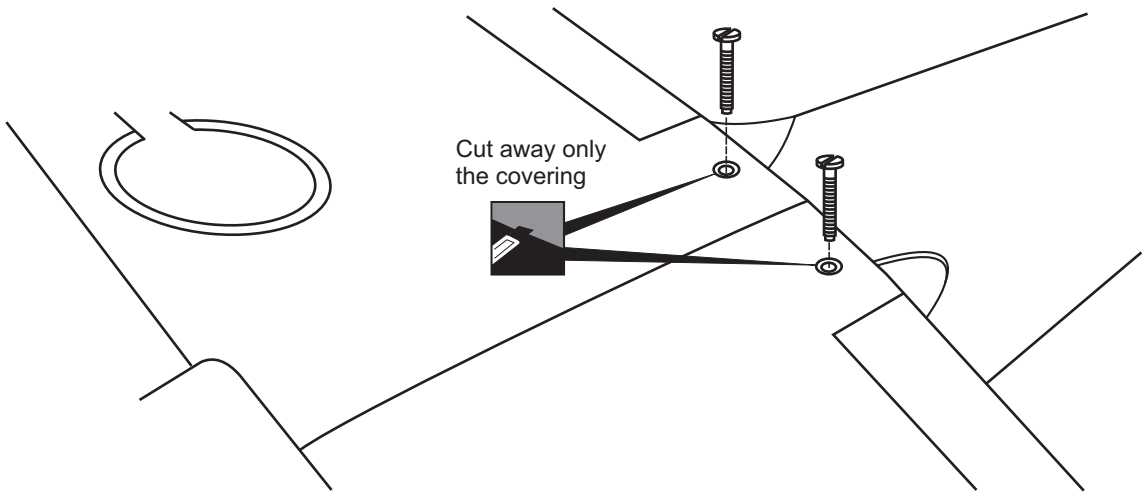
Slip the wheel on the axle with the circlip pointing away from the strut...



Step 7D

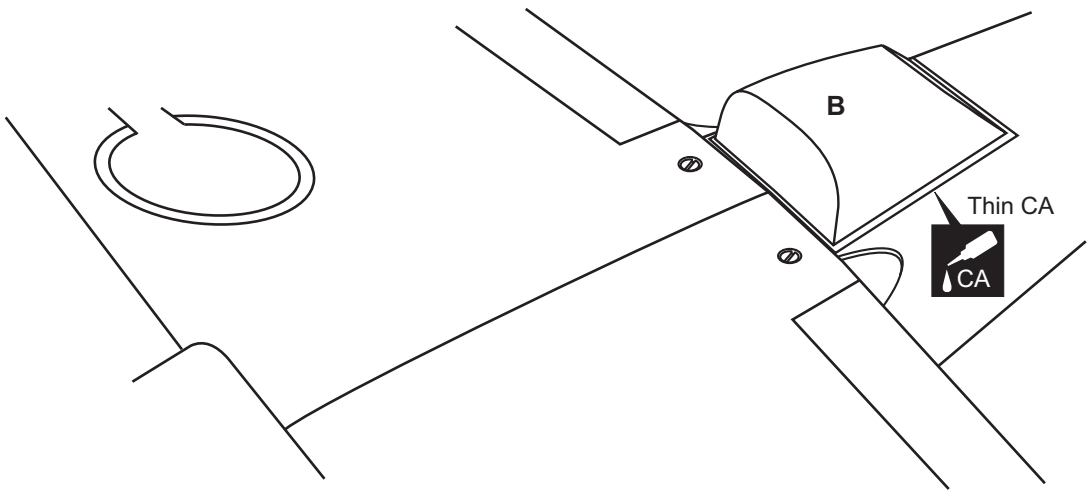
...then attach the axle to the gear and tighten the locking bolt (use LOCTITE threadlocker on every bolt).

YAK-9 8- Attach the wing to the fuselage

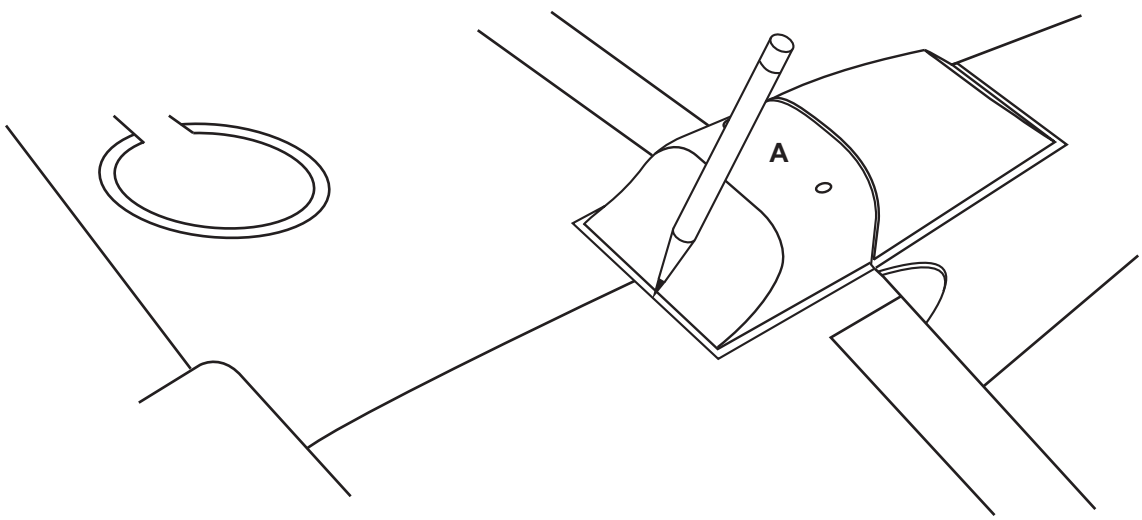


6x40mm nylon bolt 2

YAK-9 9- Air scoop

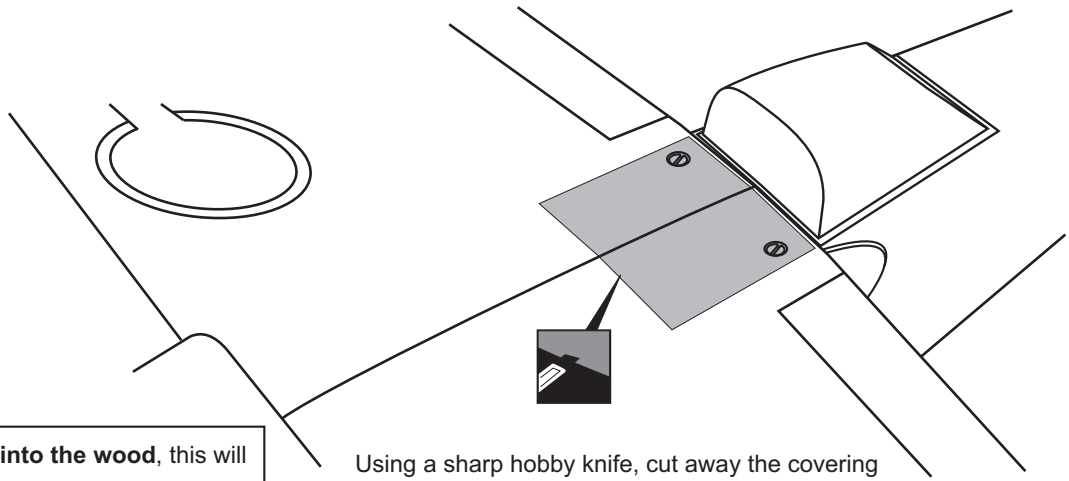


Apply the plastic air scoop (part B) in place and secure with CA glue.



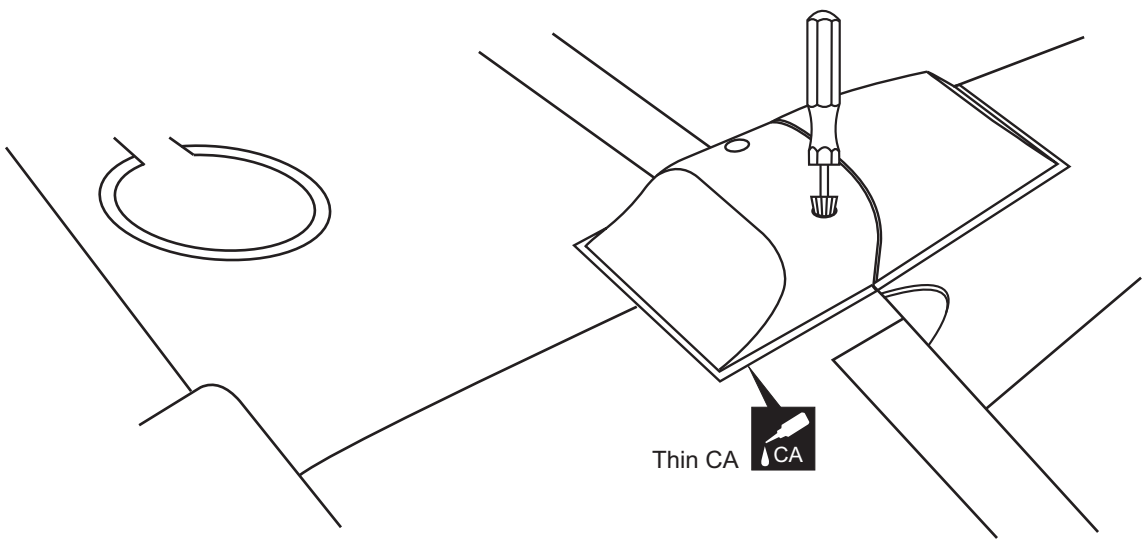
Using the ABS air scoop (part A) as a template, trace around the outside edge of the ABS air-scoop and then remove it.

YAK-9 10- Air scoop continued

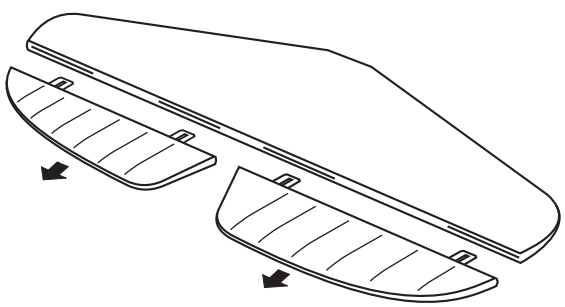


Be cautious **not to cut into the wood**, this will weaken the structure**.**

Using a sharp hobby knife, cut away the covering <u>inside the lines</u>. Not to cut into the wood.

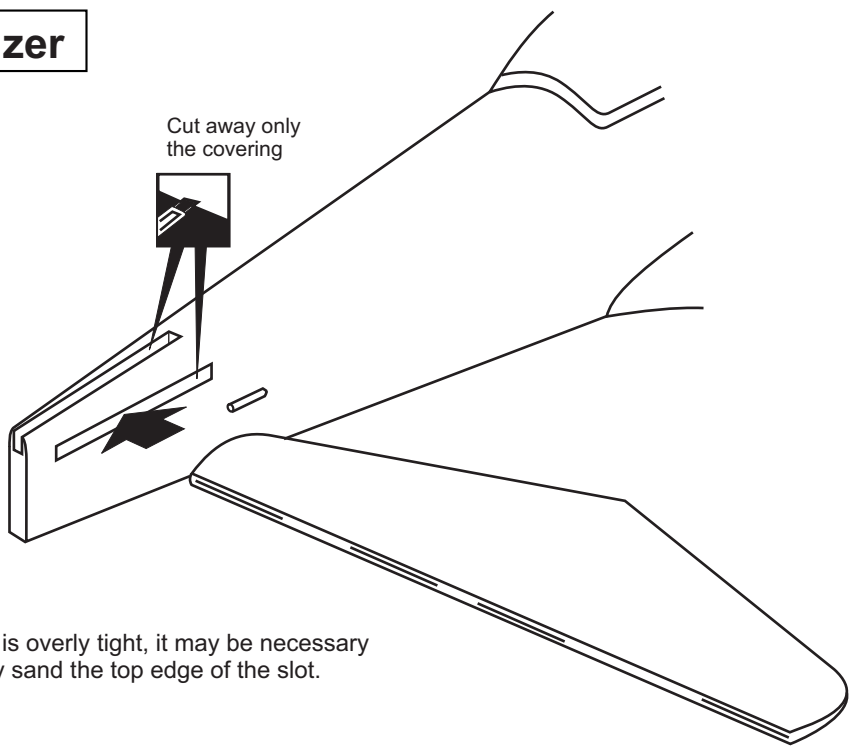


YAK-9 11- Horizontal stabilizer

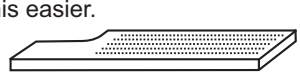


Note: The hinges are glued to the elevator only.

Remove the left and right elevator out of the horizontal stabilizer before insert the horizontal stabilizer.

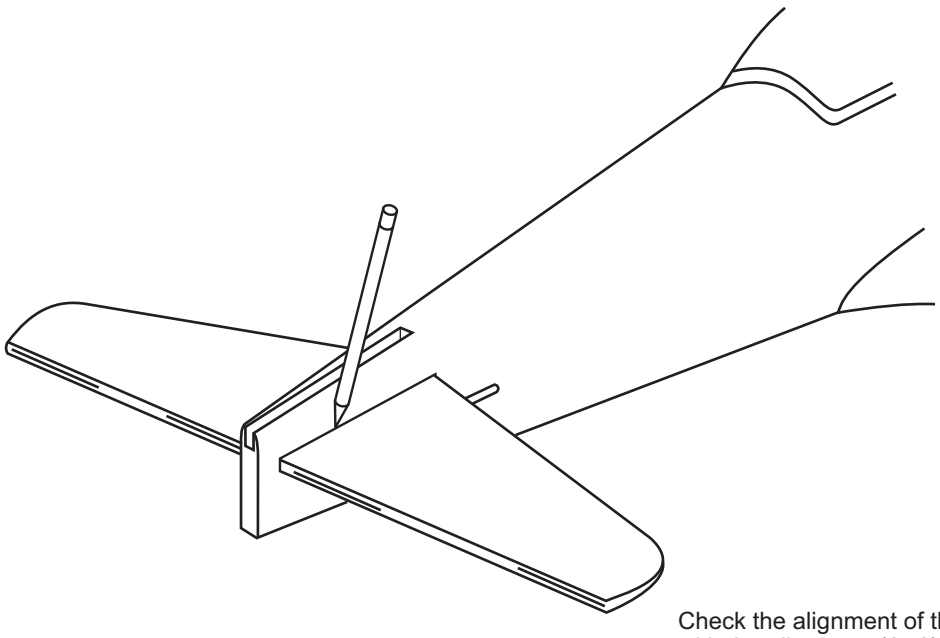


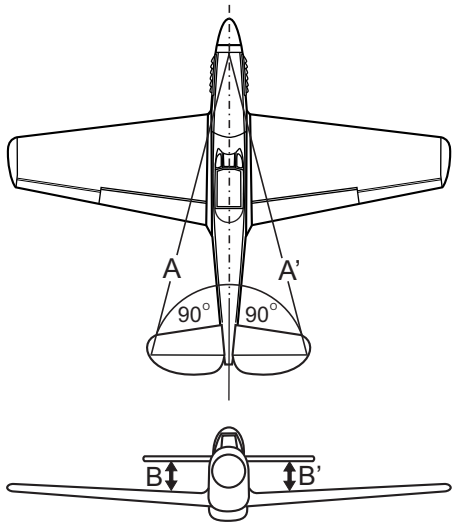
Insert the horizontal stabilizer into the slot on the fuselage, if necessary, use sander to widen the slot to make this easier.



If the fit is overly tight, it may be necessary to lightly sand the top edge of the slot.

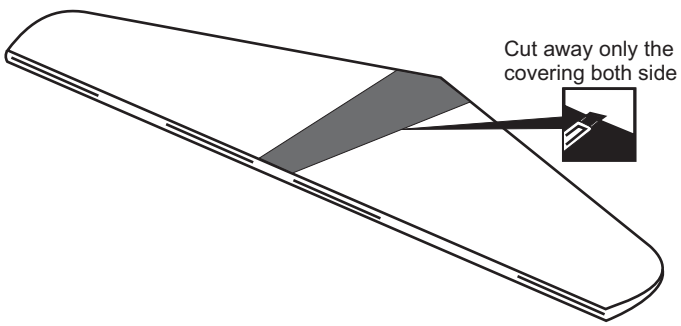
12- Horizontal stabilizer continued





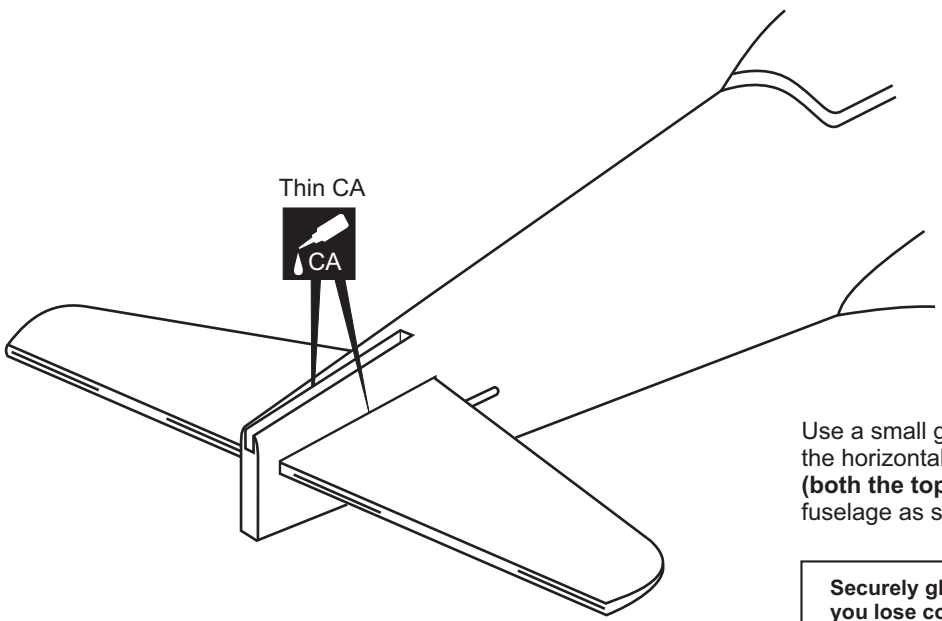
A=A' and B=B'

Check the alignment of the horizontal stabilizer When you are satisfied with the alignment (A=A' and B=B'), use a pencil to trace around the top and bottom of the stabilizer where it meets the fuselage.



Remove the horizontal stabilizer from the fuselage.
Using the sharp hobby knife, carefully cut away the covering **inside the lines** which were marked above.

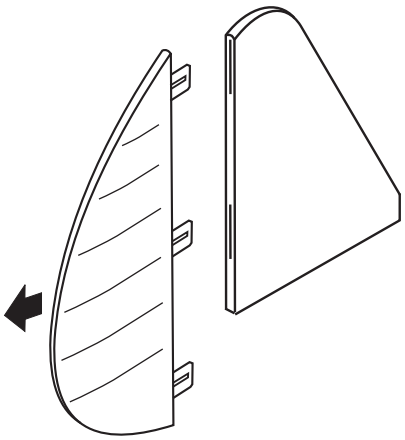
> Be cautious **not to cut into the wood**, this will weaken the structure**.**



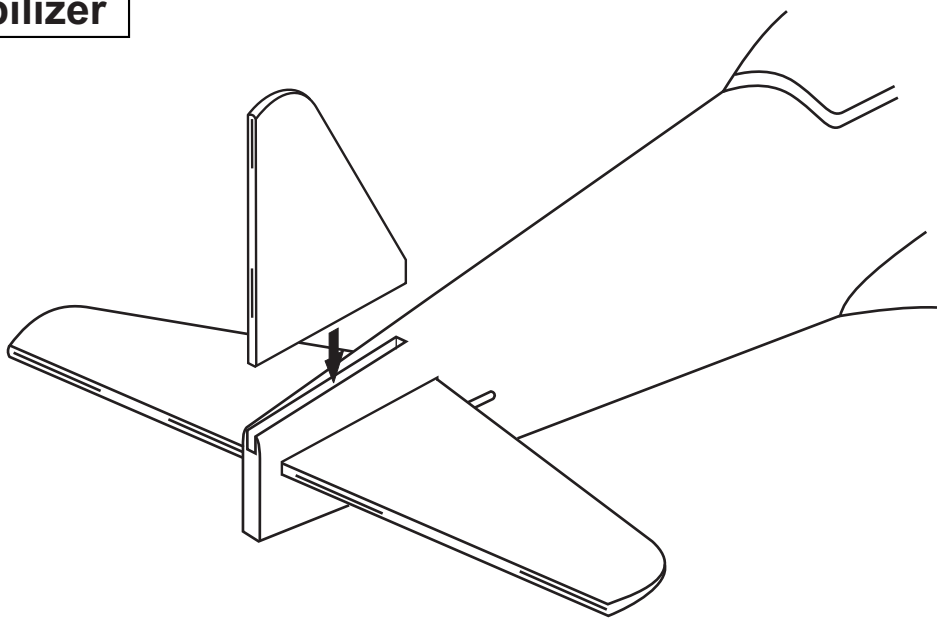
Use a small glue faucet, Apply the thin CA glue on the horizontal stabilizer where it contacts the fuselage **(both the top and bottom sides)**,and into the slot of the fuselage as show.

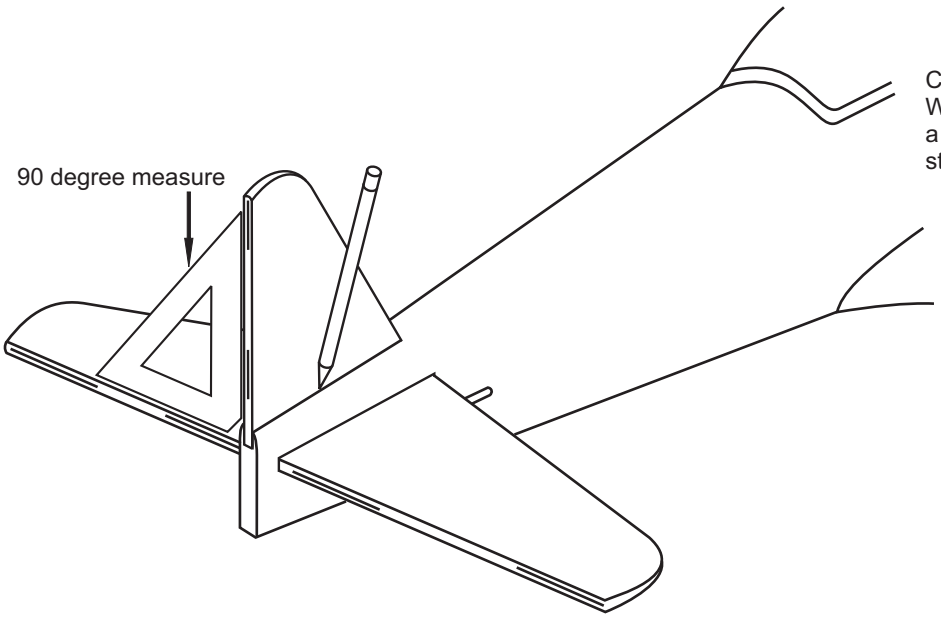
> **Securely glue together. If coming off during flight, you lose control of your air plane.**

YAK-9 12- Vertical stabilizer

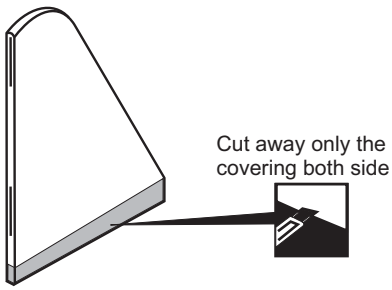


Note: The hinges are glued to the rudder only.



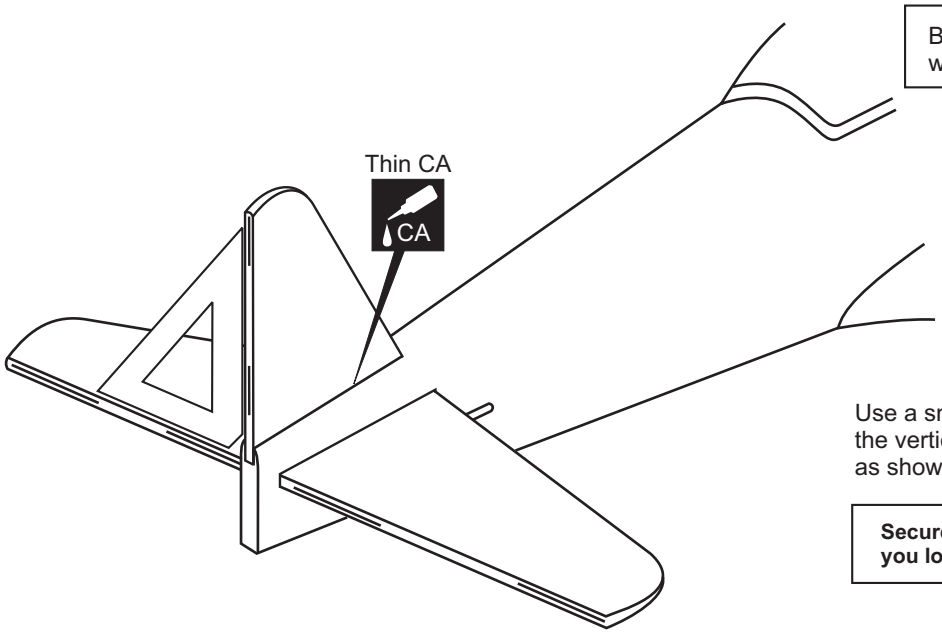


Check the alignment of the vertical stabilizer. When you are satisfied with the alignment, use a pencil to trace around the right and left of the stabilizer where it meets the fuselage.



Remove the vertical stabilizer from the fuselage.
Using the sharp hobby knife, carefully cut away the covering **inside the lines** which were marked above.

Be cautious **not to cut into the wood**, this will weaken the structure**.**

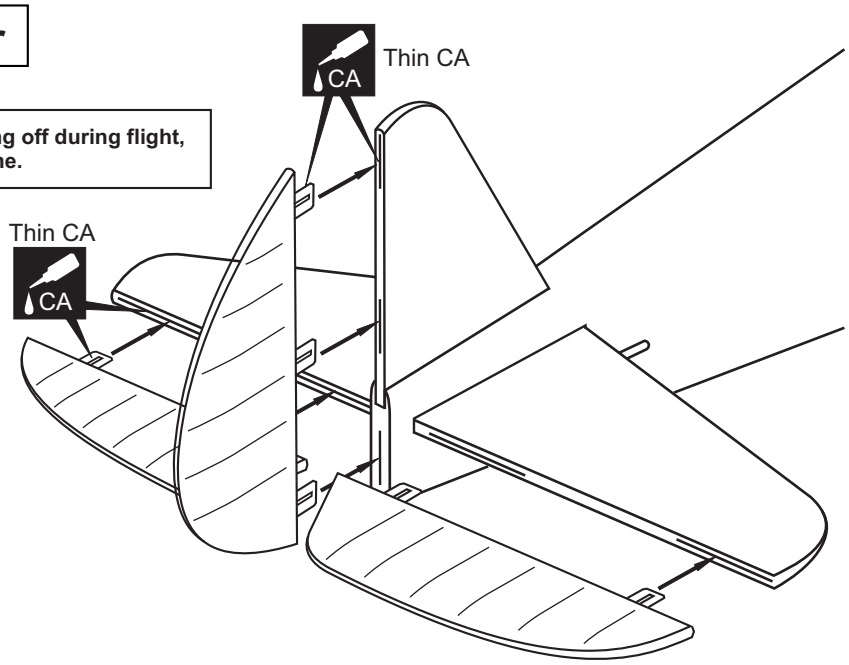


Use a small glue faucet, Apply the thin CA glue on the vertical stabilizer where it contacts the fuselage as show.

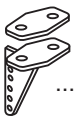
Securely glue together. If coming off during flight, you lose control of your air plane.

YAK-9 13- Vertical stabilizer

Securely glue together. If coming off during flight, you lose control of your air plane.



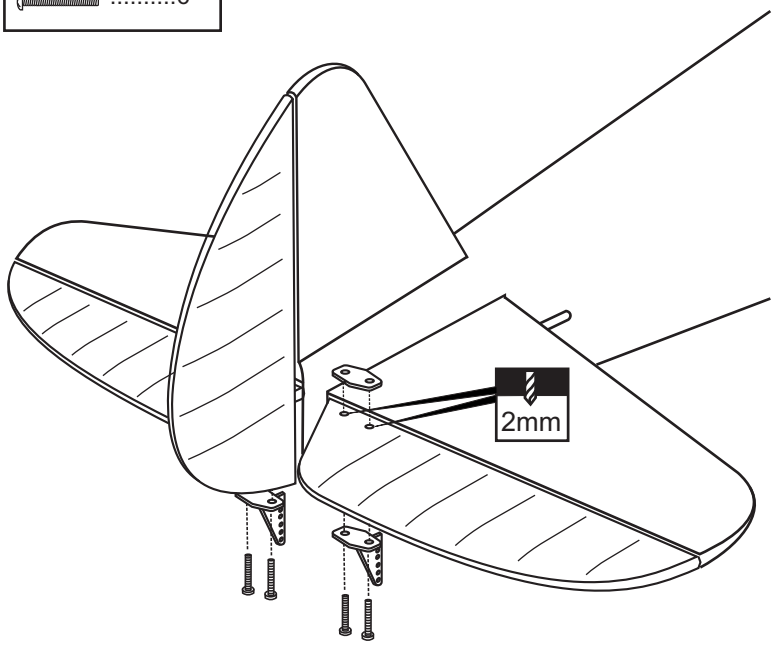
Control horn

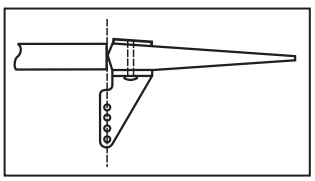


.....3

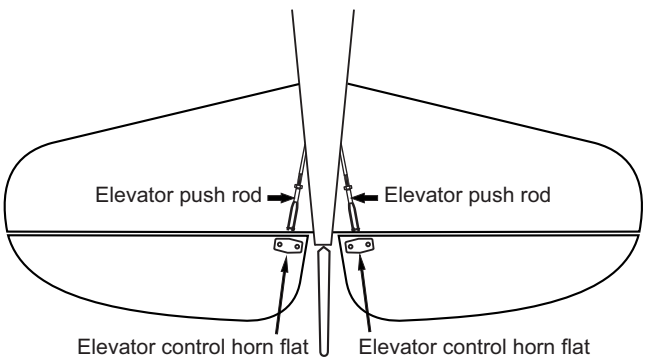
2x12mm screw

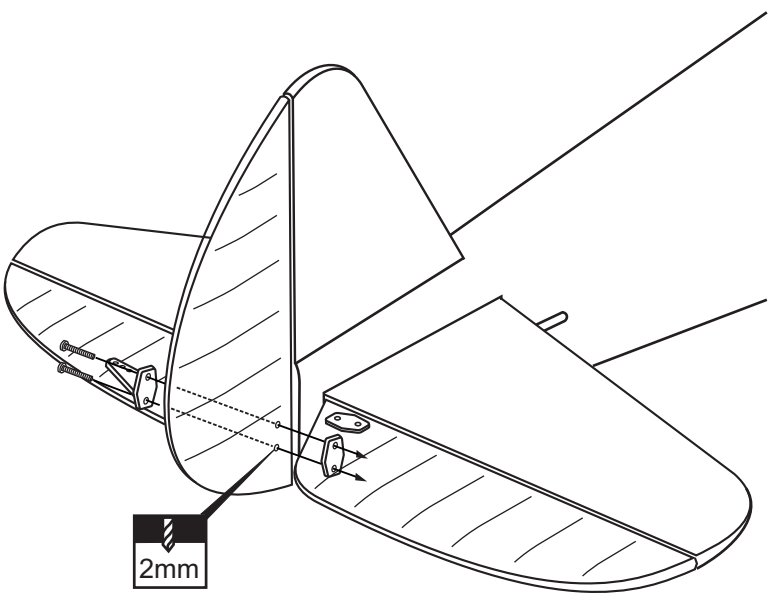
.....6



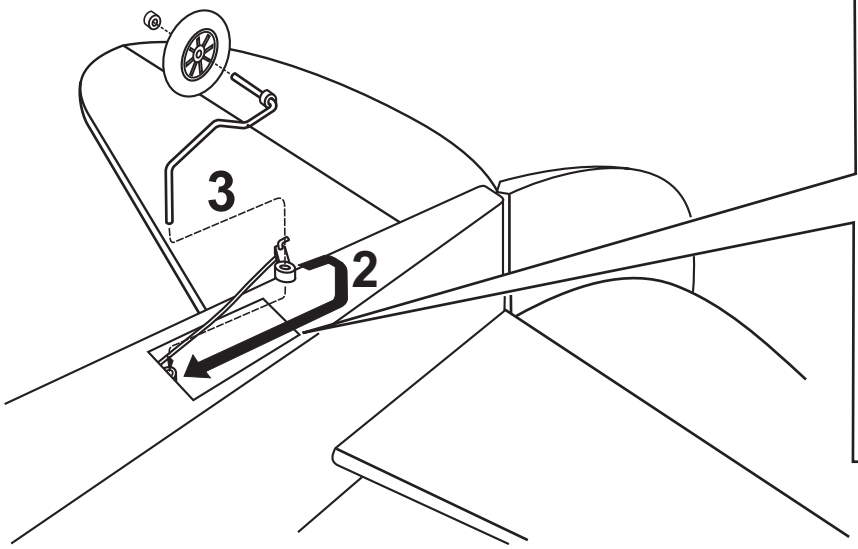


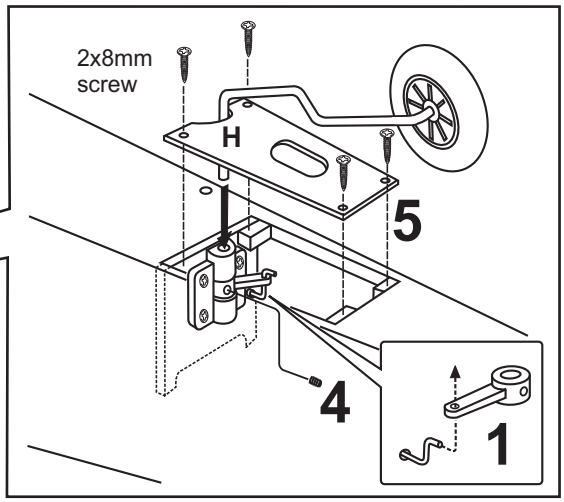
Note: Push the elevator push-rod into the fuselage before attach the elevator control horn.





YAK-9 14- Tail wheel





2x3mm screw 2	2mm I.D collar 2
2x18mm screw 4	Tail landing gear 1
Tail wheel control-horn 1	
1.2x800mm tail wheel push rod	

1- Insert the tail wheel pushrod into the hole on the tail gear control horn (as show).

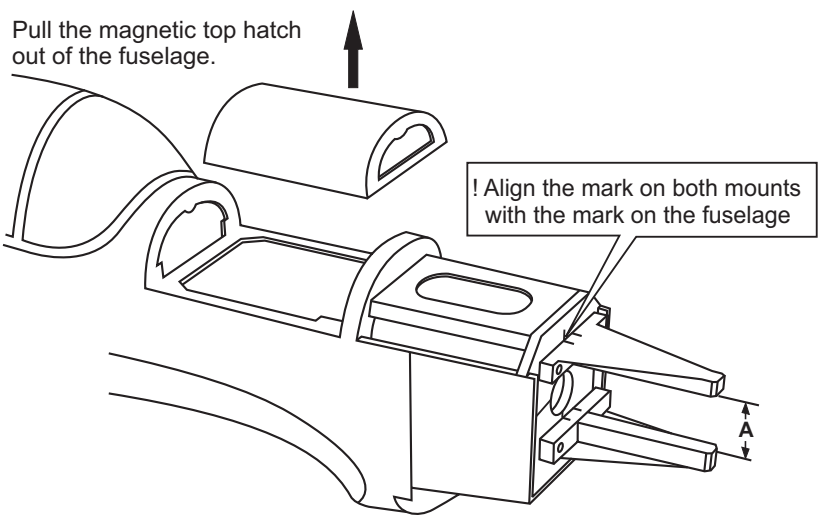
2- Install the tail wheel control horn in place.

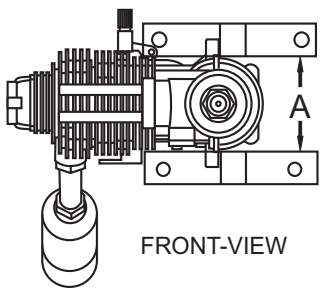
3- Instal the tail wheel gear in place.

4- Secure the tail wheel control horn in place using a 2mm screw set, Ensure smooth non-binding movement.

5- Installing the tail wheel hatch (H) in place using a four 2x10mm self tapping screws.

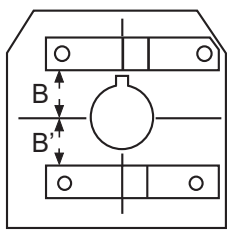
YAK-9 15- Glow engine





FRONT-VIEW

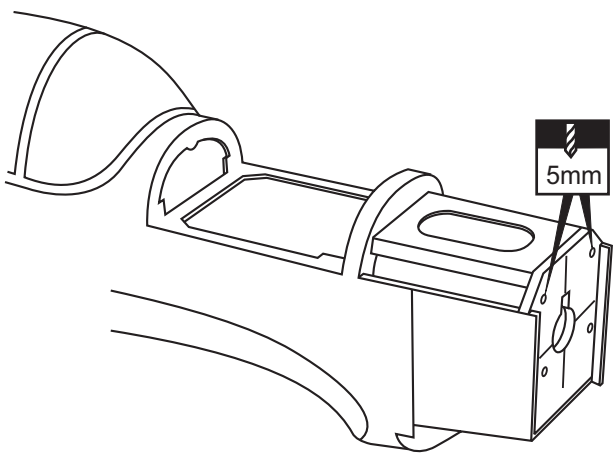
! Engine thrust on balk head is already adjust at factory



B=B'

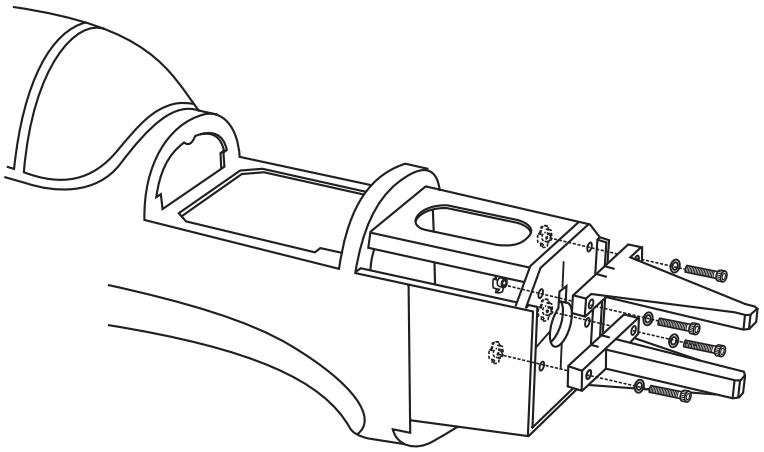
Attach the engine mount beams onto the fire-wall so the distance between of two engine mount beams is “A”. Secure the engine mount beams onto the fire-wall with litter CA glue.

Using a pencil or felt tipped pen, mark the fire wall where the four holes are to be drilled.

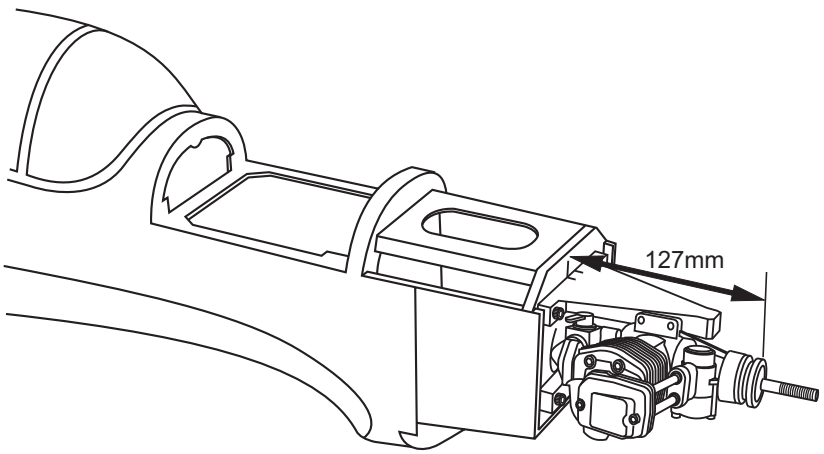


Remove the engine mount and drill a 5mm hole through the fire-wall at each of the four marks marked.

4x25mm hex bolt 4
Blind-nut 4
4mm washer 4

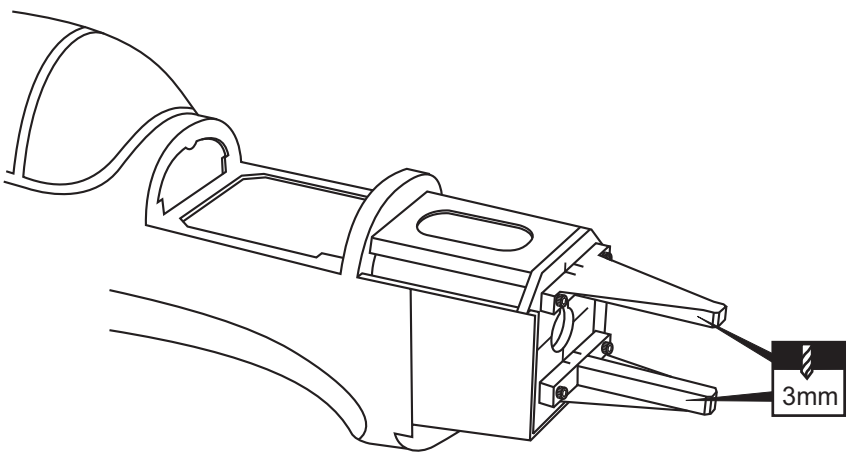


Attach the four blind-nuts to the fire-wall as show, then reposition the engine mounts on to the fire-wall and secure them with four 4x25mm hex bolts.

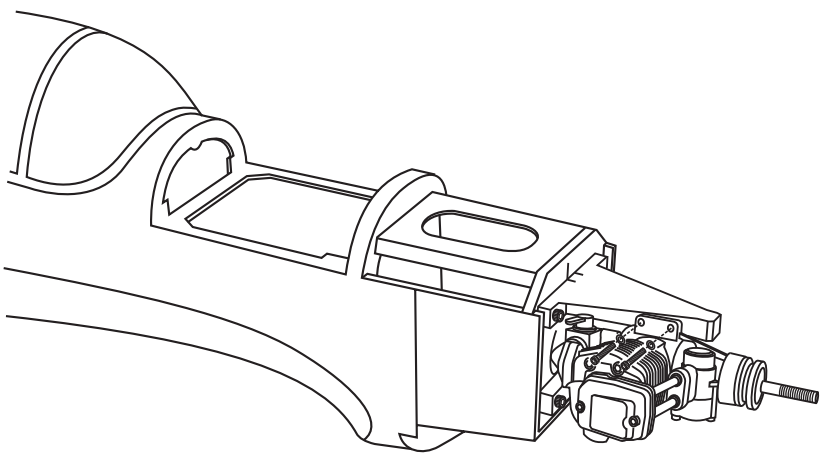


- Reposition the engine on to the engine mounts so the distance from the prop hub to the fire wall is 127mm

- Mark the engine mounting plate where the four holes are to be drilled.
Note: Mark the mounting plate through the engine mounting flanges.



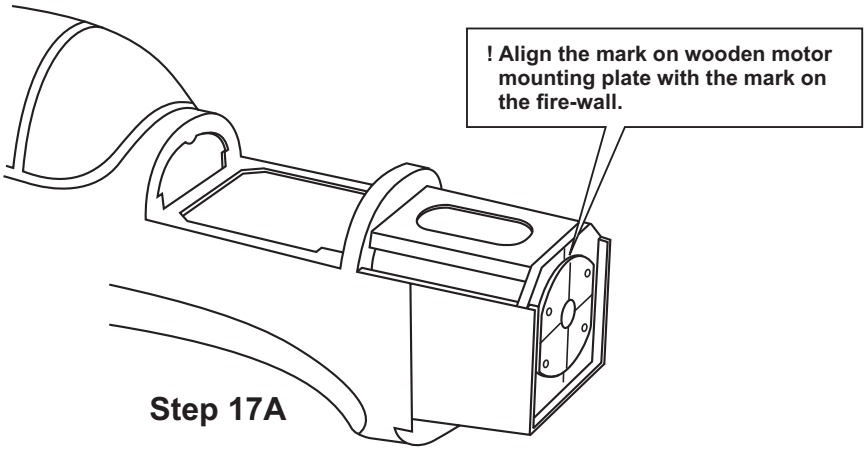
- Remove the engine and drill a 3mm holes through the beam at each of the four marks made above.



3x20mm hex bolt ...4
Nut 4

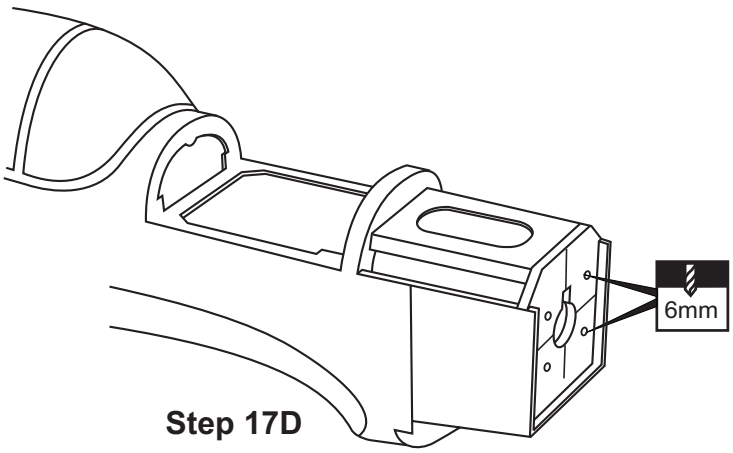
- Reposition the engine on the engine mount beams, aligning it with the holes. Secure the engine to the engine mount using four 3x25mm screws.

YAK-9 17- Electric motor



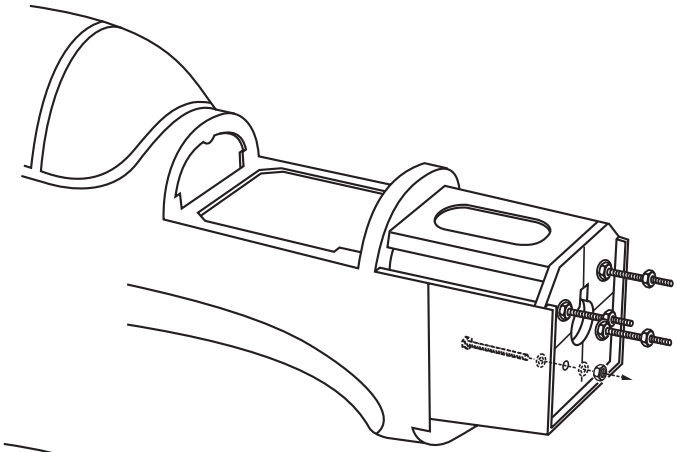
Step 17A

Using a wooden motor mounting plate as a template, mark the fire-wall where the four holes are to be drilled.

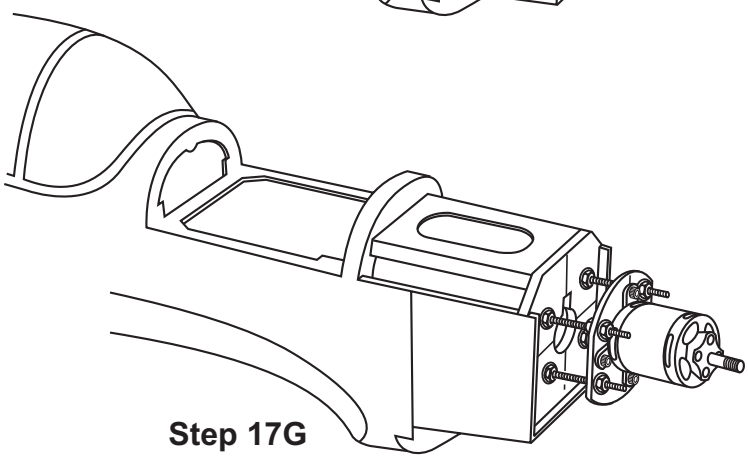


Step 17D

Remove the wooden motor mounting plate and drill a 6mm hole through the fire-wall at each of the four marks marked.

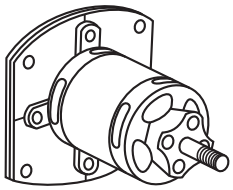


Attach the four 5x80mm bolts and nuts to the fire-wall as shown.



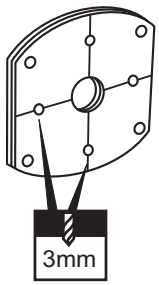
Step 17G

Step 17B

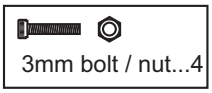


Using a aluminum motor mounting plate as a template, mark the plywood motor mounting plate where the four holes are to be drilled.

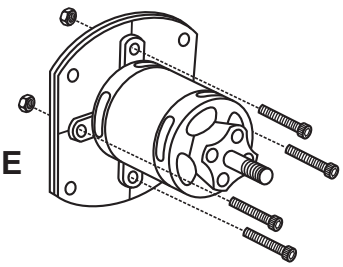
Step 17C



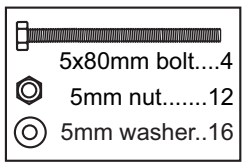
Remove the aluminum motor mounting plate and drill a 1/8”(3mm) hole through the plywood at each of the four marks marked .



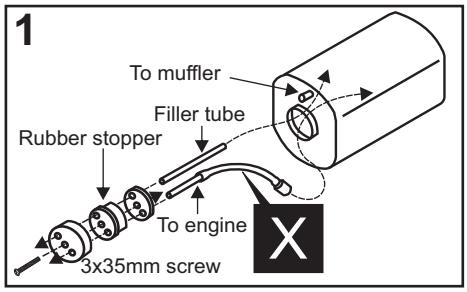
Step 17E

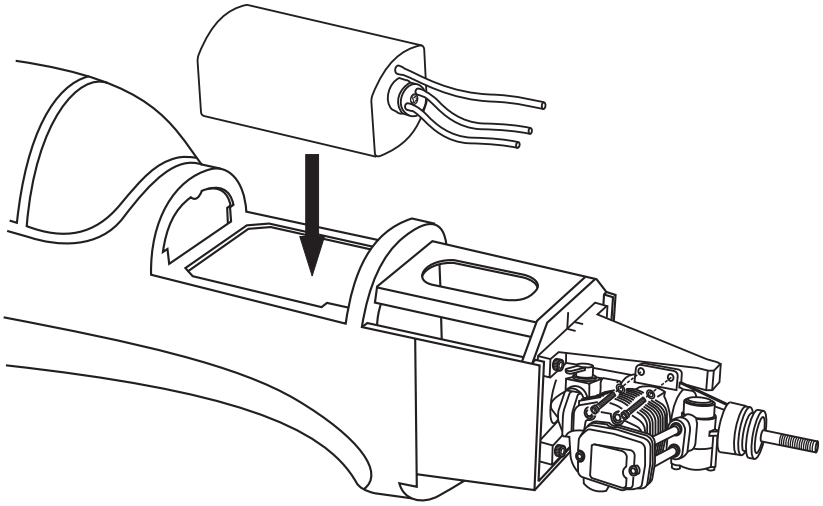


Secure the Motor to the wooden motor mounting plate using the four 3mm bolts.



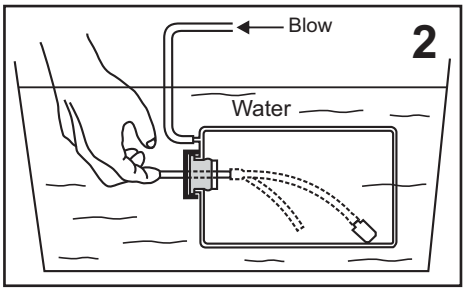
YAK-9 18- Fuel tank





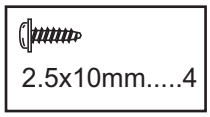
After confirming the direction . Insert this assembly, clunk end first, into the fuel tank and tighten and screw the fuel tankcap on firmly.

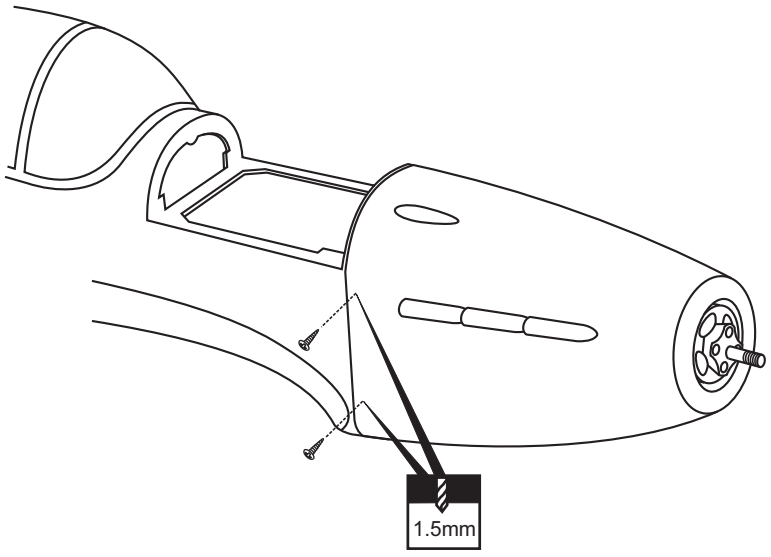
Ensure that the fuel tank clunk does not touch the rear of the fuel tank.

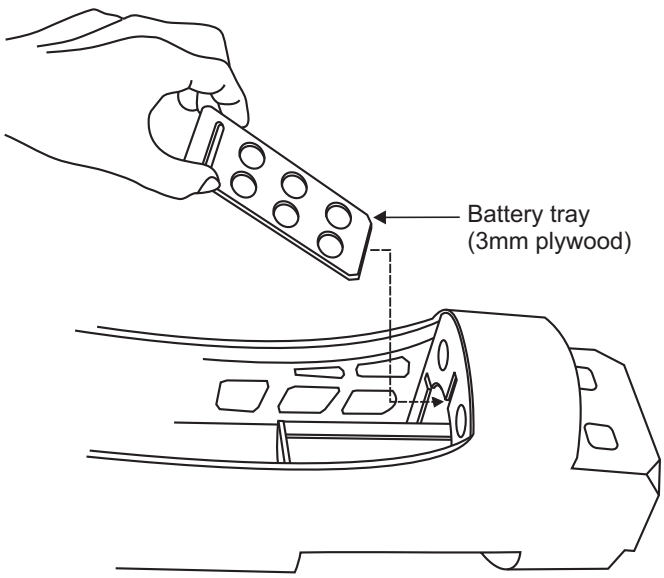


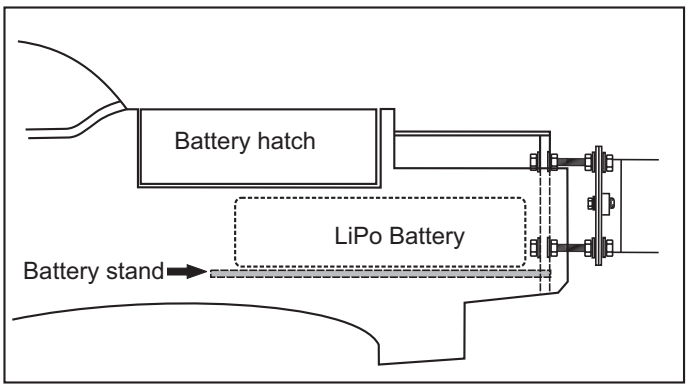
Checking for leaks - block the vents and blow into the feed, if in doubt submersing the tank in a blow of water will show up any problems.

YAK-9 19- Cowling & Li-po battery tray

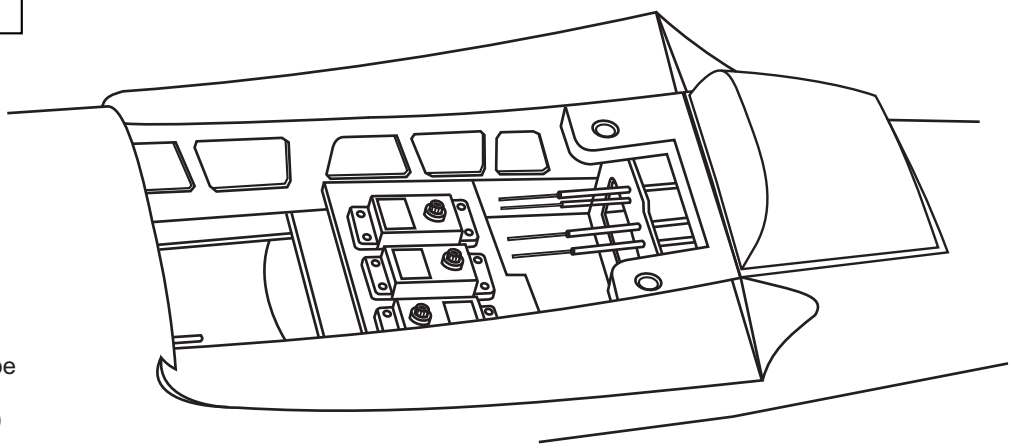






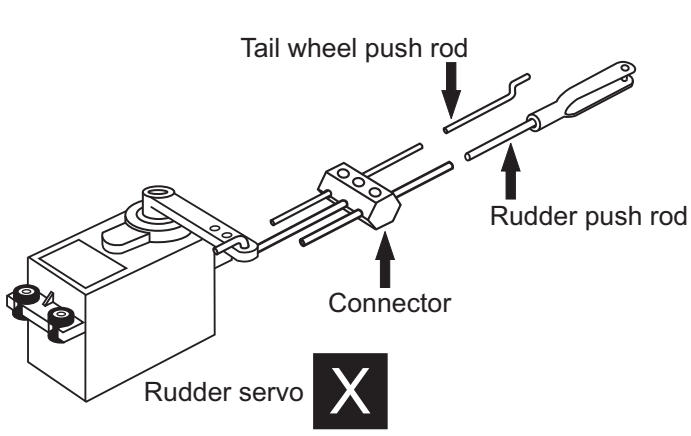


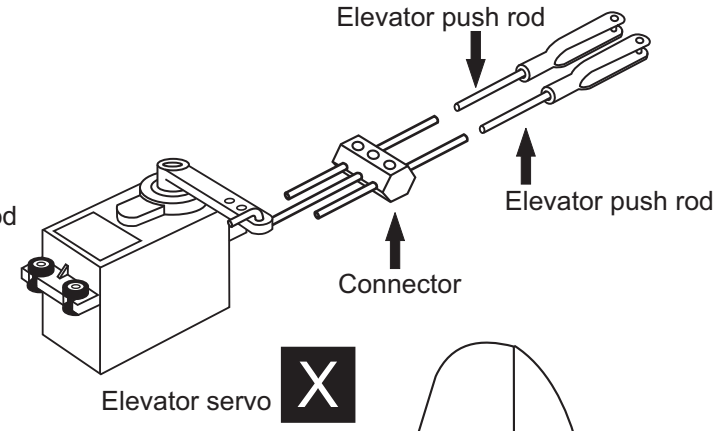
YAK-9 20- Servo

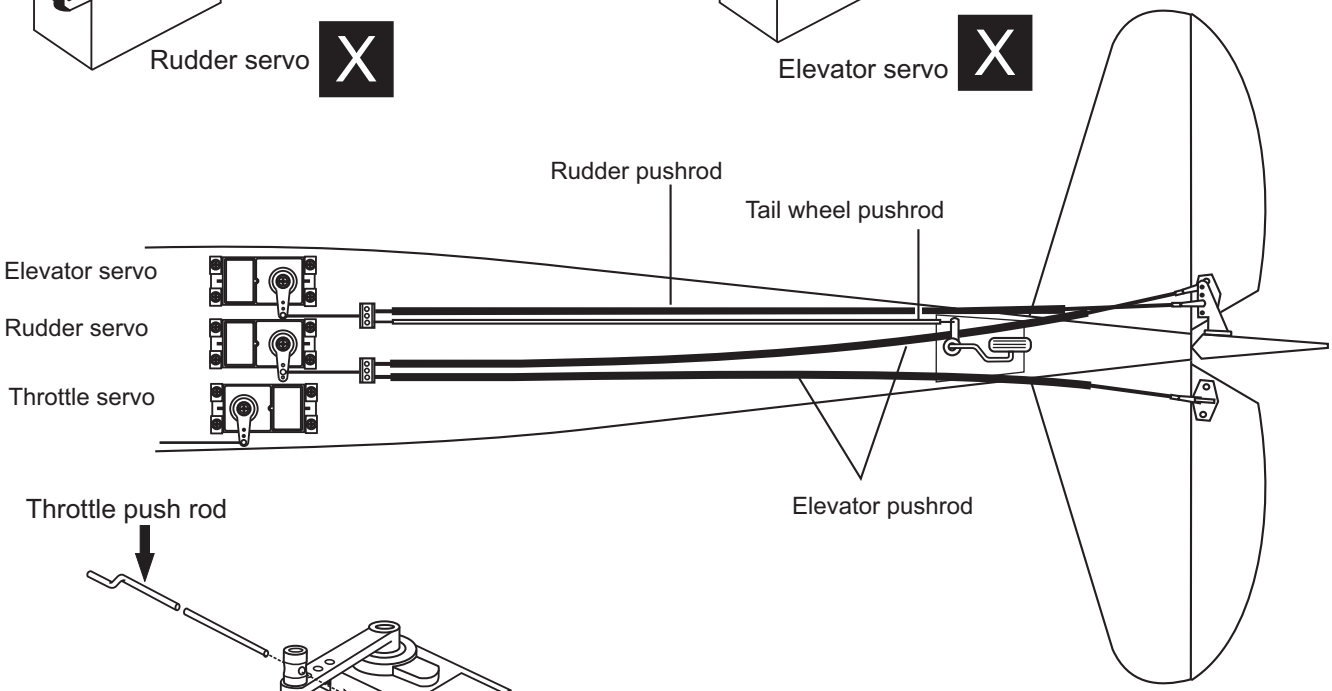


NOTE: Place of the servos may be change depend of engine (Four-stoke or two-stroke engine)

YAK-9 21- Linkages







Note: Tighten all screws, if they rotate out, you will lose control your plane.
Use silicon sealer for all screws.

Connector
..... 3

Connector
..... 1

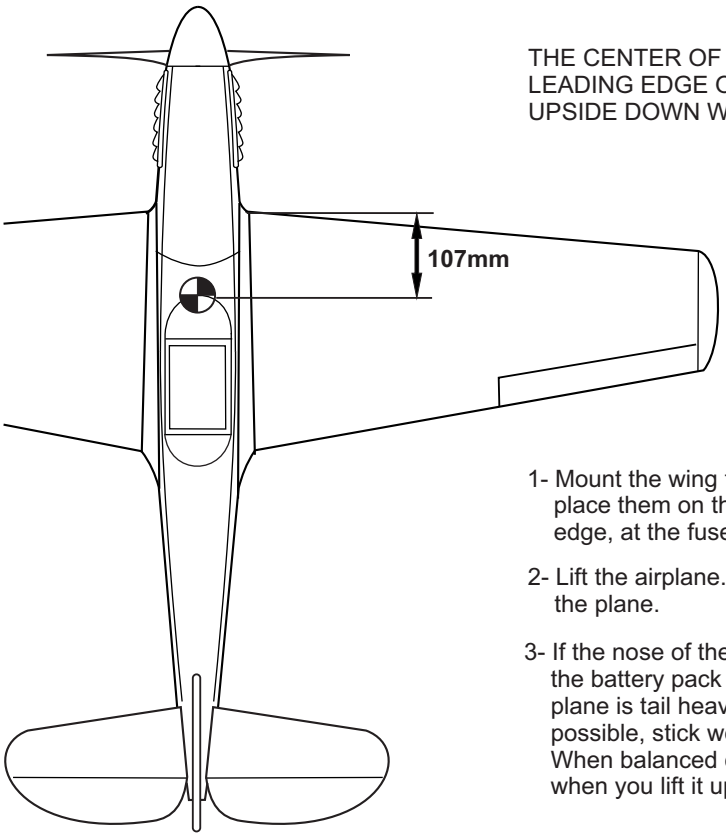
2x950mm rod with clevis
..... 3 (Elevator x2 , Rudder x1)

1.5x120mm rod....1 (for Elevator linkage)

1.2x500mm rod....1 (for throttle, in case of glow engine using)

1.2x800mm rod...1 (for tail wheel linkage)

YAK-9 22- Balance



THE CENTER OF GRAVITY IS LOCATED 107mm BACK FROM THE LEADING EDGE OF THE WING, AT THE FUSELAGE. BALANCE A PLANE UPSIDE DOWN WITH THE FUEL TANK EMPTY.

1- Mount the wing to the fuselage. Using a couple of pieces of masking tape, place them on the top side of the wing (107mm) back from the leading edge, at the fuselage sides.

2- Lift the airplane. Place your fingers on the masking tape and carefully lift the plane.

3- If the nose of the plane falls, the plane is heavy nose. To correct this, move the battery pack further back in the fuselage. If the tail of plane falls, the plane is tail heavy. To correct this, move the battery forward or if this is not possible, stick weight onto the firewall.
When balanced correctly, the airplane should level or slightly nose down when you lift it up with your fingers.

LATERAL BALANCE:

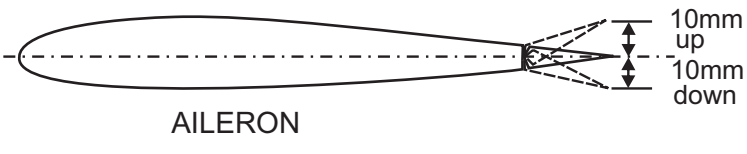
After you have balanced a plane on the CG, you should laterally balance it. Doing this will help the airplane track straighter.

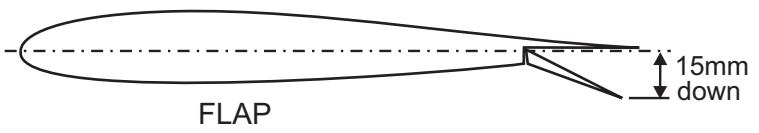
1- Turn the airplane upside down. Attach one loop of heavy string to the engine crankshaft and one to the tail wheel wire. With the wing level, carefully lift the airplane by the string. This may require two people to make easier.

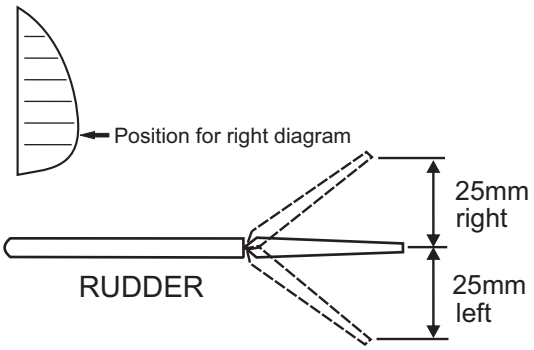
2- If one side of the wing fall, that side is heavier than the opposite. Add small amounts of lead weight to the bottom side of the lighter wing half's wing tip. Follow this procedure until the wing stays level when you lift the airplane.

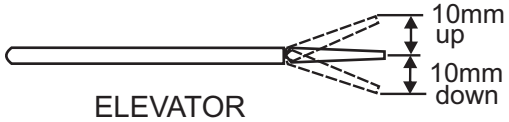
DO NOT try to fly an out-of-balance model !

YAK-9 23- Control surface









IMPORTANT: Flying your model at these throws will provide you with the greatest chance for successful first flights. If,after you have become accustomed to the way the Yak-9 flies, you would like to change the throws to suit your taste that is fine. However, too much control throw could make the model difficult to control, so remember, "more is not always better".

LOW RATE

Aileron	: 10mm up / down
Elevator	: 10mm up / down
Rudder	: 25mm right / left
Flap	: 15mm down

HIGH RATE

Aileron	: 12mm up / down
Elevator	: 12mm up / down
Rudder	: 30mm right / left
Flap	: 25mm down

IMPORTANT:

Please do not clean your model with pure alcohol, only use liquid soap with water or use glass cleaner to clean on surface of your model to keep the colour not fade.