

45 Class  
2-cycle engine

70 Class  
4-cycle engine

# MESSERSCHMITT

## Me-109

### INSTRUCTION MANUAL / Montageanleitung



# NEXA

#### TECHNISCHE DATEN

Spannweite	1560mm
Länge	1120mm
Elektroantrieb	G-46 HP Motor
Verbrennerantrieb	7.5cc 2-T / 8.5cc 4-T
Fernsteuerung	7 Kanal / 7 Servos

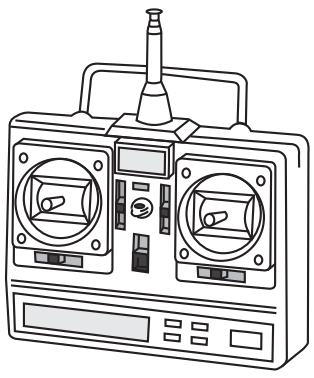
#### SPECIFICATIONS

Wingspan	1560mm
Length	1120mm
Electric Motor	G-46 HP Motor
Glow Engine	7.5cc 2-T / 8.5cc 4-T
Radio	7 Channel / 7 Servos

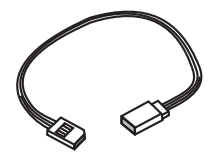
**WARNING!** This radio controlled model is NOT a toy. If modified or flown carelessly it could go out of control and cause serious human injury or property damage. Before flying your airplane, ensure the air field is spacious enough. Always fly it outdoors in safe areas and seek professional advice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

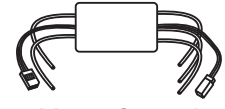
# REQUIRED FOR OPERATION (Purchase separately)



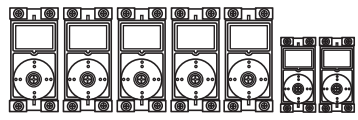
10.5x6 for .40 - 2 cycle engine  
 11x6 for .46 - 2 cycle engine  
 12x6 for .60 - 4 cycle engine  
 12x7 for .70 - 4 cycle engine  
 13x7 - 13x8 for Electric Motor



Extension for aileron servo, retract servo.

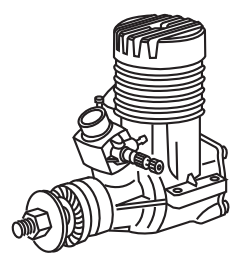


Motor Control

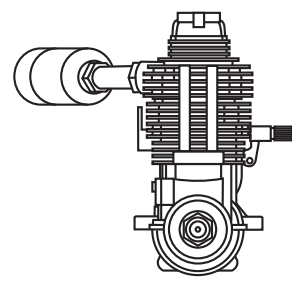


Minimum 7 channel radio for airplane with 5 standard servos and two mini servos.

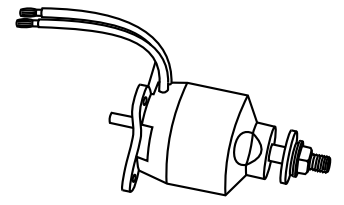
.Motor control x1 .Aileron x2  
 .Flapx2 .Elevator x1 .Rudder x1



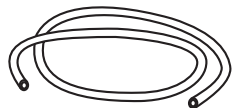
.46 ~ .50 - 2 cycle



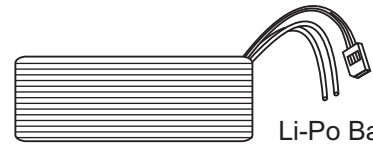
.60 ~ .70 - 4 cycle



G-46 HP Brushless Motor or equivalent.



Silicone tube



Li-Po Battery, 5 cell, 4500mAh

# GLUE (Purchase separately)



Silicon sealer

Cyanoacrylate Glue



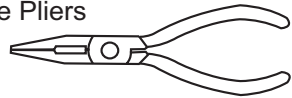
Epoxy Glue ( 5 minute type)  
 Epoxy Glue (30 minute type)

# TOLLS REQUIRED (Purchase separately)

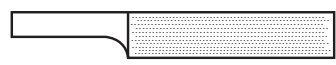
Hobby knife



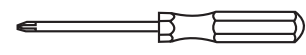
Needle nose Pliers



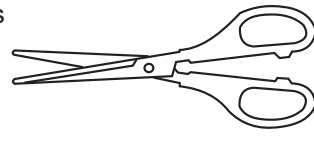
Sander



Phillip screw driver



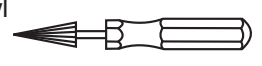
Scissors



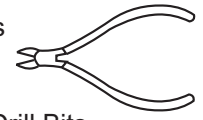
Hex Wrench



Awl



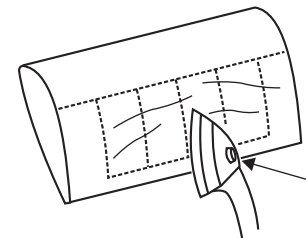
Wire Cutters



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

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

\* Use an iron or heat gun. Start as low setting. Increase the setting if necessary. If it is too high, you may damage the film



Low setting

Symbols used throughout this instruction manual, comprise:

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

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

# 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"	

## SAFETY NOTES BEFORE ASSEMBLING

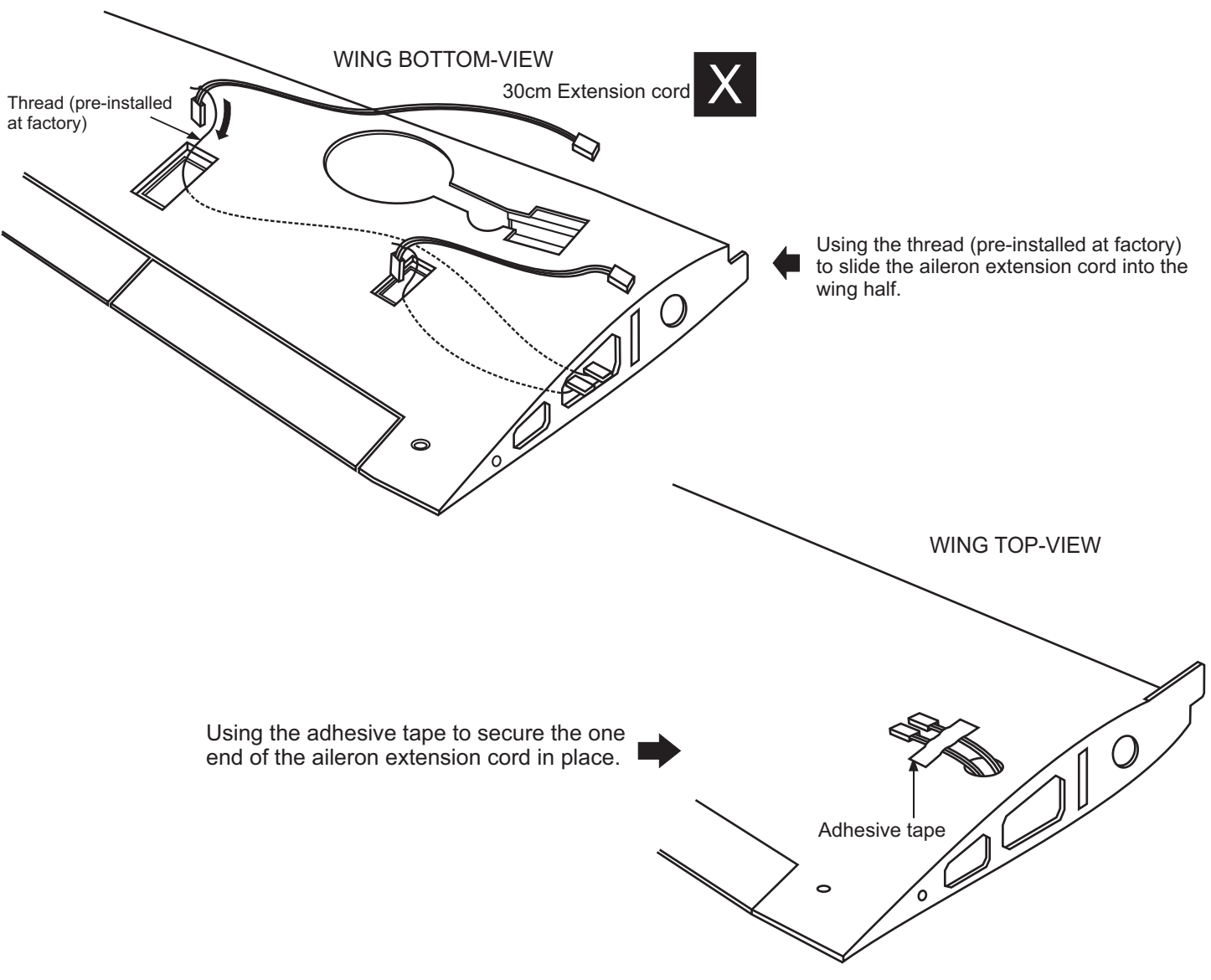
This model is highly pre-fabricated and can be built in a very short time. However, the work which you have to carry out is important and must be done carefully.

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.

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

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

# Messerschmitt Me-109 1-Aileron extension cord installation



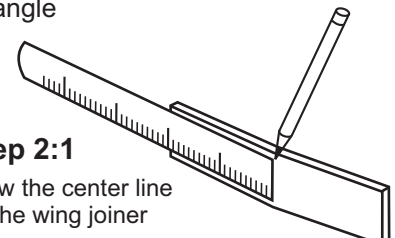
## 2- Joining the wing

### Before gluing:

- Draw the center line on the wing joiner.
- Trial fit each part before gluing . Be certain that there are no gaps. If the parts will join, but with a gaps, sand or trim the parts a little at a time until the parts meet exactly with no gaps.
- Check for the correct dihedral angle

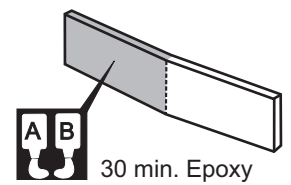
### Step 2:1

Draw the center line on the wing joiner



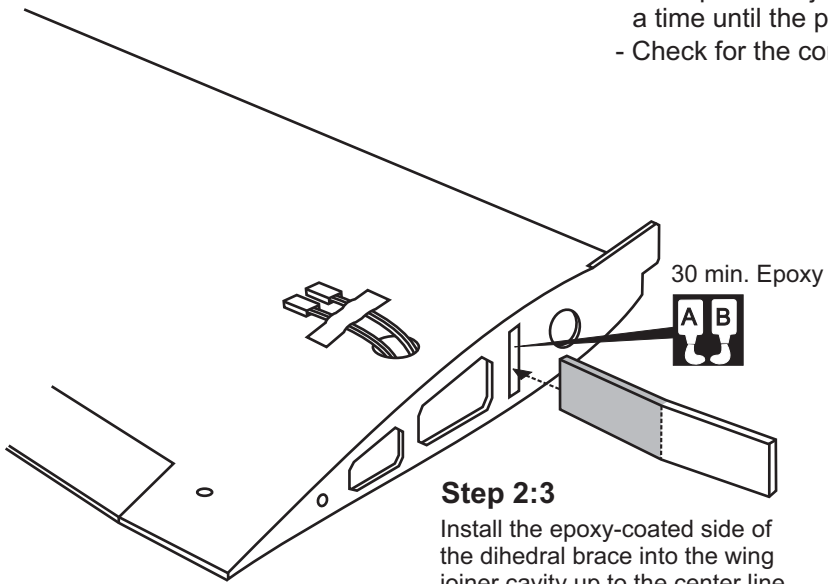
### Step 2:2

Coat one half of the dihedral brace with epoxy up to the center line.

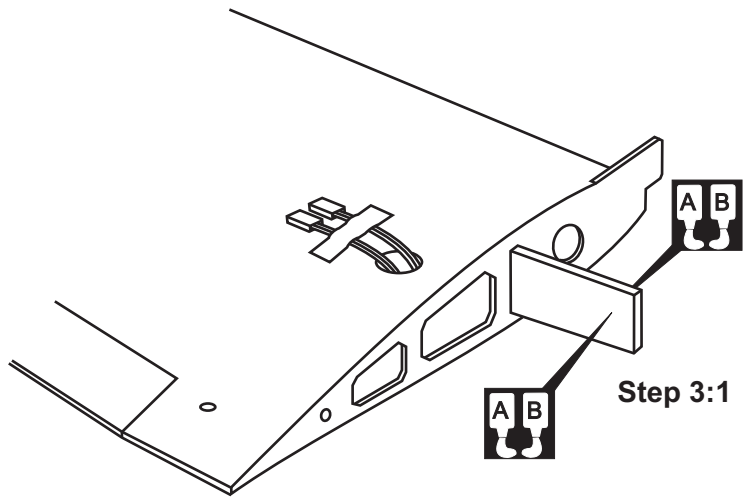


### Step 2:3

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



# Messerschmitt Me-109 3- Joining the wing



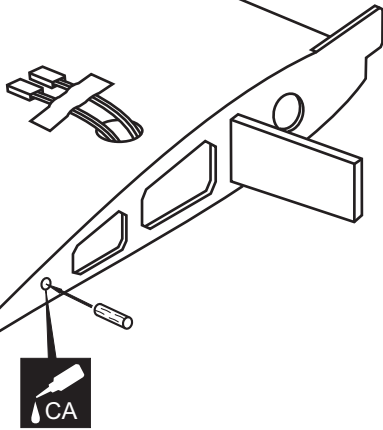
Step 3:1

## Step 3:2

### Note:

you may need to widen the hole a little more so that pushing the wooden dowel into the fuselage is not too difficult.

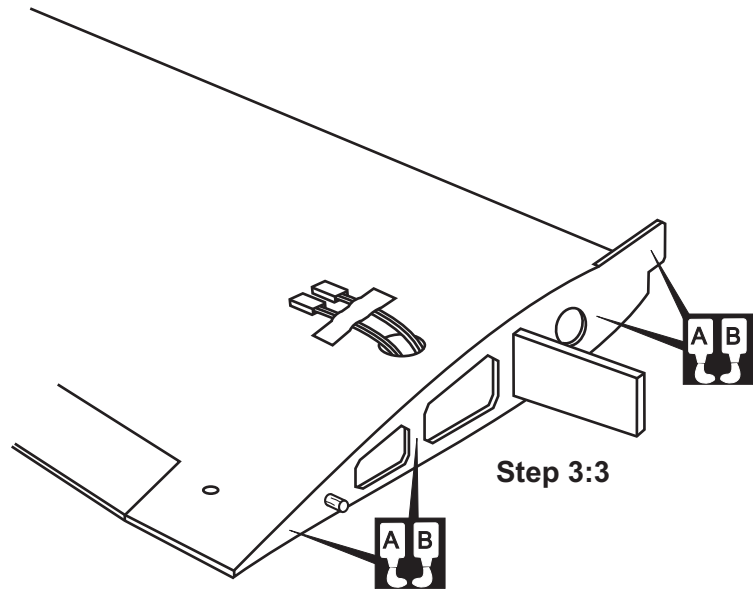
The wooden dowels must be perpendicular with the root rib.



Carefully slide the wing halves together, ensuring that they are accurately aligned.

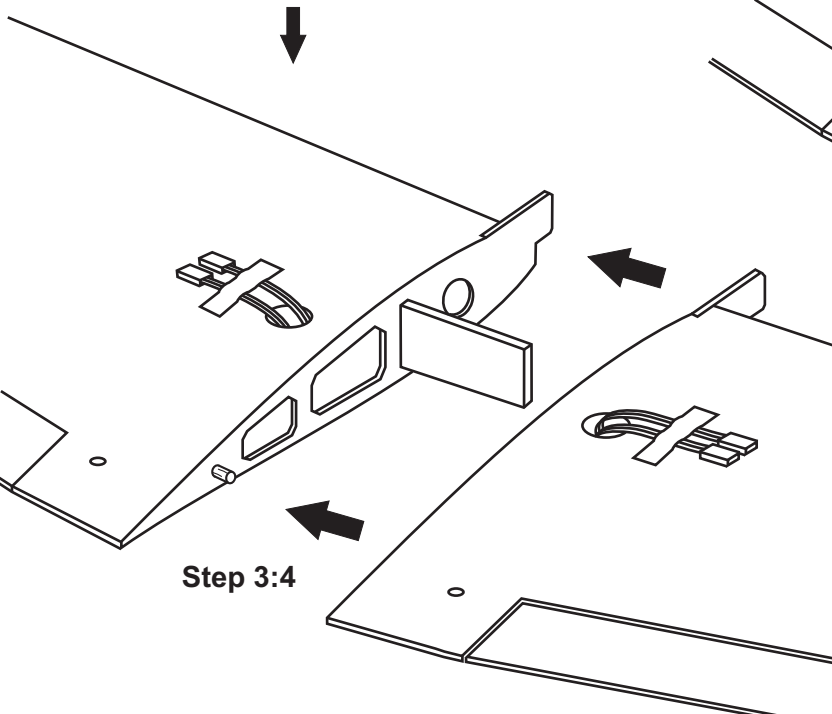
Firmly press the two halves together, allowing the excess epoxy to run out.

Note: The two wing halves roots must fit together perfectly. Clear off the excess epoxy.



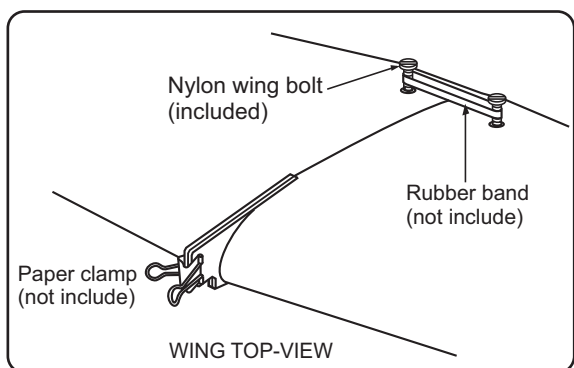
Step 3:3

30 min. Epoxy



Step 3:4

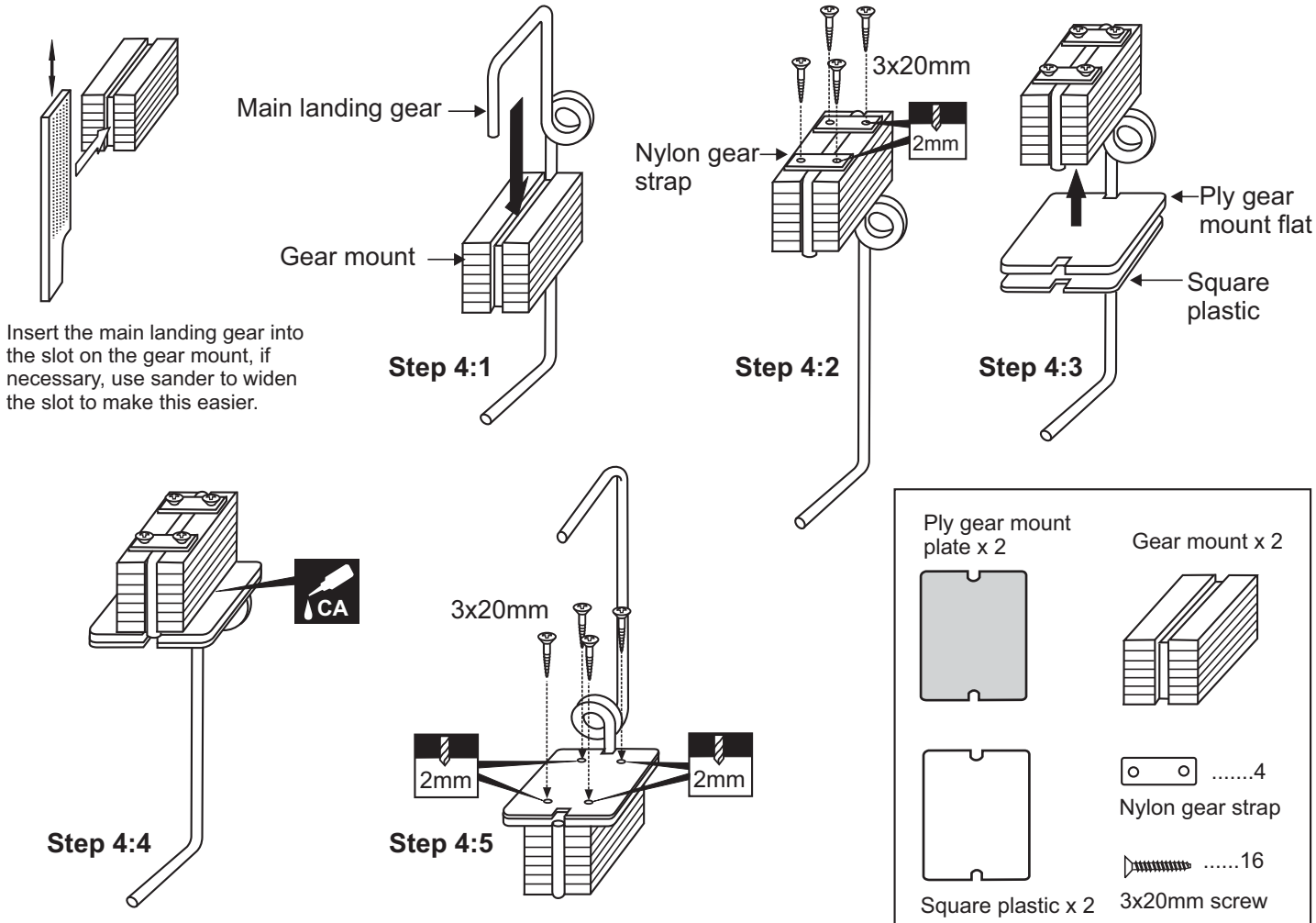
Hold the wing halves together with paper clamp and rubber band.



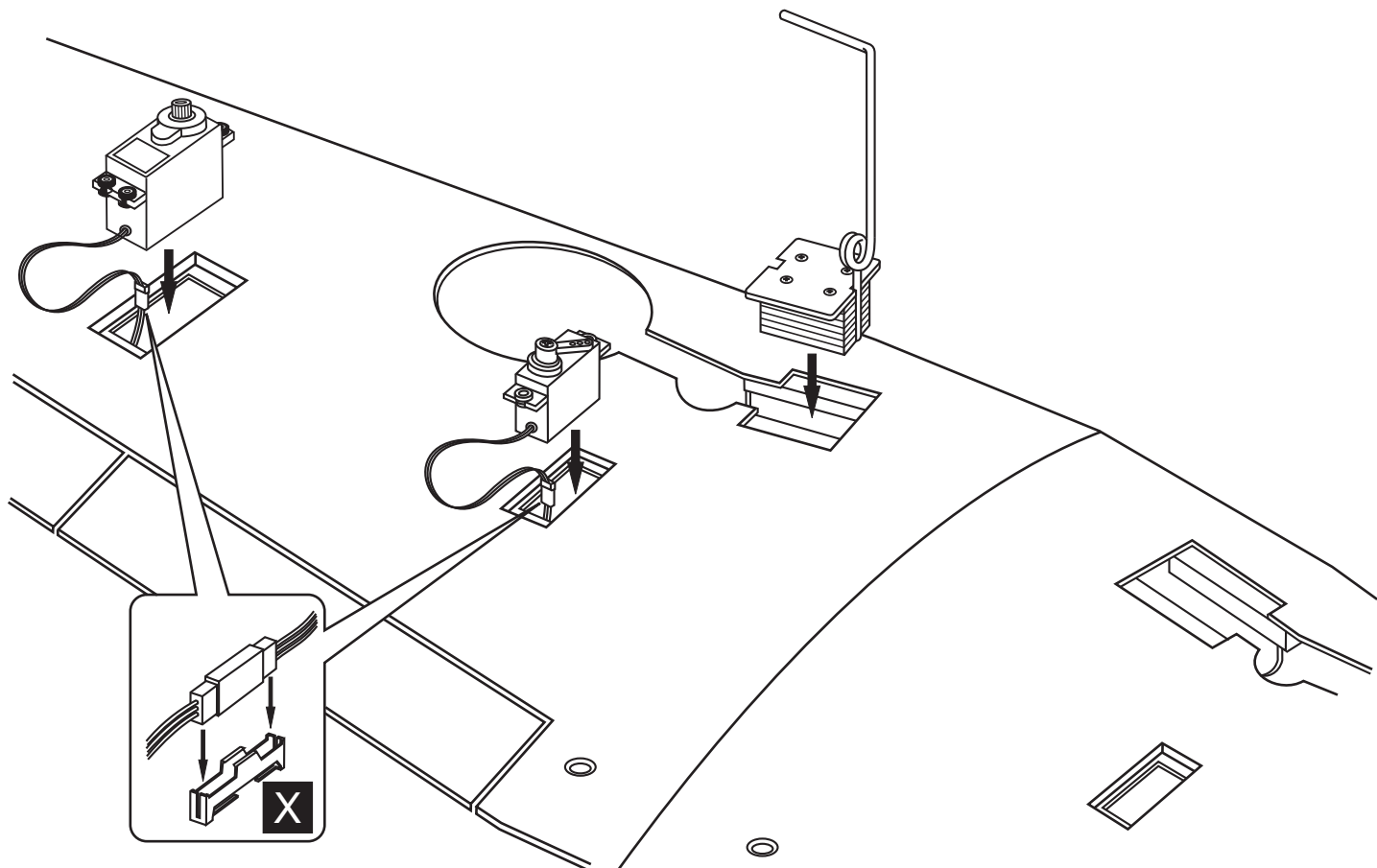
WING TOP-VIEW

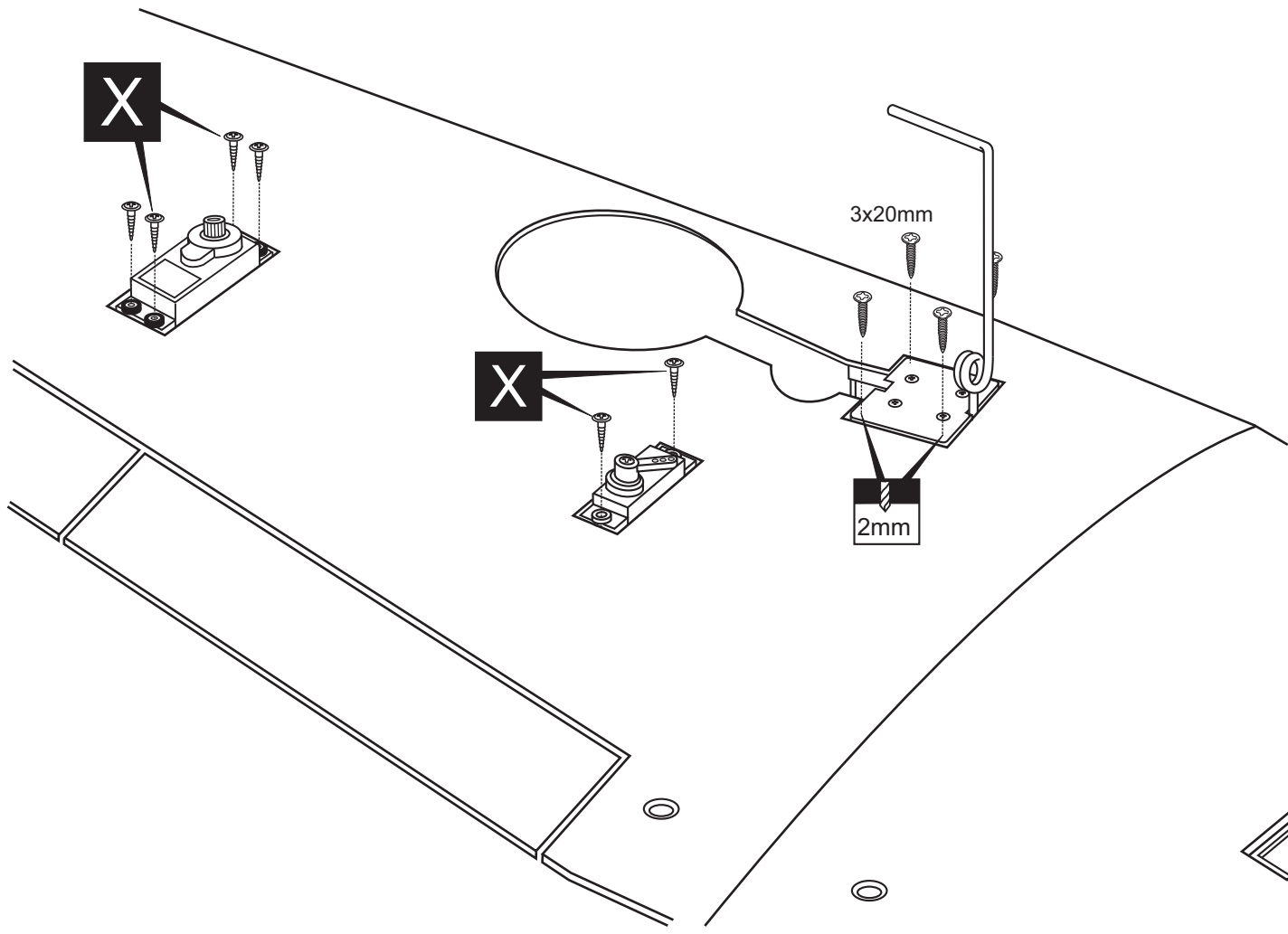
**IMPORTANT:** Please do not clean off the excess epoxy on the wing with strong solvent or pure alcohol, only use kerosene to keep the colour of your model not fade.

# Messerschmitt Me-109 4- Fixed gear

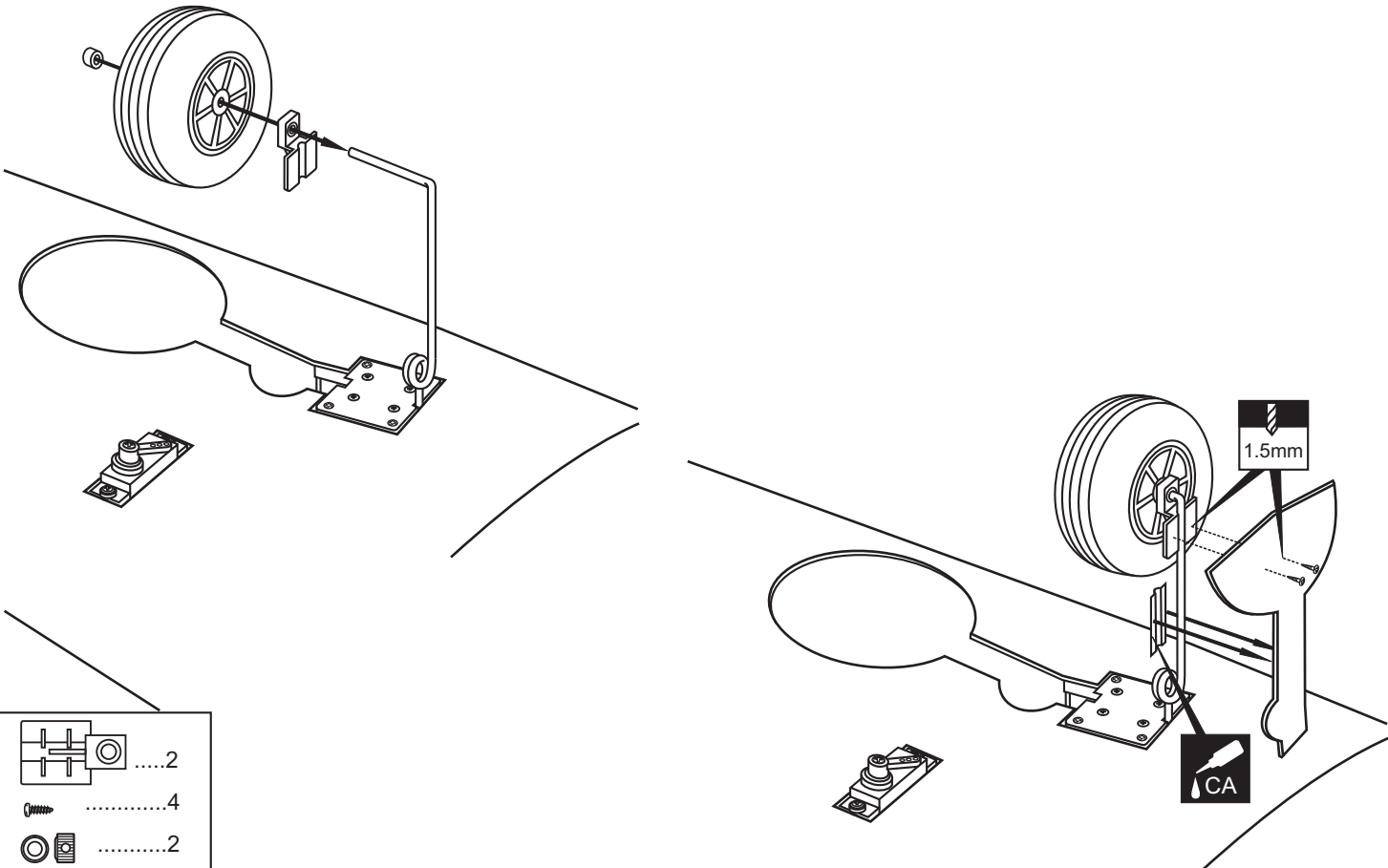


# 5- Aileron & Flap servo and fixed gear installing



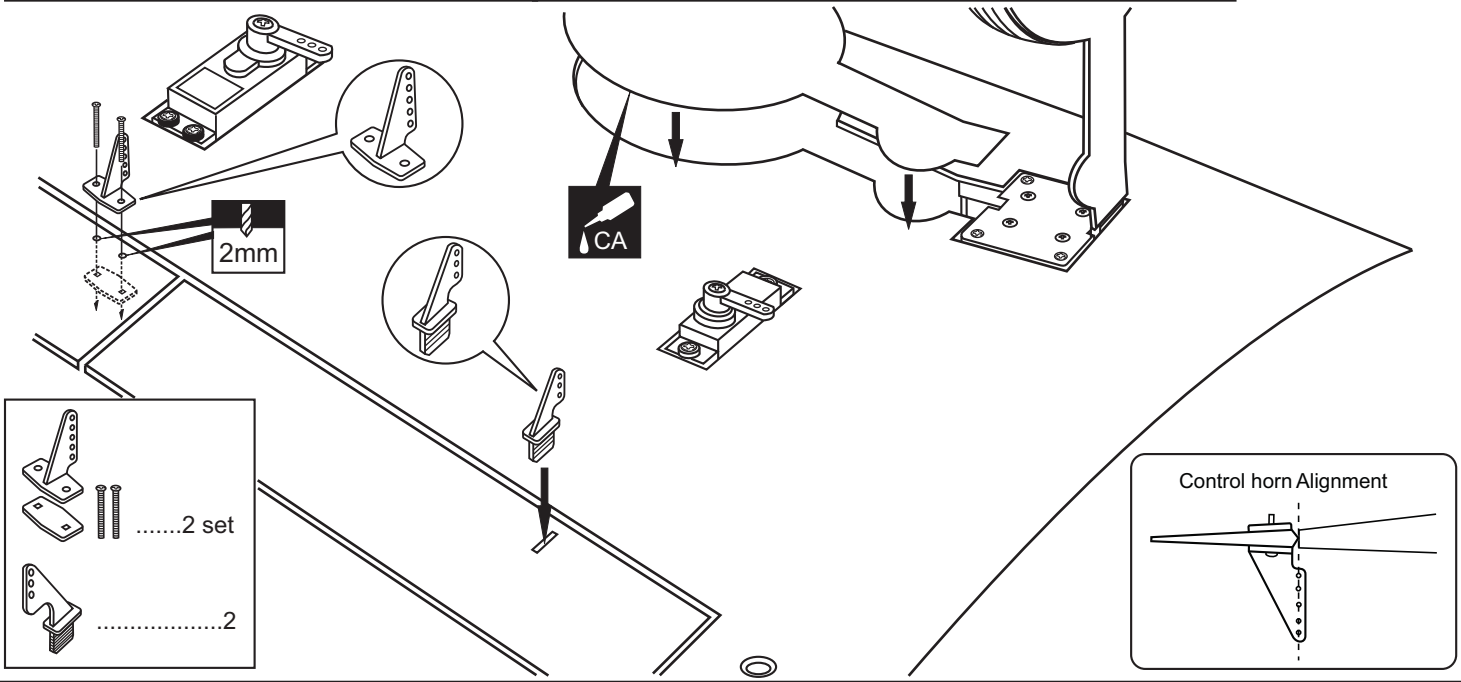


7- Main wheel

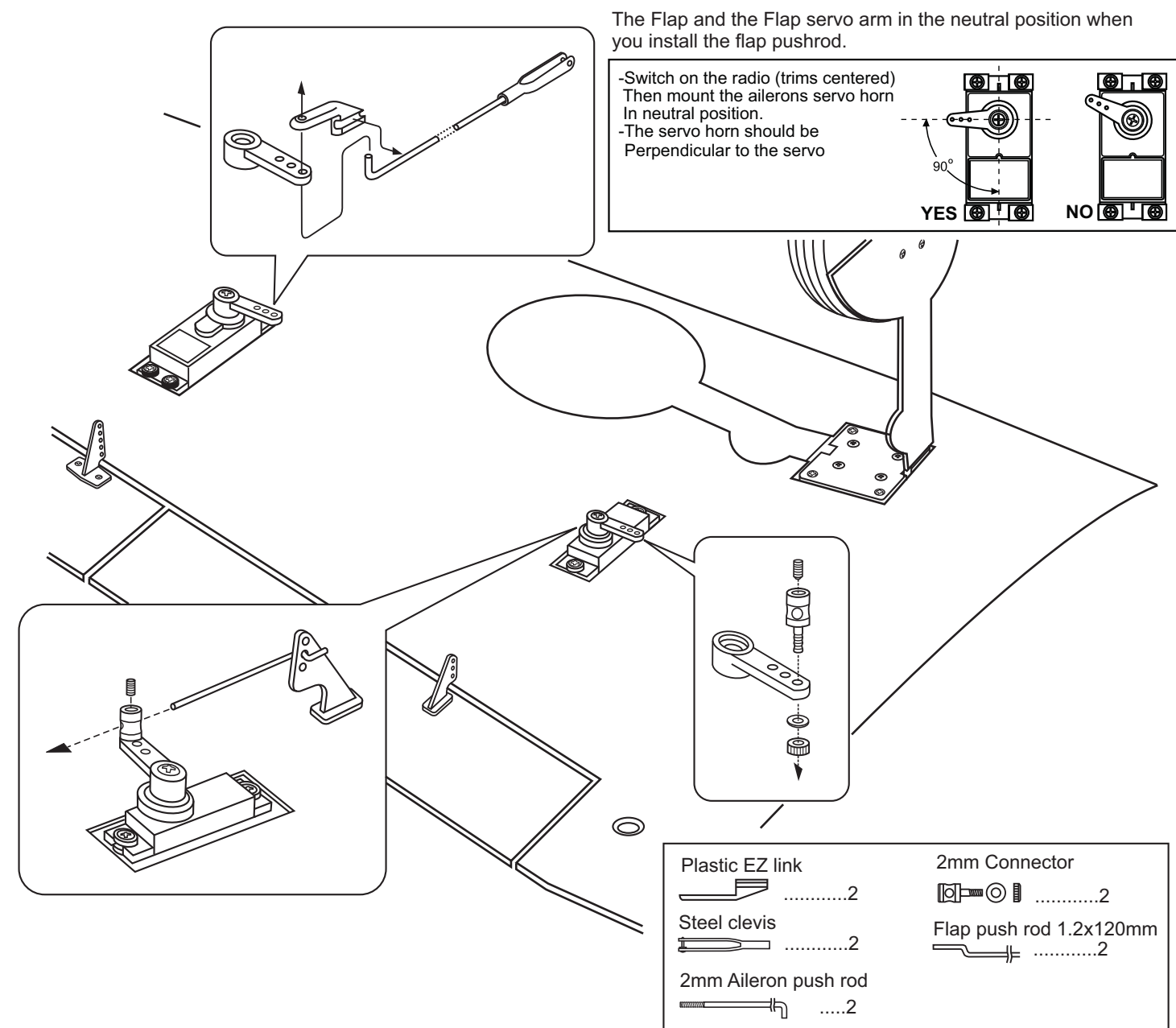


# Messerschmitt Me-109

## 8- Control horn and wheel cover



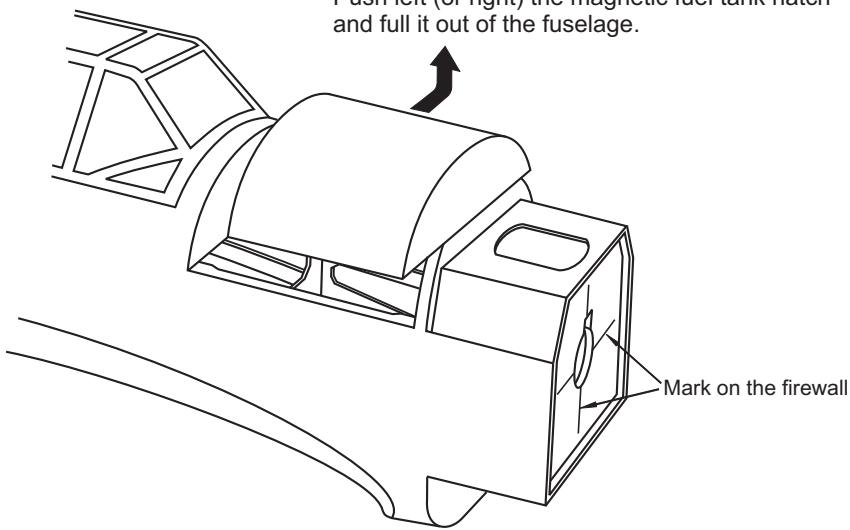
## 9- Aileron & Flap linkages





# Messerschmitt Me-109 10- Engine mount

Push left (or right) the magnetic fuel tank hatch and full it out of the fuselage.

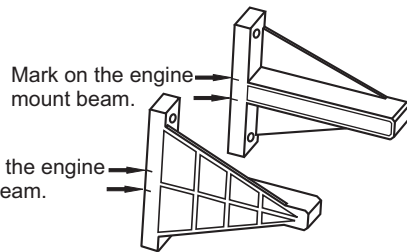


Attach the engine mount beams onto the fire-wall so the distance between of two engine mount beams is "A", and B=B' as show.

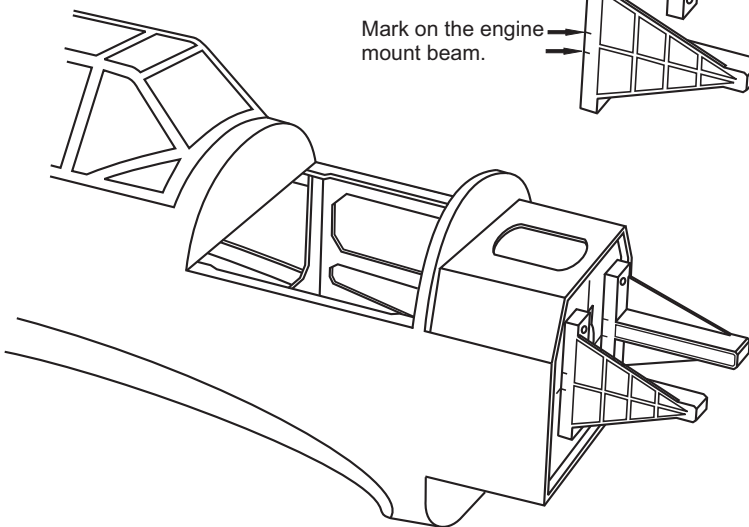
Secure the engine mount beams onto the fire-wall with litter CA glue.

**! Align the mark on both engine mount beams with the mark on the firewall.**

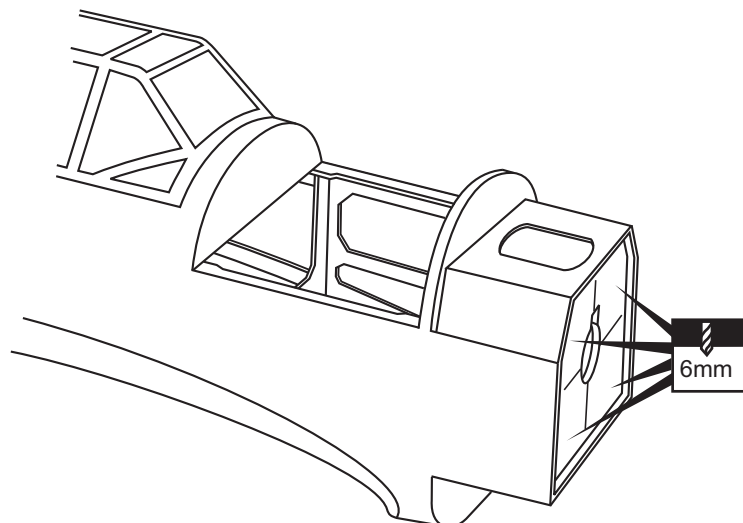
**Note: Engine thrust on balk head is already adjust at factory**



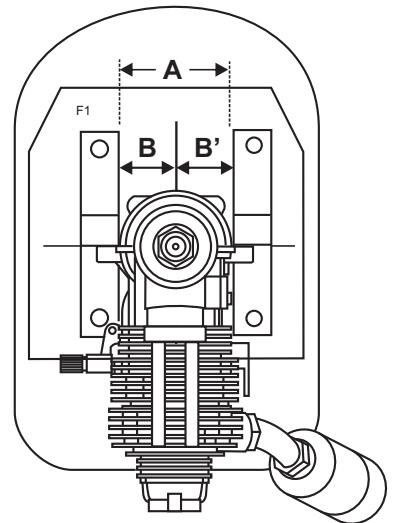
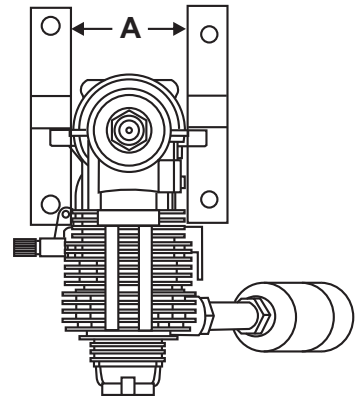
Mark on the engine mount beam.



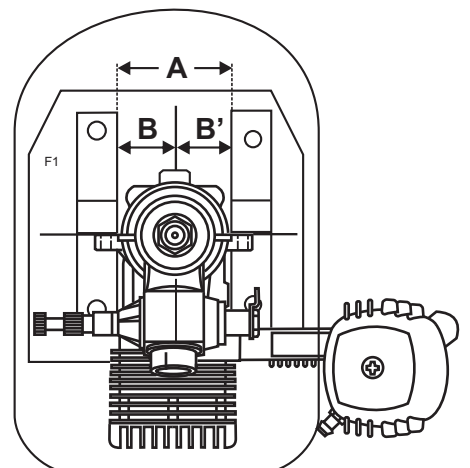
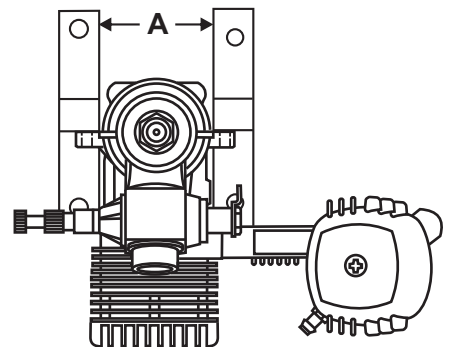
Using a pencil or felt tipped pen, mark the fire wall where the four holes are to be drilled.

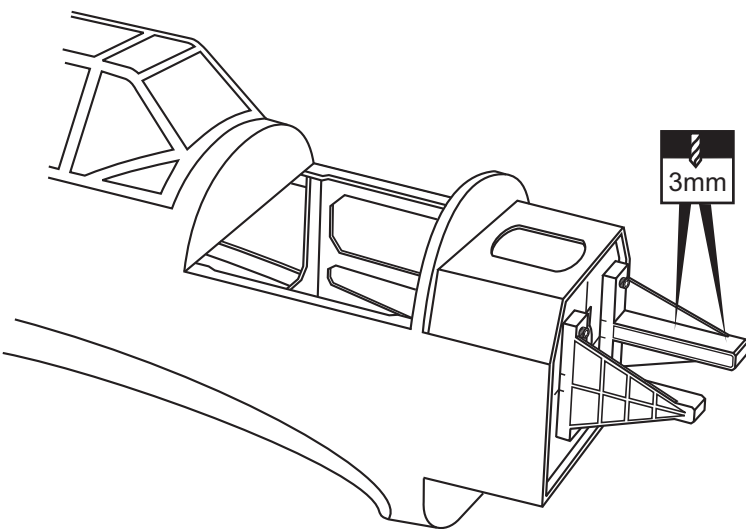
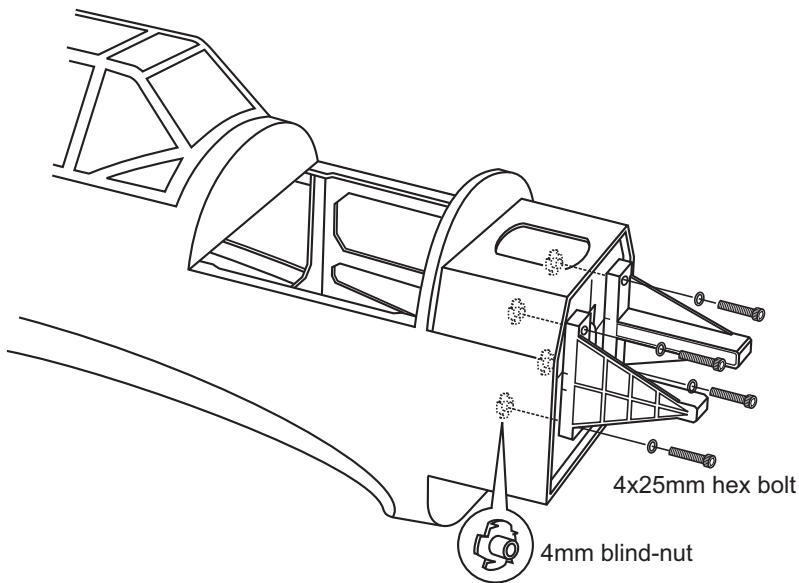
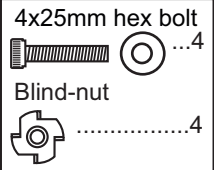


Remove the engine mount beams and drill a 6mm hole through the fire-wall at each of the four marks made above.



Fuselage - Front-view



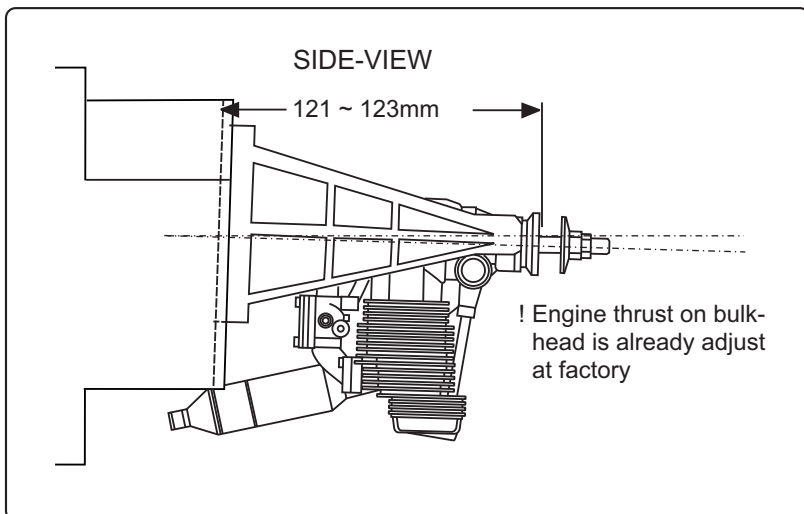


-Reposition the engine on the engine mount beams so the distance from the prop hub to the fire wall is 122mm.

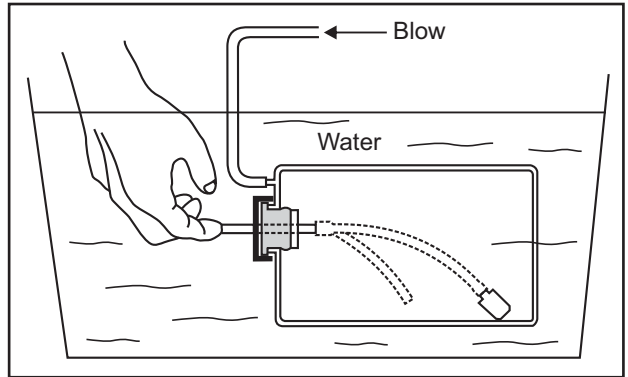
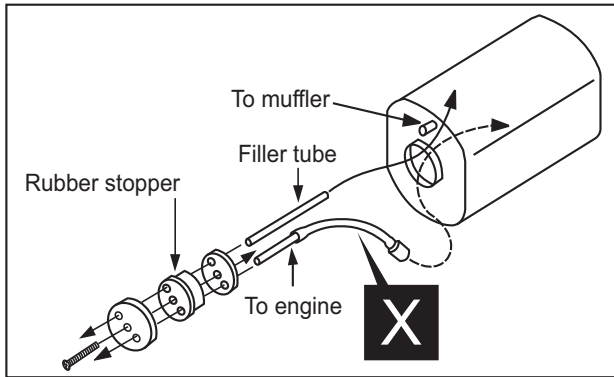
-Mark the engine mounting plate where the four holes are to be drilled.

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

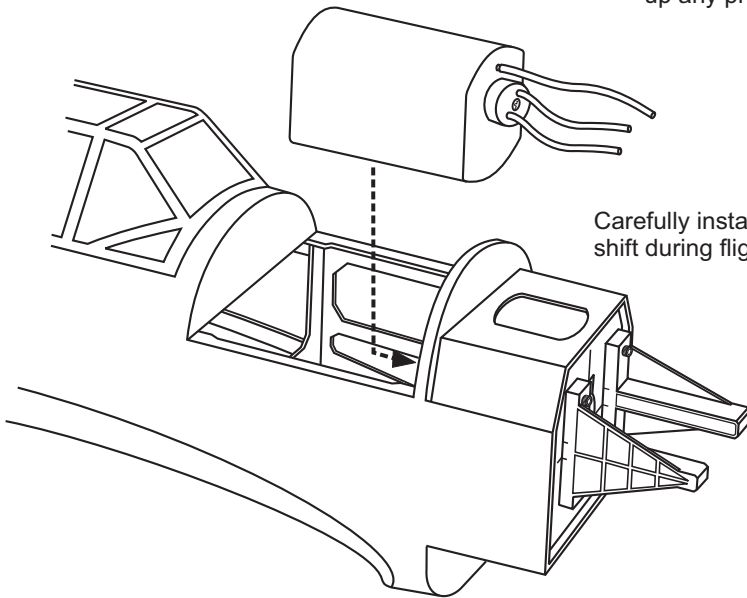
-Reposition the engine on the mounting beams , aligning it with the holes drilled. Insert one 3x25mm hex bolt through each of the mounting holes. Apply silicon (Blue-Locktile 242) to each of the 3x25mm hex bolt and firmly secure the engine to the engine mount using four 3mm nuts.



# Messerschmitt Me-109 12- Fuel tank

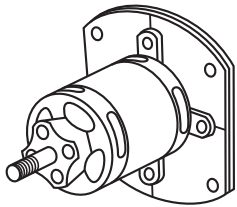


Checking for leaks - block the vents and blow into the feed. if in doubt submersing the tank in a blow of water will show up any problems.



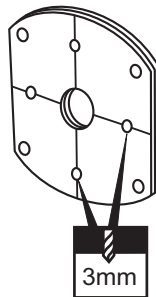
Carefully install the fuel tank to ensure that they will not shift during flight (secure the fuel tank in place using foam padding).

## 13- Motor mount



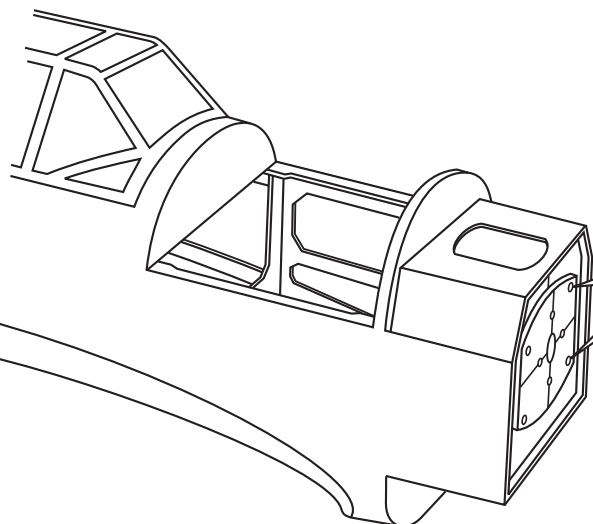
Using an aluminum motor mounting plate as a template, mark the plywood motor mounting plate where the four holes are to be drilled.

**Step 13:1**



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

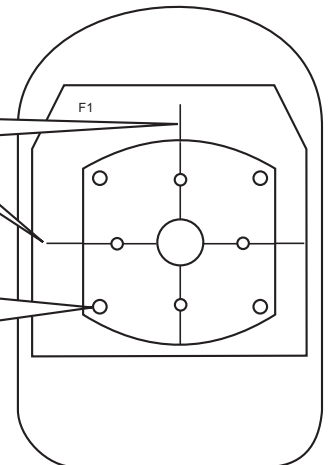
**Step 13:2**



**! Align the mark on wooden motor mounting plate with the mark on the fire-wall.**

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

**Step 13:3**



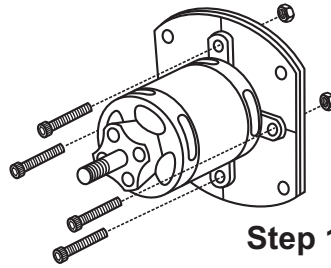
Fuselage - Front-view

Remove the wooden motor mounting plate and drill a 5mm hole through the fire-wall at each of the four marks marked .



**Step 14:1**

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

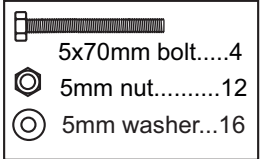


**Step 14:2**

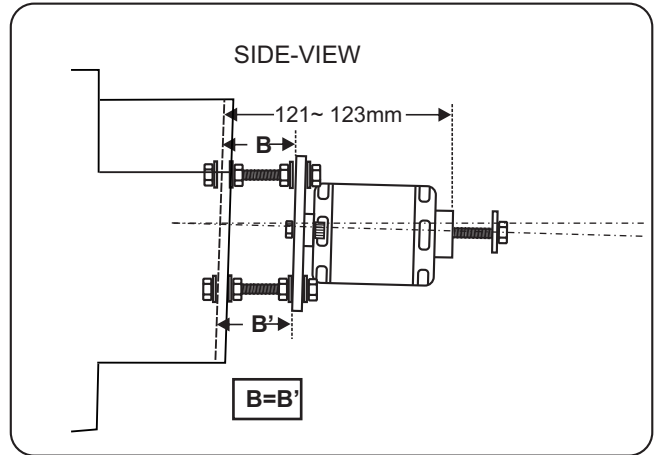


Attach the four 5x70mm bolts and nuts to the fire-wall as shown.

**Step 14:3**

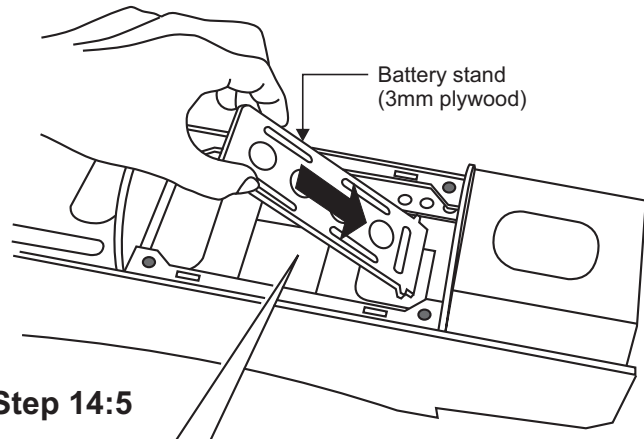


**SIDE-VIEW**

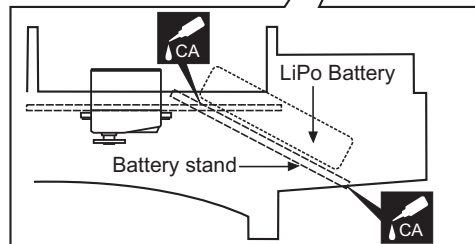


**Step 14:4**

Battery stand (3mm plywood)

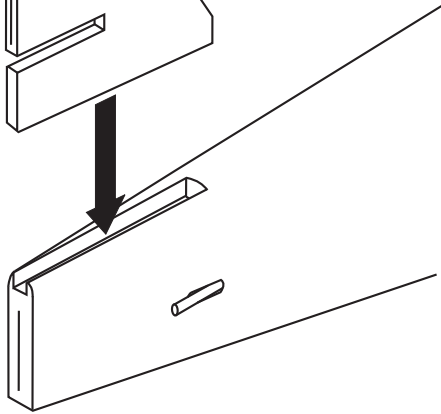


**Step 14:5**

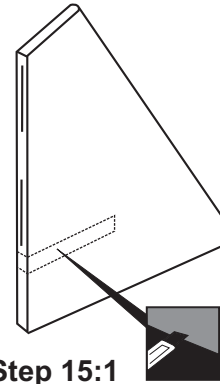


**Step 15:2**

Trial fit the vertical stabilizer in place .  
Check the alignment of the vertical stabilizer.

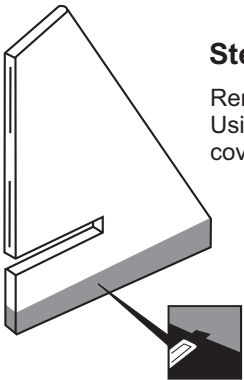
**Step 15:1**

Cut away only  
the covering

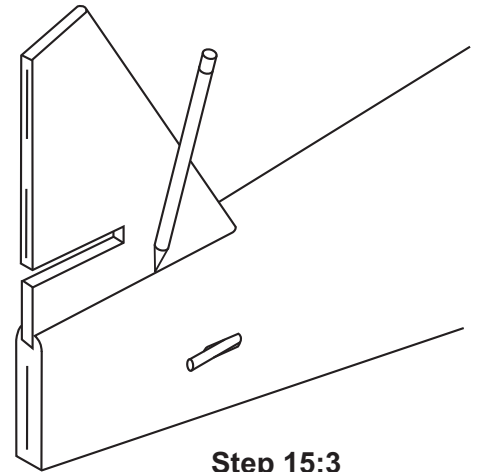
**Step 15:4**

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

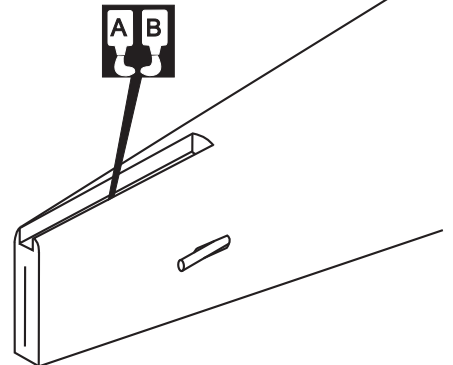
Be cautious **not to cut into the wood**, this will  
weaken the structure.

**Step 15:3**

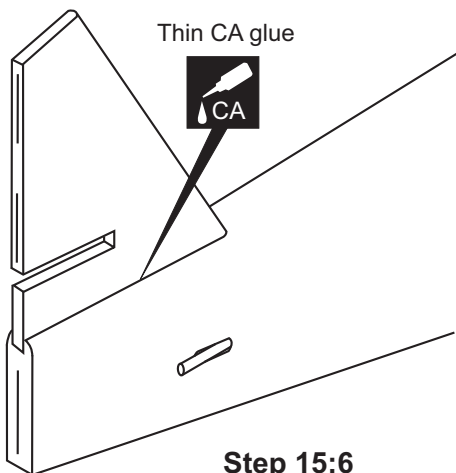
When you are satisfied with the alignment,  
use a pencil to trace around the right and left  
of the stabilizer where it meets the fuselage.

**Step 15:5**

Apply the thin layer of 15. minute epoxy  
on the bottom of the slot.



Thin CA glue

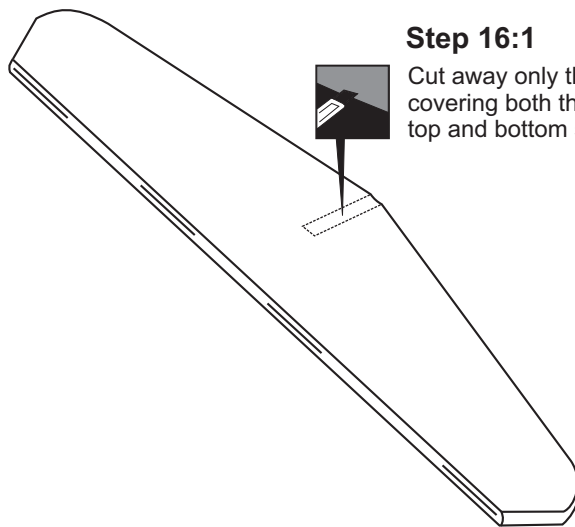
**Step 15:6**

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

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

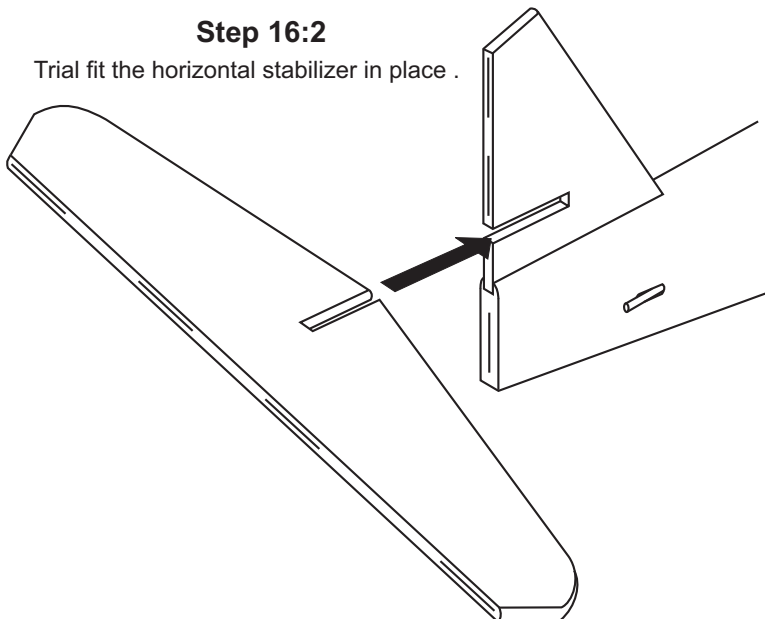
**Step 16:1**

Cut away only the covering both the top and bottom sides.



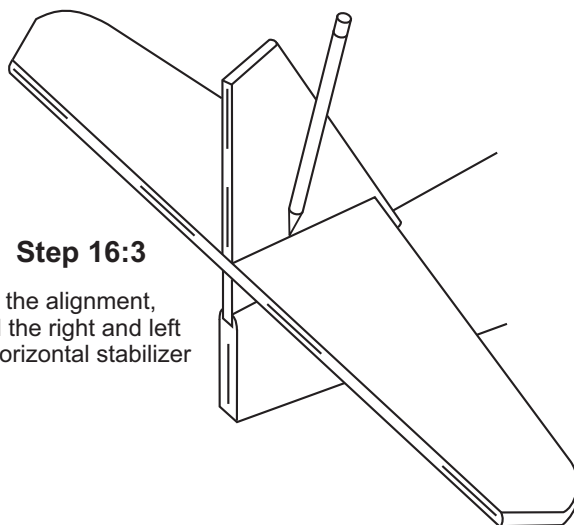
**Step 16:2**

Trial fit the horizontal stabilizer in place .



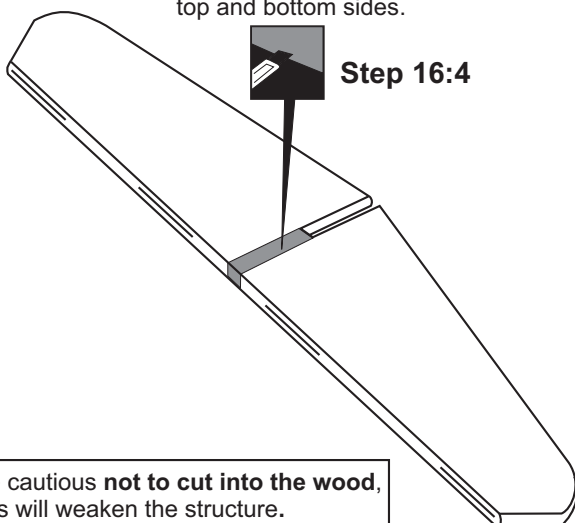
**Step 16:3**

When you are satisfied with the alignment, use a pencil to trace around the right and left of the stabilizer where the horizontal stabilizer meet the vertical stabilizer.



Cut away only the covering both the top and bottom sides.

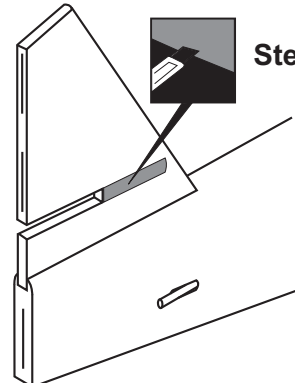
**Step 16:4**



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

Cut away only the covering both the left and right sides.

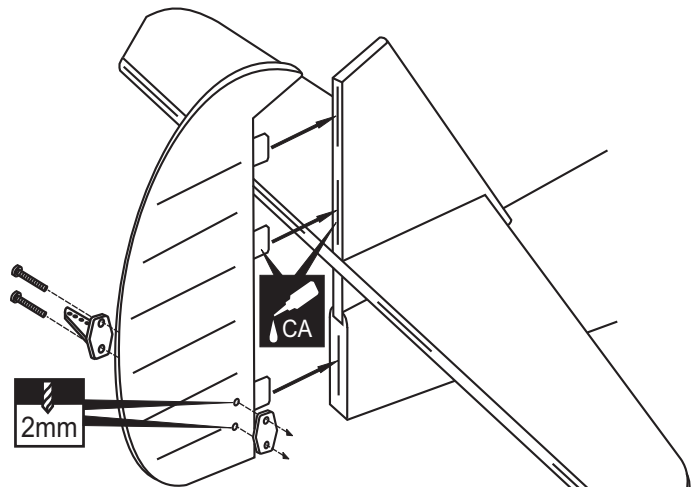
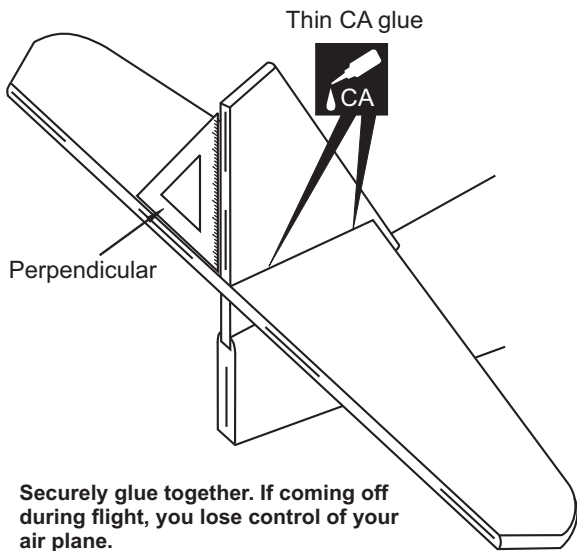
**Step 16:5**



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

## Step 17:1

Use a small glue faucet, Apply the thin CA glue on the horizontal stabilizer where it contacts the vertical stabilizer (both the top and bottom sides).



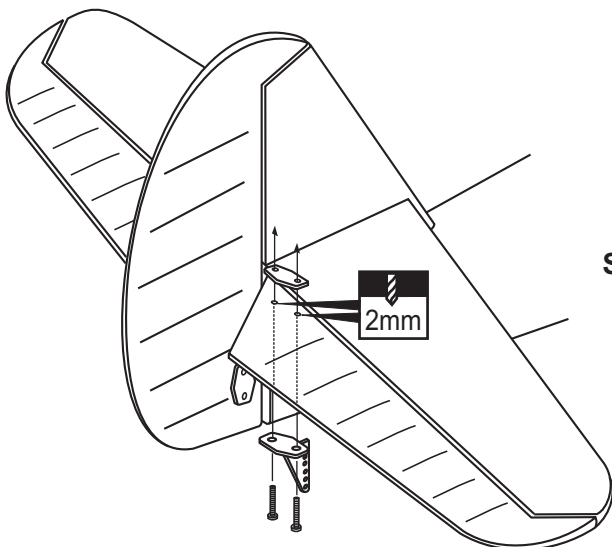
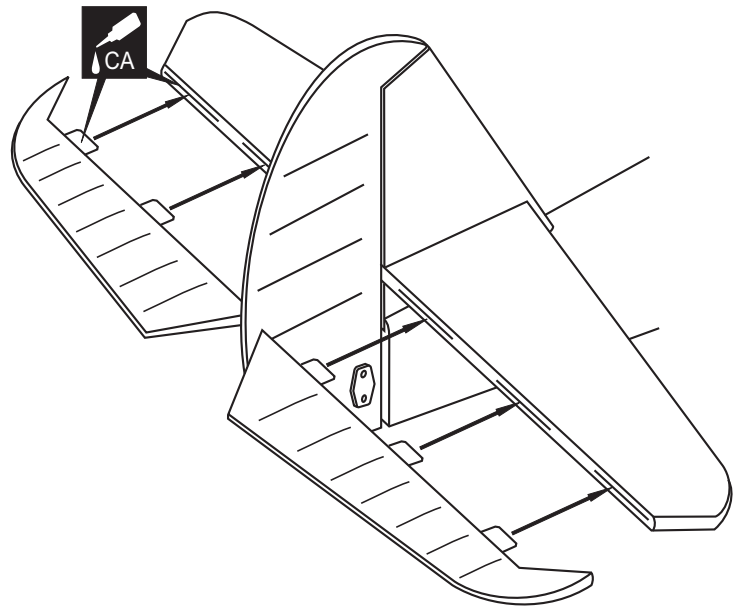
## Step 17:2

Push the rudder and its hinges into the hinge slots in the trailing edge of the vertical stabilizer. There should be a minimal hinge gap and the end of the rudder should not rub against the vertical stabilizer. When satisfied with the and alignment, hinge the rudder to the vertical stabilizer using thin CA glue. Make sure to apply a thin layer of CA glue to the right and left of both hinges and to inside the hinge slots.

## Step 17:3

Push the elevator and its hinges into the hinge slots in the trailing edge of the horizontal stabilizer. There should be a minimal hinge gap and the end of the elevator half should not rub against the horizontal stabilizer.

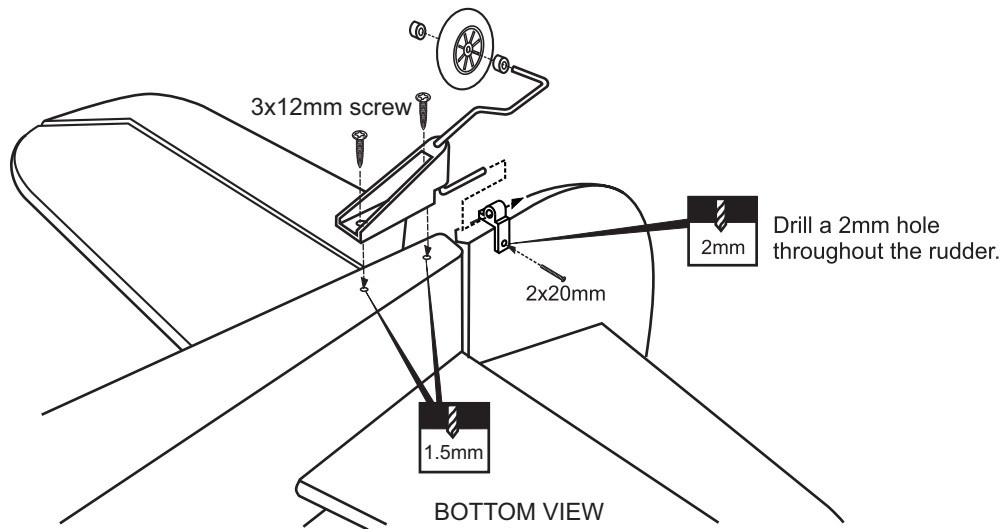
When satisfied with the and alignment, hinge the elevator to the horizontal stabilizer using thin CA glue. Make sure to apply a thin layer of CA glue to the top and bottom of both hinges and to inside the hinge slots. Repeat the previous procedures to hinge the second elevator to the other side of the horizontal stabilizer.



## Step 17:4

Control horn	
	.....3
2x20mm screw	
	.....6

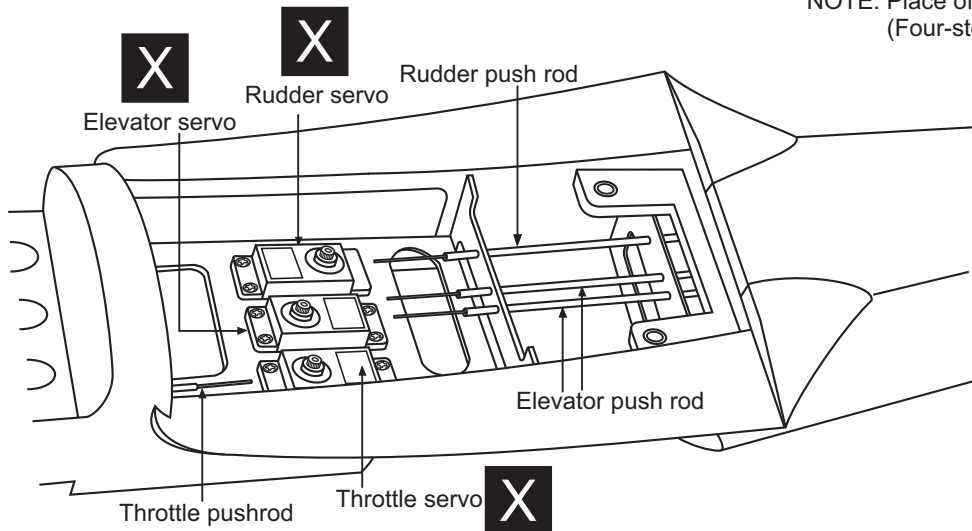
# Messerschmitt Me-109 18- Tail wheel



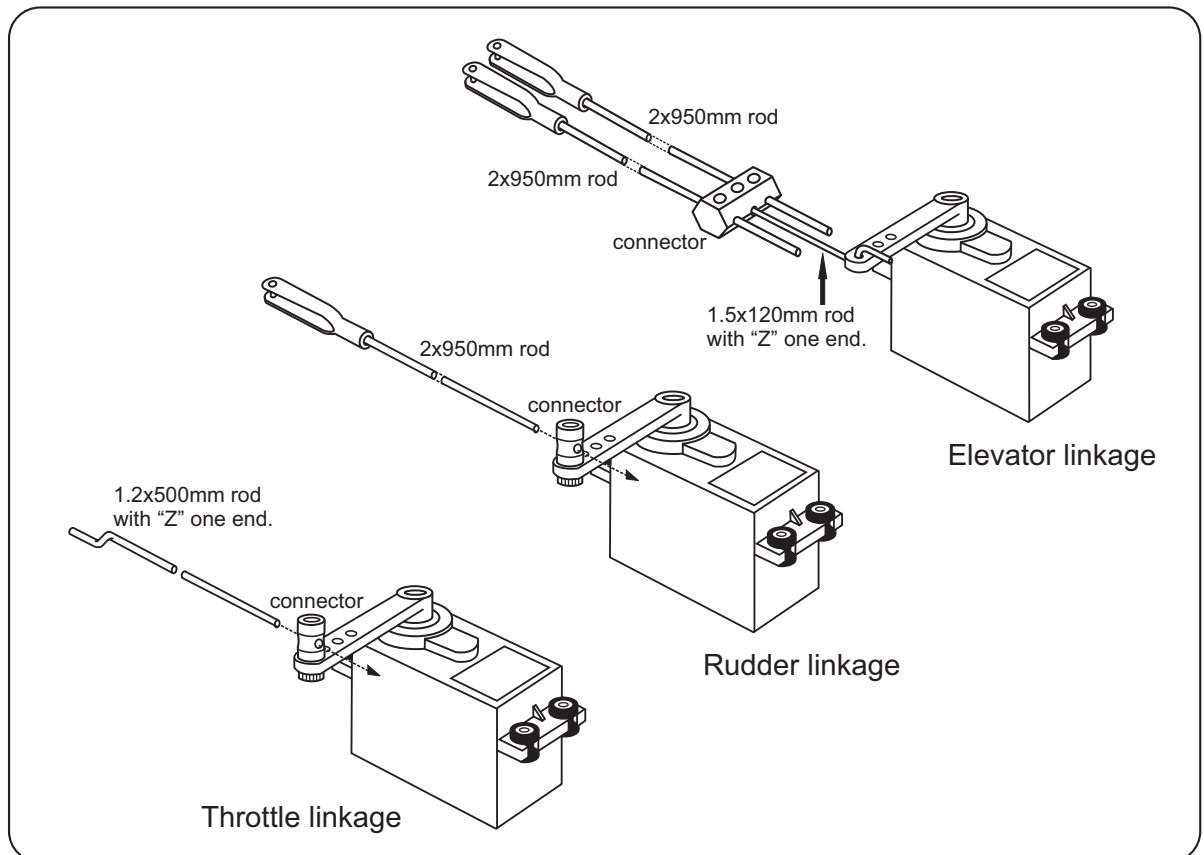
- |  |              |
|--|--------------|
|  | .....1       |
|  | 2x20mm bolt  |
|  | .....1       |
|  | 2.2m collar  |
|  | .....2       |
|  | 3x12mm screw |
|  | .....2       |

# 19- Servo and linkages

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

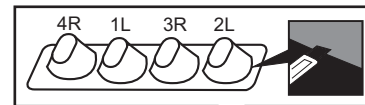


- |  |        |
|--|--------|
|  | .....1 |
|  | .....3 |
|  | .....3 |
|  | .....3 |
|  | .....1 |
|  | .....1 |

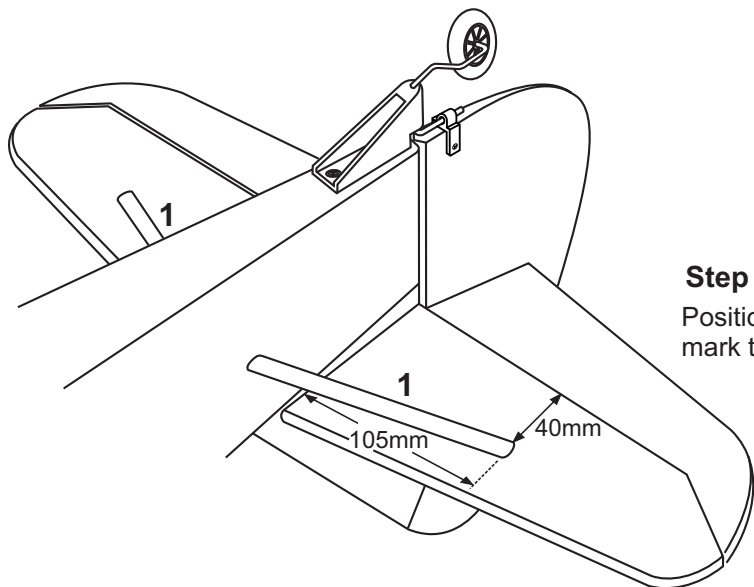




# Messerschmitt Me-109 20- Tail brace

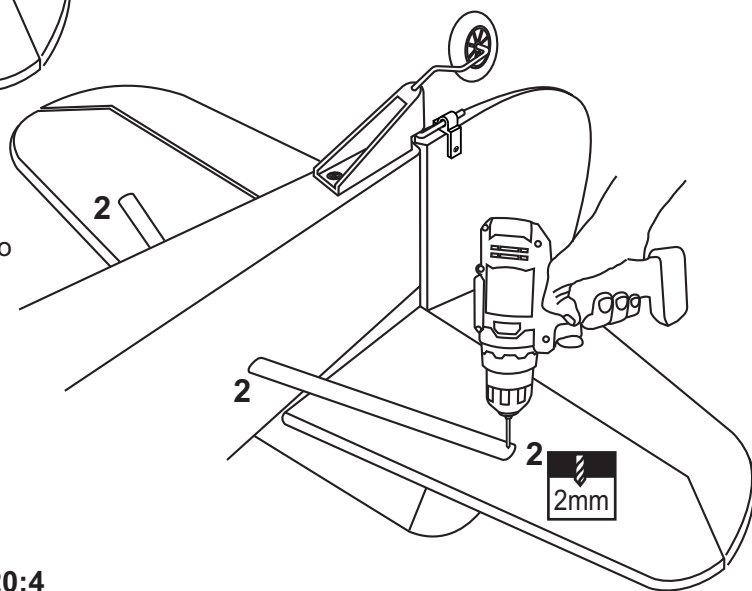


Step 20:1



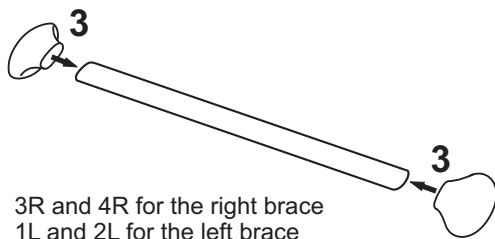
Step 20:2

Position the tail brace in place and using the pencil mark the location of the two holes to be drilled.



Step 20:3

Remove the tail brace and drill two 2mm hole each side as show.



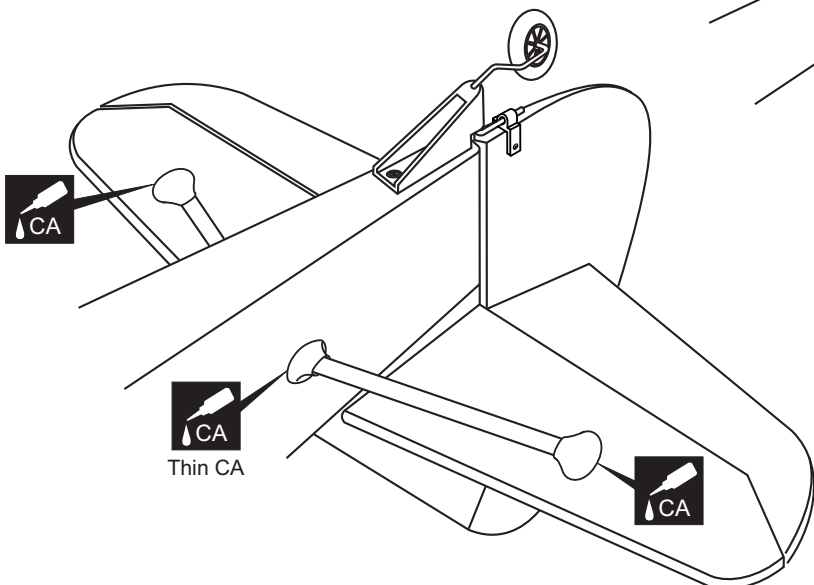
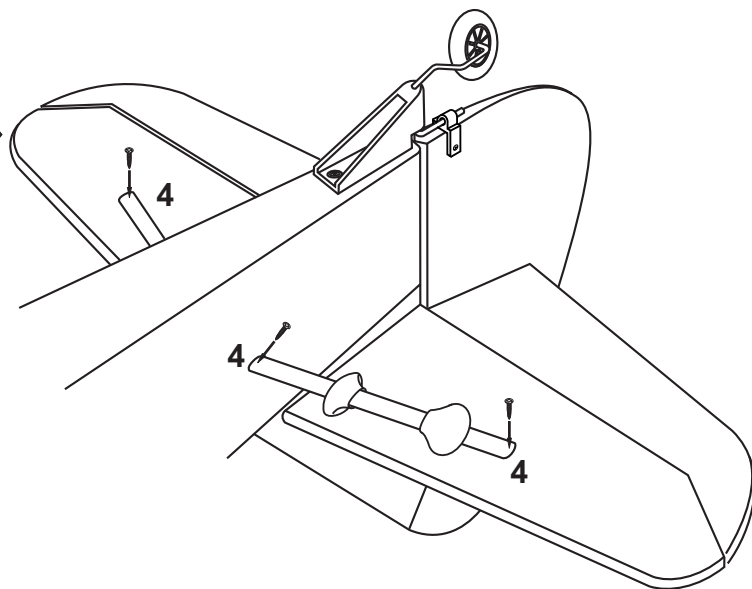
3R and 4R for the right brace  
1L and 2L for the left brace

Step 20:4

Slide the two plastic cover on to the right and left tail brace as show.

Step 20:5

Position the tail brace again. Secure it in place with two 3x12mm self tapping screws.



Thin CA

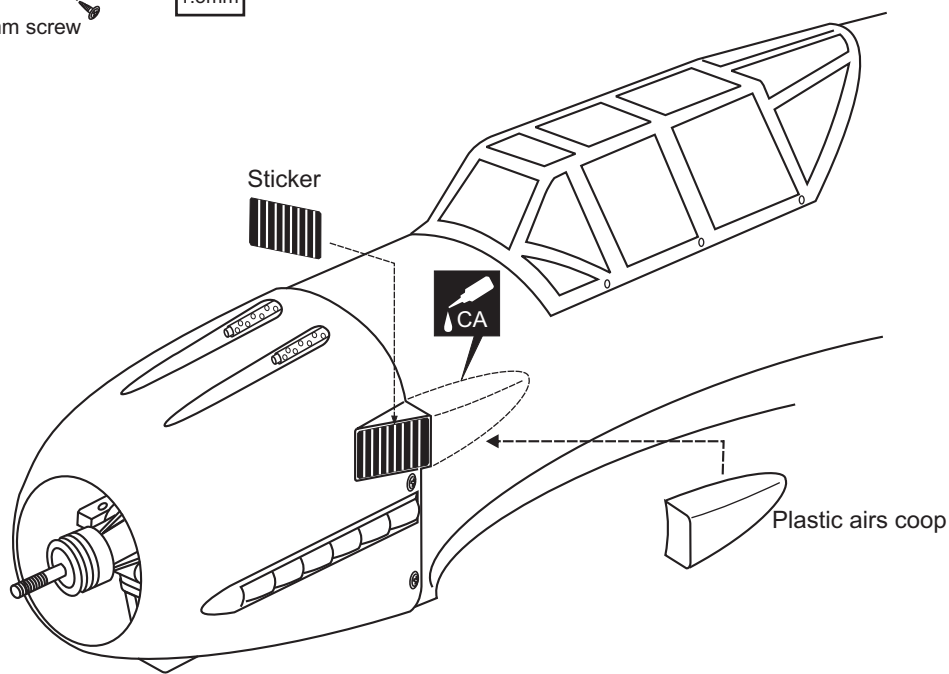
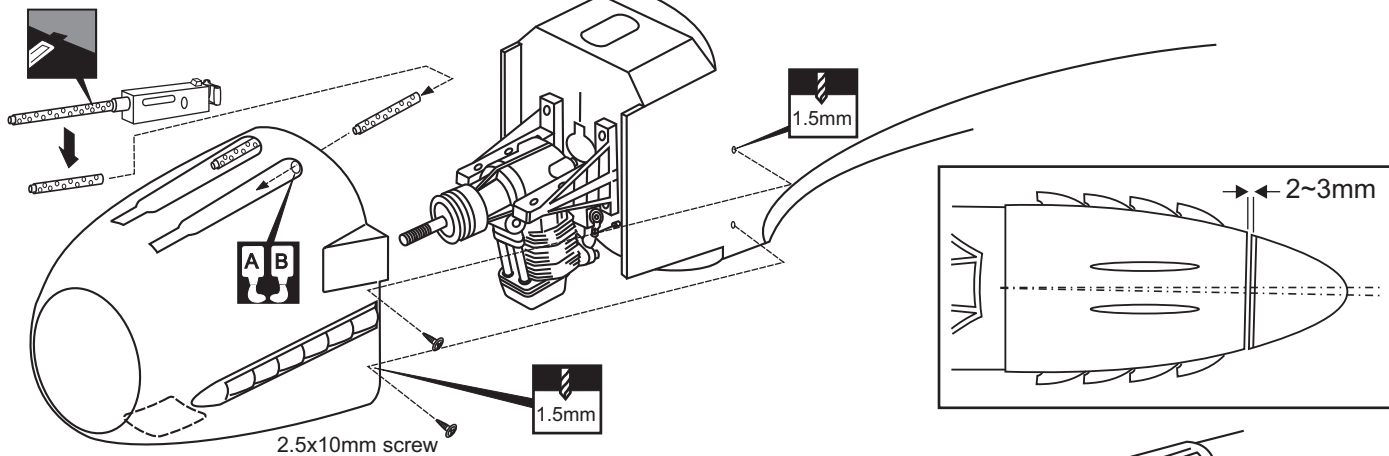
Step 20:6

Slide the two plastic cover in place and secure them with CA glue.

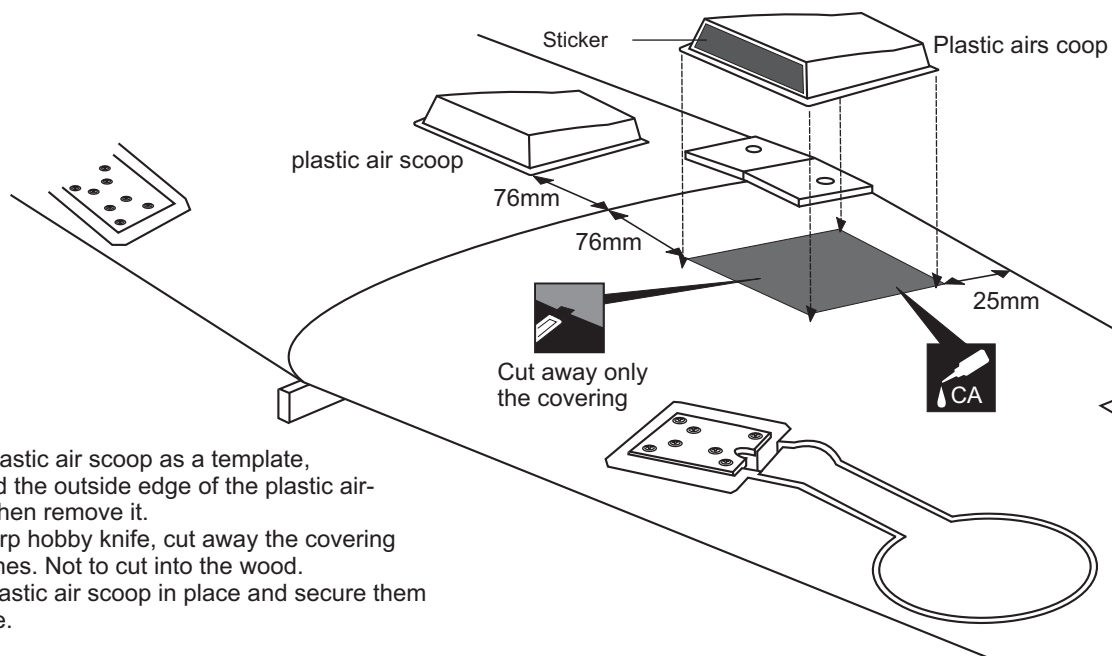
# Messerschmitt Me-109 21- Cowling

2.5X10mm screw

 .....4

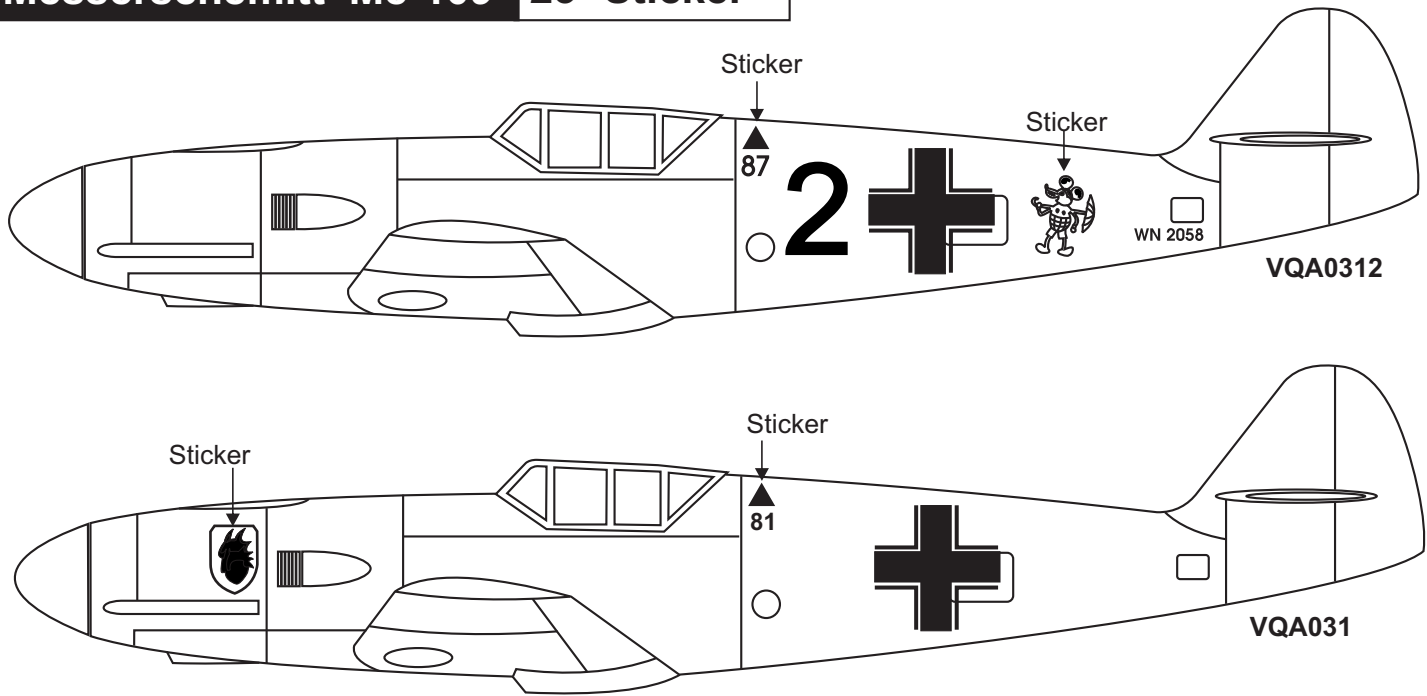


# 22- Air scoop



Using the plastic air scoop as a template, trace around the outside edge of the plastic air-scoop and then remove it. Using a sharp hobby knife, cut away the covering inside the lines. Not to cut into the wood. Apply the plastic air scoop in place and secure them with CA glue.

# Messerschmitt Me-109 23- Sticker

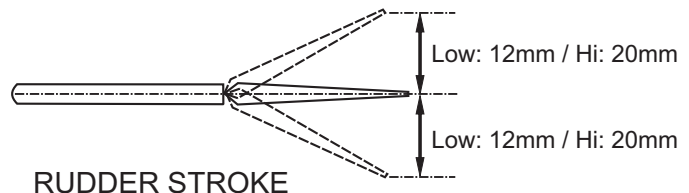
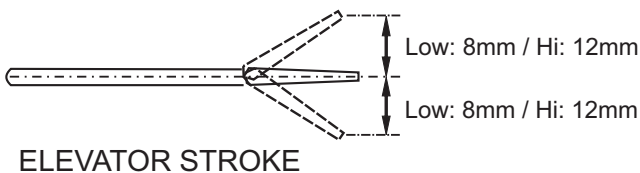
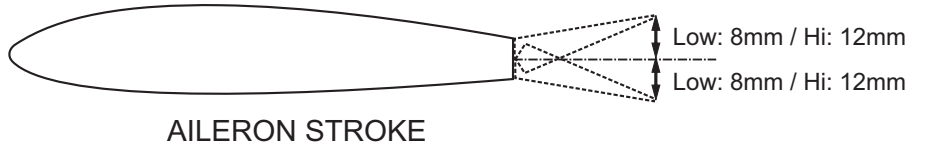
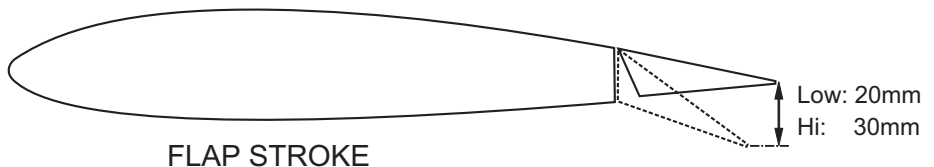


Note: Cut out the stickers and apply them in the proper area. Do not peel the backing paper off all at once. Peel off one corner of the backing and cut off with scissors. Arrange sticker on model and when satisfied adhere the corner without backing. Carefully peel back the rest of the backing while at the same time adhering the rest of the sticker.

Try not to make air bubbles, if there are some, carefully puncture sticker (center of bubble) but not model surface with the tip of the knife or sharp pin and squeeze out the air. At curves stretch sticker and apply a little heat so that no creases occur. Cut off the excess that is produced.

**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.

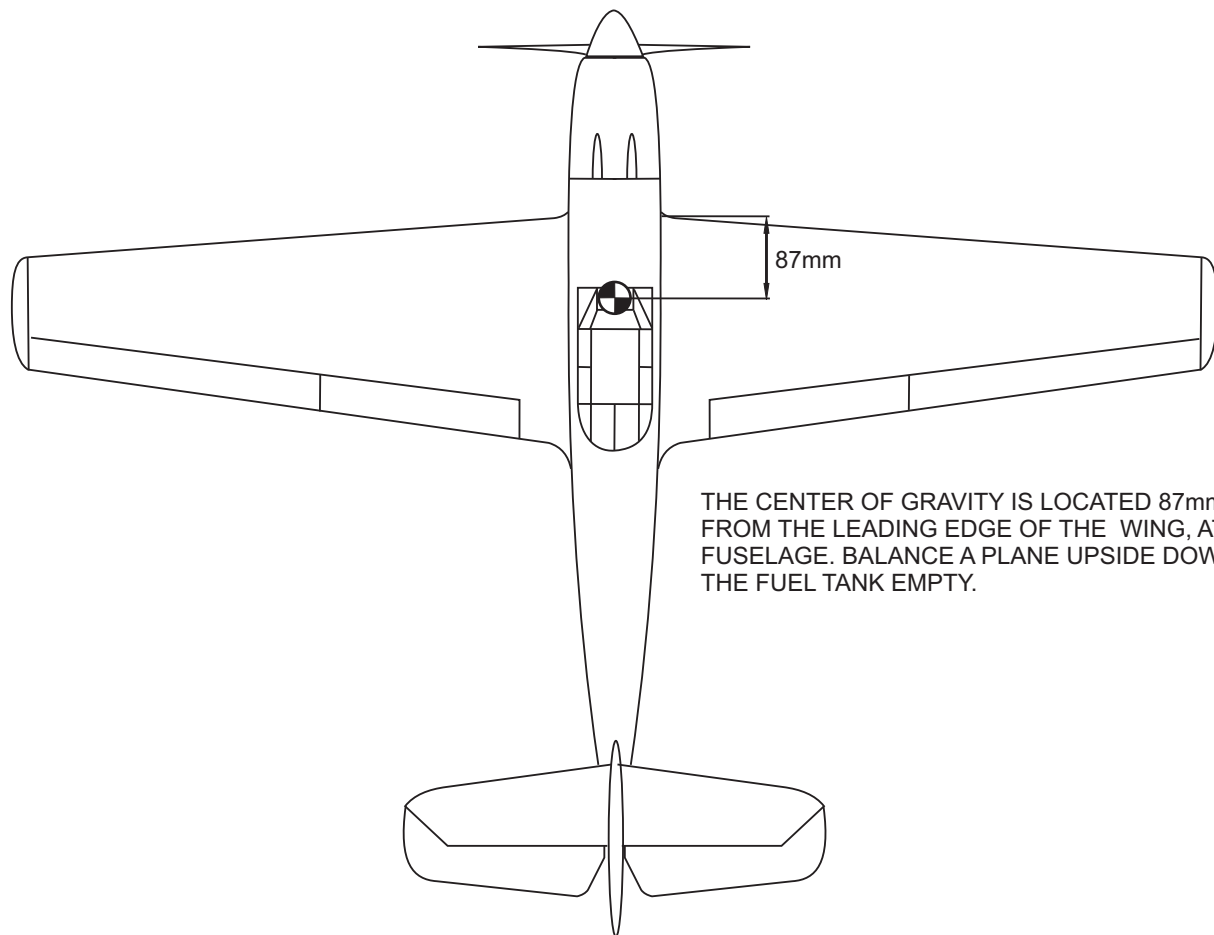
# 24- Control surface



Note: Measure rudder's biggest place

**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 Me-109 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".

# Messerschmitt Me-109 25- Balance



THE CENTER OF GRAVITY IS LOCATED 87mm 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 (87mm) 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 !***