Instruction Manual Book

Item code: BH191

VIPER JET 120N

95% PRE BUILT ARF ALMOST READY TO FLY



95% ALMOST READY TO FLY

SPECIFICATION:

- Wingspan: 2,230mm (87.79 in).
- Length: 2,173 mm (85.55 in).
- Weight: 13.5kg (29.76 lbs).
- Wing area: 81.8 dm2.
- Wing loading: 165g/dm2.
- Wing type: Naca Airfoil.
- Servo mount: 41mm x 21mm.
- Gear type: Electric Retract Gear set with oleo struts and controller box (included).

Parts listing required (not included):

- Radio: 8 channels minimum.
- Servo: 10 (HV high torque servos), size: (40 x 20)mm. + 1 size: (35 x 16)mm.
- Engine: Turbine Jet Engine with 120-160N (not included).

Recommended Battery set up (not included):

- Battery receiver: 2S- 7.4V 2,200mAh - 3,200mAh

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Made in Vietnam.

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INTRODUCTION

Thank you for purchasing BlackHorse Model products.With over 19 years experience inproduction and fly testing, BlackHorse Model is committed to bring the best quality products and good service to customers. Along with a team of creative engineers and skilled workers, we will always accompany with customers by our great experiences, fully enthusiasm...which will burn our passion!! Joining with us to explore and conquer challenges inthesky...

Your satisfaction is our success.Please read through this manual before starting construction.

Academy of Model Aeronautics: If you are not already a member of the AMA, please join! The AMA is the governing body of model aviation and membership provides liability insurance coverage, protects modelers' rights and interests and is required to fly at most R/C sites.

Academy of ModelAeronautics
5151 East Memorial Drive Muncie IN 47302-9252

Tele. (800) 435-9262
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Or via the Internet at: http://www.modelaircraft.org

AMA SINCE 1939

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WARRANTY

Black Horse Model guarantees the component parts in this kit to be free from defects in both material and workmanship at the date of purchase by the purchaser.

This warranty does not cover cosmetic damage or damage due to acts of God, accident, misuse, abuse, negligence, commercial use, or modification of or to any part of the Product.

This warranty does not cover damage due to improper installation, operation, maintenance, or attempted repair by anyone other than Black Horse Model.

Further, Black Horse Model reserves the right to change or modify this warranty without notice.

DISCLAIMER

Read this disclaimer carefully before using this product. Please strictly follow the instruction manual to assemble and use this.

In that Black Horse Model has no control over the final assembly or material used for final assembly, Black Horse Model is not responsible for loss of use , or other incidental or consequential damages.

Furthermore, Black Horse Model cannot be held liable for personal injury or property damage caused by the use or misuse of Black Horse Model products. By the act of using the user-assembled products, the user accepts all resulting liability.

SAFETY PRECAUTION

- This is not a toy and pilots must be over the age of 14
- Be sure that no other flyers are using your radio frequency.
- Do not smoke near fuel
- Store fuel in a cool, dry place, away from children and pets.
- Wear safety glasses.
- The glow plug clip must be securely attached to the glow plug.
- Do not flip the propeller with your fingers.
- Keep loose clothing and wires away from the propeller.
- Do not start the engine if people are near. Do not stand in line with the side of the propeller.
- Make engine adjustments from behind the propeller only. Do not reach around the spinning propeller.
- Moisture causes damage to electronics. Avoid water exposure to all equipment not specifically designed and protected for this purpose.

IMPORTANT BUILDING NOTES

- Please trial fit all the parts. Make sure you have the correct parts and that they fit and are aligned properly before gluing! This will assure proper assembly. This kit is hand made from natural materials, every plane is unique and minor adjustments may have to be made. However, you should find the fit superior and assembly simple.

- The painted and plastic parts used in this kit are fuel proof. However, they are not tolerant of many harsh chemicals including the following: paint thinner, C/A glue accelerator, C/A glue debonder and acetone. Do not let these chemicals come in contact with the colors on the covering and the plastic parts.

- Some parts included in this kit such as the cowl or wheel pants are made of fiberglass, the fibers of which may cause eye, skin and respiratory tract irritation. Never blow into a part to remove fiberglass dust, as the dust will blow back into your eyes. Always wear safety goggles, a particle mask and rubber gloves when grinding, drilling and sanding fiberglass parts. Vacuum the parts and the work area thoroughly after working with fiberglass parts.

SUGGESTION

To avoid scratching your new airplane, do not unwrap the pieces until they are needed for assembly. Cover your workbench with an old towel or brown paper, both to protect the aircraft and to protect the table. Keep a couple of jars or bowls handy to hold the small parts after you open the bag.

FLIGHT WARNINGS

- Always operate in open areas, away from factories, hospitals, schools, buildings and houses etc.
- NEVER fly your aircraft close to people or built up areas.
- NEVER fly near power lines, aerials or other dangerous areas including airports, motorways etc.
- NEVER fly in wet conditions or on windy or stormy days.
- ALWAYS adjust the engine from behind the propeller, and do not allow any part of your body to be in line with the propeller.
- THE PROPELLER IS DANGEROUS Keep fingers, clothing (ties, shirt sleeves, scarves) or any other loose objects that could be caught or drawn in, away from the propeller. Take care at ALL times.
- NEVER use damaged or deformed propellers or spinners.
- Keep all onlookers (especially small children and animals) well back from the area of operation. This is a flying aircraft, which will cause serious injury in case of impact with a person or animal.
- DO NOT dispose of empty fuel containers on a fire, this can lead to an explosion.

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FLIGHT WARNINGS

- When ready to fly, first extend the transmitter aerial.
- Switch on the transmitter.
- Switch on the receiver.
- Check that the wings are correctly fitted to the fuselage.
- Operate the control sticks on the transmitter and check that the control surfaces move freely and in the CORRECT directions.
- Check that the transmitter batteries have adequate power.
- ALWAYS take off into the wind.
- If the model does not respond correctly to the controls, land it as soon as possible and correct the fault.
- ALWAYS land the model INTO the wind, this ensures that the model lands at the slowest possible speed.
- Switch off the receiver.
- Switch off the transmitter.
- Empty the fuel tank after flying, fuel left in the tank can cause corrosion and lead to engine problems.

COVERING TOOLS

- Top Flite® MonoKote® Sealing Iron
- Top Flite Hot Sock Iron Cover
- Top Flite MonoKote Trim Seal Iron
- Top Flite MonoKote Heat Gun

ADHESIVES AND REQUIRED TOOLS

- Thin CA
- 30-minute epoxy
- 6-minute epoxy
- Threadlocker thread locking cement
- Mixing sticks
- Mixing cups (GPMR8056)
- Epoxy brushes
- Denatured alcohol
- Canopy Glue
- Felt-tipped pen or pencil
- Flat screwdriver
- Adjustable wrench
- Drill
- Hobby knife
- Masking tape
- Phillips screwdriver (large)
- Phillips screwdriver (small)
- Ruler
- Sandpaper
- Soldering iron
- Solder
- Hex wrench
- Drill bit: 1/16-inch (1.5mm), 5/64-inch (2mm), 1/8-inch (3,2mm), 3/16-inch (4,8mm),11/64-inch (4.5mm), 13/64-inch (5,2mm), 1/4-inch (6,4mm)

Academy of Model Aeronautics National Model Aircraft Safety Code

Effective January 1, 2018

A. GENERAL: A model aircraft is a non-human-carrying device capable of sustained flight within visual line of sight of the pilot or spotter(s). It may not exceed limitations of this code and is intended exclusively for sport, recreation, education and/or competition. All model flights must be conducted in accordance with this safety code and related AMA guidelines, any additional rules specific to the flying site, as well as all applicable laws and regulations.

As an AMA member I agree:

• I will not fly a model aircraft in a careless or reckless manner.

• I will not interfere with and will yield the right of way to all human-carrying aircraft using AMA's See and Avoid Guidance and a spotter when appropriate.

• I will not operate any model aircraft while I am under the influence of alcohol or any drug that could adversely affect my ability to safely control the model.

• I will avoid flying directly over unprotected people, moving vehicles, and occupied structures.

• I will fly Free Flight (FF) and Control Line (CL) models in compliance with AMA's safety programming.

• I will maintain visual contact of an RC model aircraft without enhancement other than corrective lenses prescribed to me. When using an advanced flight system, such as an autopilot, or flying First-Person View (FPV), I will comply with AMA's Advanced Flight System programming.

• I will only fly models weighing more than 55 pounds, including fuel, if certified through AMA's Large Model Airplane Program.

• I will only fly a turbine-powered model aircraft in compliance with AMA's Gas Turbine Program.

• I will not fly a powered model outdoors closer than 25 feet to any individual, except for myself or my helper(s) located at the flightline, unless I am taking off and landing, or as otherwise provided in AMA's Competition Regulation.

• I will use an established safety line to separate all model aircraft operations from spectators and bystanders.

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- Officially designated AMA Air Show Teams (AST) are authorized to use devices and practices as defined within the Team AMA Program Document. (AMA Document #718.)

(j) Not operate a turbine-powered aircraft, unless in compliance with the AMA turbine regulations. (AMA Document #510-A.)

3. Model aircraft will not be flown in AMA sanctioned events, air shows or model demonstrations unless:

(a) The aircraft, control system and pilot skills have successfully demonstrated all maneuvers intended or anticipated prior to the specific event.

(b) An inexperienced pilot is assisted by an experienced pilot.

4. When and where required by rule, helmets must be properly worn and fastened. They must be OSHA, DOT, ANSI, SNELL or NOCSAE approved or comply with comparable standards.

B. RADIO CONTROL (RC)

1. All pilots shall avoid flying directly over unprotected people, vessels, vehicles or structures and shall avoid endangerment of life and property of others.
2. A successful radio equipment ground-range check in accordance with manufacturer's recommendations will be completed before the first flight of a new or repaired model aircraft.
3. At all flying sites a safety line(s) must be established in front of which all flying takes place. (AMA Document #706.)

(a) Only personnel associated with flying the model aircraft are allowed at or in front of the safety line.

(b) At air shows or demonstrations, a straight safety line must be established.

(c) An area away from the safety line must be maintained for spectators.

(d) Intentional flying behind the safety line is prohibited.

4. RC model aircraft must use the radio-control frequencies currently allowed by the Federal Communications Commission (FCC). Only individuals properly licensed by the FCC are authorized to operate equipment on Amateur Band frequencies.
5. RC model aircraft will not knowingly operate within three (3) miles of any pre-existing flying site without a frequency-management agreement. (AMA Documents #922 and #923.)
6. With the exception of events flown under official AMA Competition Regulations, excluding takeoff and landing, no powered model may be flown outdoors closer than 25 feet to any individual, except for the pilot and the pilot's helper(s) located at the flightline.
7. Under no circumstances may a pilot or other person touch an outdoor model aircraft in flight while it is still under power, except to divert it from striking an individual.
8. RC night flying requires a lighting system providing the pilot with a clear view of the model's attitude and orientation at all times. Hand-held illumination systems are inadequate for night flying operations.
9. The pilot of an RC model aircraft shall:

(a) Maintain control during the entire flight, maintaining visual contact without enhancement other than by corrective lenses prescribed for the pilot.

(b) Fly using the assistance of a camera or First-Person View (FPV) only in accordance with the procedures outlined in AMA Document #550.

(c) Fly using the assistance of autopilot or stabilization system only in accordance with the procedures outlined in AMA Document #560.

C. FREE FLIGHT

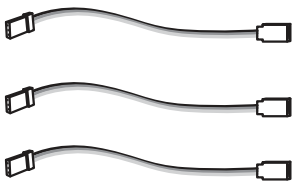
1. Must be at least 100 feet downwind of spectators and automobile parking when the model aircraft is launched.
2. Launch area must be clear of all individuals except mechanics, officials, and other fliers.
3. An effective device will be used to extinguish any fuse on the model aircraft after the fuse has completed its function.

D. CONTROL LINE

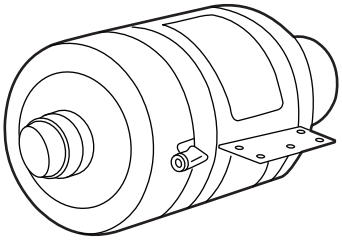
1. The complete control system (including the safety thong where applicable) must have an inspection and pull test prior to flying.
2. The pull test will be in accordance with the current Competition Regulations for the applicable model aircraft category.
3. Model aircraft not fitting a specific category shall use those pull-test requirements as indicated for Control Line Precision Aerobatics.
4. The flying area must be clear of all utility wires or poles and a model aircraft will not be flown closer than 50 feet to any above-ground electric utility lines.
5. The flying area must be clear of all nonessential participants and spectators before the engine is started.

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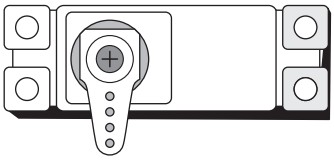
Servo extension leads.



620mm..... 10pcs.
190mm..... 2pcs.
420mm..... 6pcs.

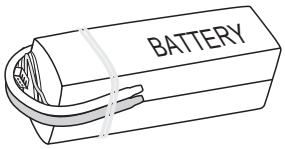


Turbine Jet Engine with thrust 13 kg



Servos size: (39.9 x 20.12 x 37.1)mm 9pcs
Torque: >12 kg

Servos size: (30 x 15)mm 1pcs
Torque: >8 kg



LiPo: 3s.....1 Packs
LiPo: 2s.....3 Packs

2x900mm
Deg High Temperature Braided Soft Chemical Fiber Tubing
---2

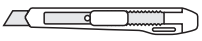
TOOLS & SUPPLIES NEEDED.



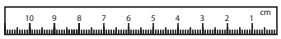
Medium C/A glue



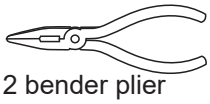
Threadlocker (screw cement).



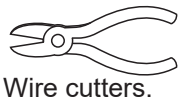
Modeling knife.



Straight edge ruler.

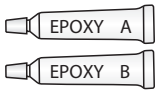


2 bender plier

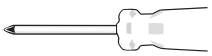


Wire cutters.

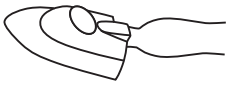




30 minute epoxy.
5 minute epoxy.



Screw driver





Hex Wrench.



Hand or electric drill.

Some more tools.

- Assorted drill bits.
- Masking tape.
- Paper towels.
- Rubbing alcohol
- 90° square or builder's triangle.

Symbols used throughout this instruction manual, comprise:



Cut off excess.



Cut off shaded portion carefully.



Pay close attention here.



Take particular care here.



Set all screws securely . If they come off during flight you will lose control of your aircraft!



Apply threadlocker (screw cement).



Apply instant glue (C.A glue, super glue).



Apply epoxy glue.



Assemble left and right sides the same way



Must be purchased separately!



Ensure smooth, non-binding movement when assembling.



Drill holes using the stated (in this case 1.5mm ø).



The number of times the same way Assembly (in this case twice).



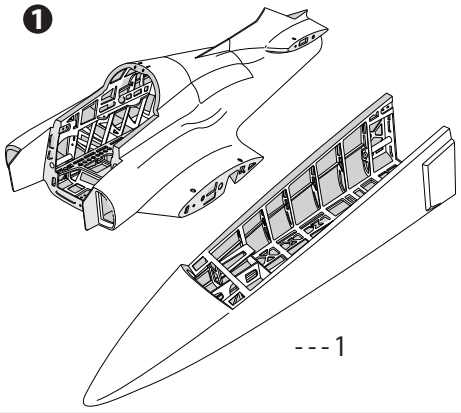
Use a pencil to mark

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1: Fuselage set. 2: Cockpit set. 3: Wing set. 4: Horizontal stabilizer set 5: Vertical stabilizer set.

6: Nose & door gear set. 7: Main & doorgear set. 8: Stainless tailpipe 9: Fuel tank set. 10: Controller box set. 11: CG set.

❶



--- 1

ø12x170mm Aluminium tube.

--- 2

Aluminum Fuselage

--- 3

4x10mm Socket Head Cap Screw

--- 12

4mm Spring Washer

--- 12

Ventral fin set:

--- 1

4mm Spring Washer

--- 4

4x16 Button Screw

--- 4

4mm Flat Washer

--- 4

Plastic

--- 7

❷

Canopy

--- 1

2x8mm Tp Screw

--- 12

Cockpit Hatch

--- 1

Pilot

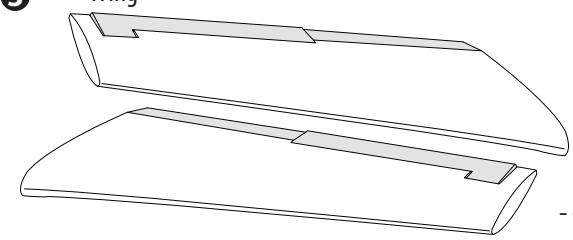
--- 1

15x220mm zip tie battery

--- 1

❸

Wing



--- 1

Ø20x1078mm Fiber Carbon Tube

--- 1

Ø12x860mm Fiber Carbon Tube

--- 1

2.6x75mm Pushrod Flap

--- 2

2.6x70mm Pushrod Aileron

--- 2

Ball Link

--- 8

2x10mm Tp Screw

--- 16

67mm Pinned Hinge Flap

--- 10

3x12 Button Screw

--- 8

3mm Flat Washer

--- 8

Brass Ball

--- 8

6x50mm Aluminium

--- 4

3mm Lock Nut

--- 8

Horn

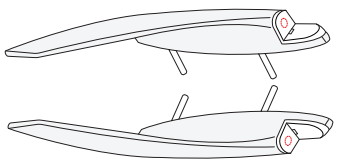
--- 2

--- 2

Horn

--- 2

Wing Tip



--- 1

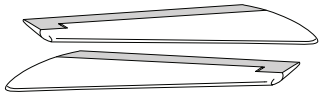
Plastic Light Cover

--- 2

Plastic

--- 4

❹



--- 1

3mm Lock Nut

--- 4

2.6x55mm Pushrod

---2

Horn

---2

--- 2

3x12mm Button Screw

--- 4

3mm Flat Washer

--- 4

Brass Ball

--- 4

Ball Link

--- 4

44mm Pinned Hinge

--- 4

6x50mm Aluminium

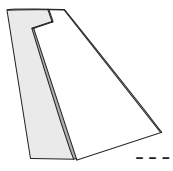
--- 2

Ø12x596mm Fiber Carbon Tube

--- 1

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❺


- - - 1

Horn

- - - 2


- - - 2

Brass Ball

- - - 2

Ball Link

- - - 2

3x12mm Button Screw

- - - 2

2.6x45mm Pushrod

- - - 1

2x10mm Tp Screw

- - - 8

3mm Flat Washer

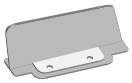
- - - 2

3mm Lock Nut

- - - 2

44mm Pinned Hinge

- - - 2

Plastic

- - - 2

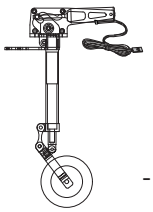
6x50mm Aluminium

- - - 1

Ø12x234mm Fiber Carbon Tube
- - - 1

Ø8x202mm Aluminium Tube
- - - 1

❻

Nose gear

- - - 1

Brass Ball

- - - 2

Ball Link

- - - 2

4x20mm Button Screw

- - - 4

3x12mm Button Screw

- - - 2

3mm Flat Washer

- - - 2

4mm Spring Washer

- - - 4

2.6x32mm Pushrod

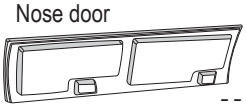
- - - 1

2.6x70mm Pushrod

- - - 1

3mm Lock Nut

- - - 1

Nose door

- - - 1

Brass Ball

- - - 2

Ball Link

- - - 2

Plastic Hinges

- - - 2

3mm Flat Washer

- - - 2

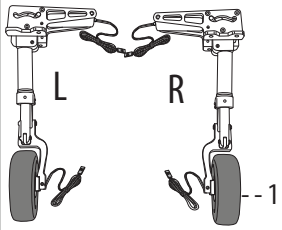
3x12mm Button Screw

- - - 2

2x10mm Tp Screw

- - - 8

❼

Main landing gear


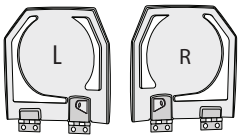
- - 1

4x20 Button Screw

- - - 8

4mm Spring Washer

- - - 8

Main door


- - - 1

2x8mm Tp Screw

- - - 8

2.6x32mm Pushrod

- - - 1

2.6x27mm Pushrod

- - - 1

3mm Lock Nut

- - - 2

3mm Flat Washer

- - - 4

Ball Link

- - - 4

Brass Ball

- - - 4

3x12mm Button Screw

- - - 4

Gear door

- - - 1

Ball Link

- - - 4

Aluminium Ball

- - - 2

Brass Ball

- - - 2

3x4mm Set Screw

- - - 2

2.6x20mm Pushrod

- - - 2

44mm Pinned Hinge

- - - 4

3x12mm Button Screw

- - - 4

3mm Flat Washer

- - - 4

3mm Lock Nut

- - - 2

Stainless tailpipe

- - - 1

3x15mm Tp Screw

- - - 10

❽

Clunks

- - - 1

Rubber

- - - 1

Ziptie

- - - 4

20 x 560mm Fuel tank strap

- - - 1

3x25mm Screw

- - - 1

Aluminium

- - - 1

Aluminium

- - - 1

87mm Copper tube

- - - 1

55mm Copper tube

- - - 2

Fiber glass

- - - 1

Alu. Anodized Fuel Vent Line Plug

- - - - - 2

2x5mm Tp Screw

- - - 9

Magnetic Anodized Fuel Dot

- - - - - 2

❾

❿

Controller box

- - - 1

Aluminium ∅12mm

- - - 1

2000mm Wire

- - - 1

Plate of plywood

- - - 2

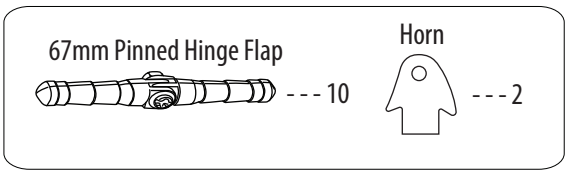
6 x 25mm Plastic Screw

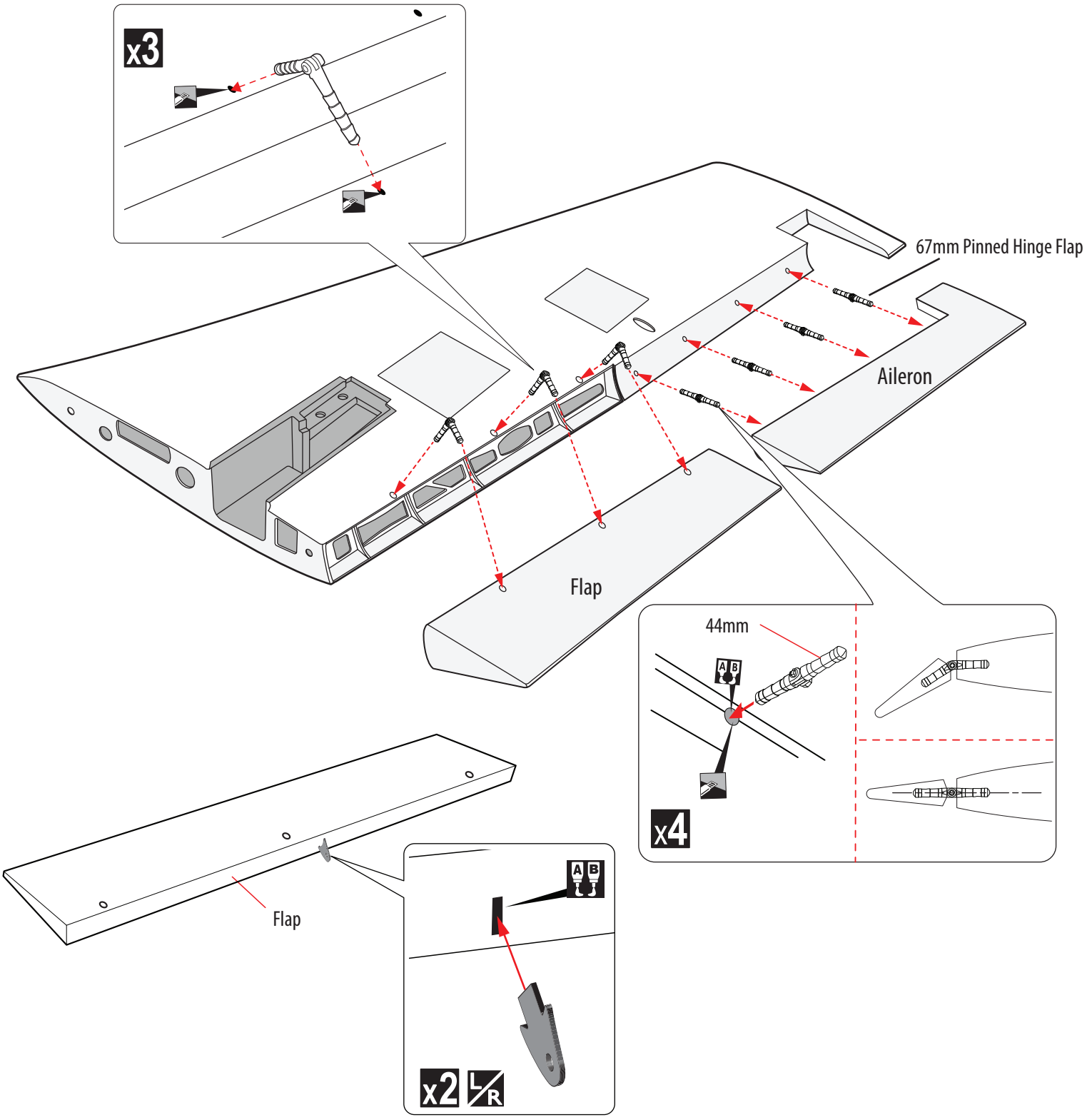
- - - 2

⓫

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INSTALLING THE AILERONS AND FLAPS





Apply epoxy glue

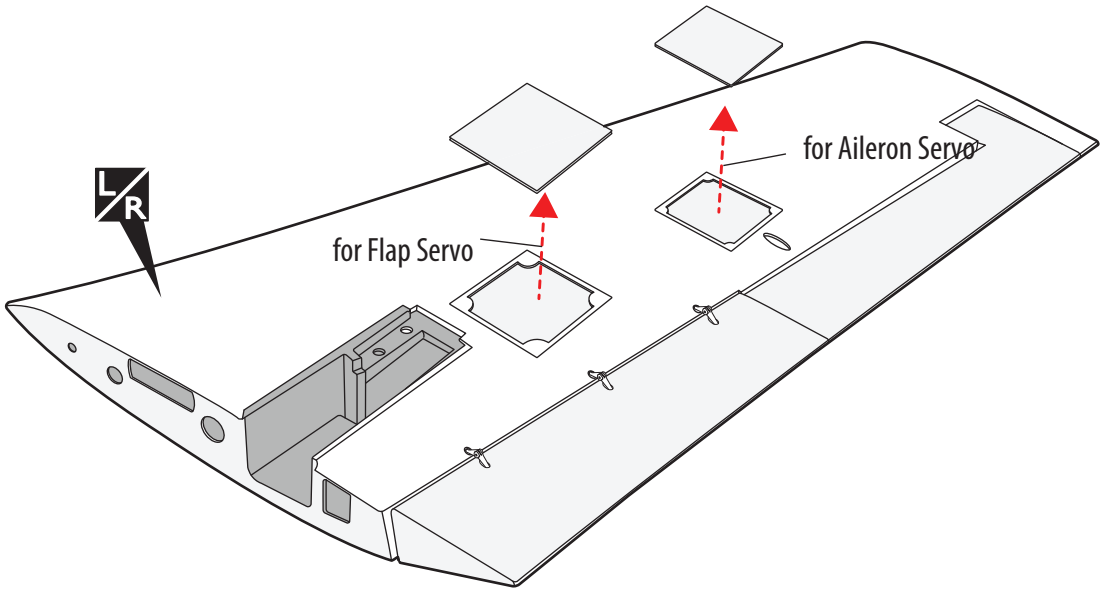
Assemble left and right sides the same way

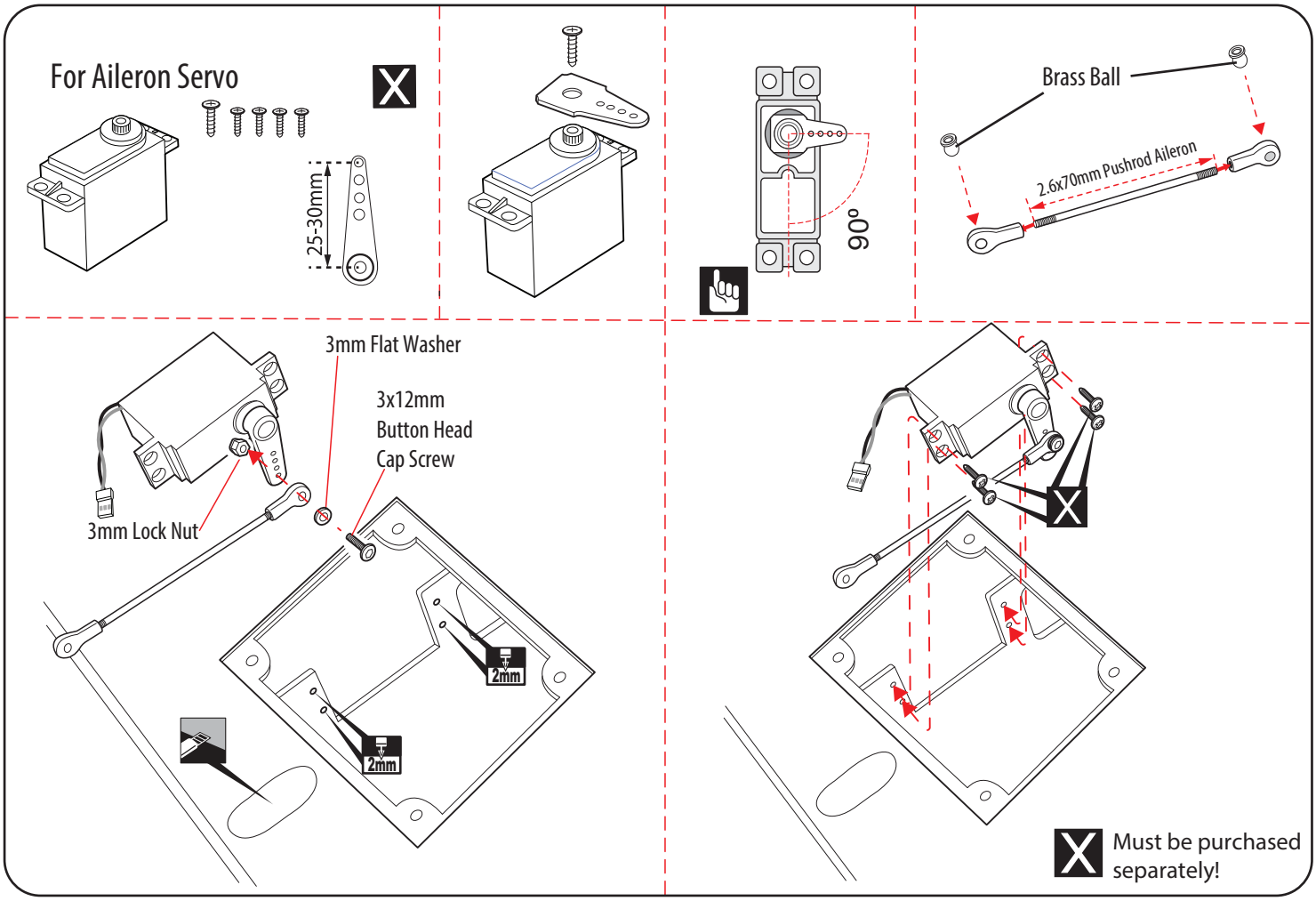
x2 The number of times the same way Assembly (in this case twice).

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INSTALLING THE AILERON AND FLAP SERVOS

2.6x75mm Pushrod Flap --- 2	3x12 Button Screw --- 8	3mm Lock Nut --- 8	2x10mm Tp Screw --- 16
2.6x70mm Pushrod Aileron --- 2	3mm Flat Washer --- 8	Horn --- 2	6x50mm Aluminium --- 4
Ball Link --- 8	Brass Ball --- 8	--- 2	





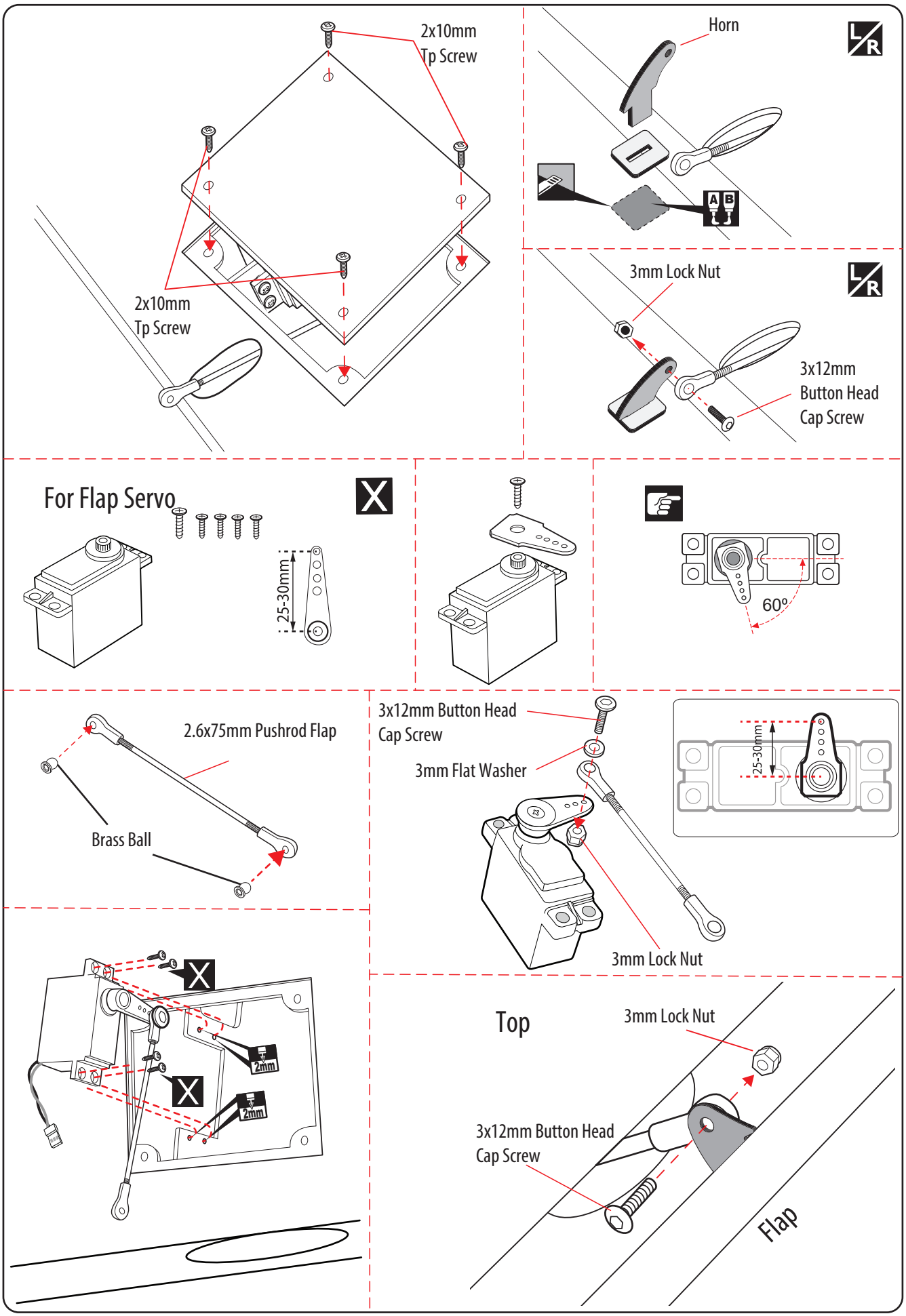
Pay close attention here.

Cut on shaded portion carefully.

Assemble left and right sides the same way

Drill holes using the stated (in this case 1.5mm ø).

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Pay close attention here.

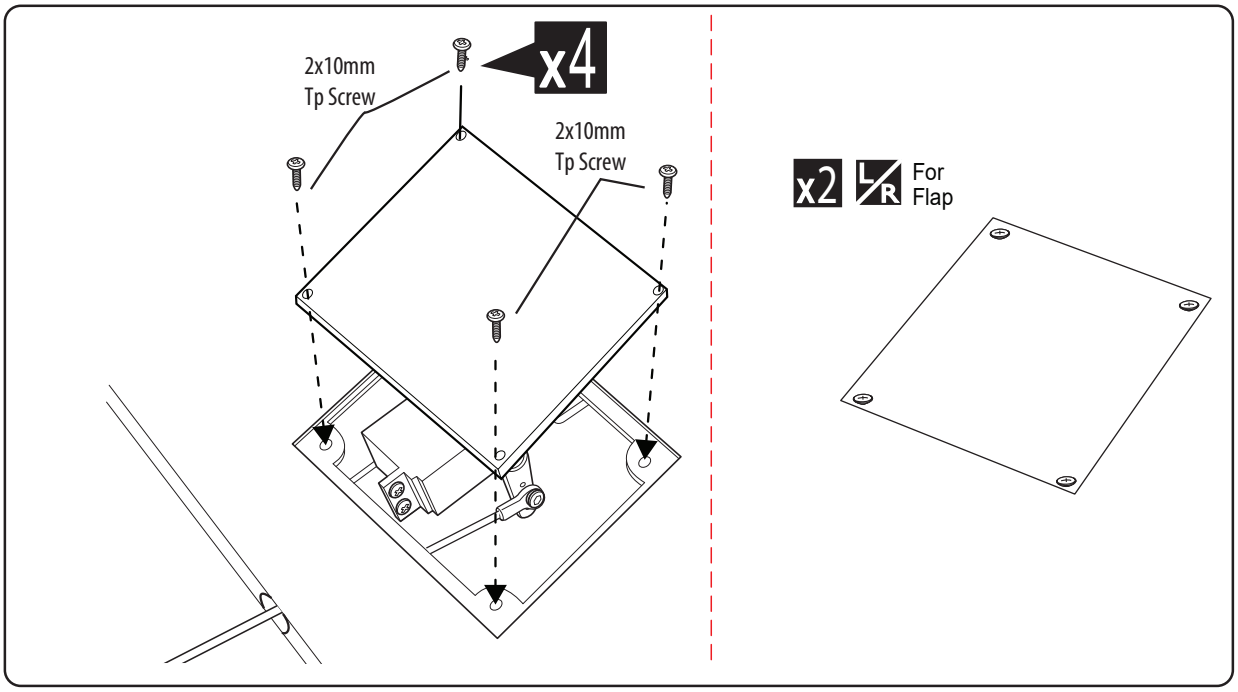
Drill holes using the stated drill bit (in this case 1.5mm ø).

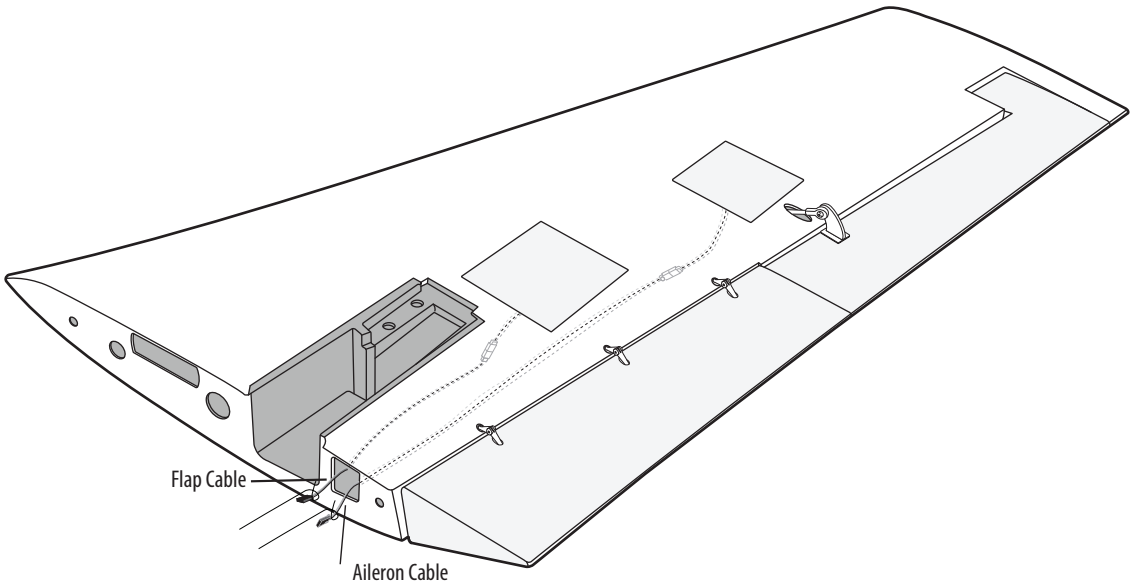
X Must be purchased separately

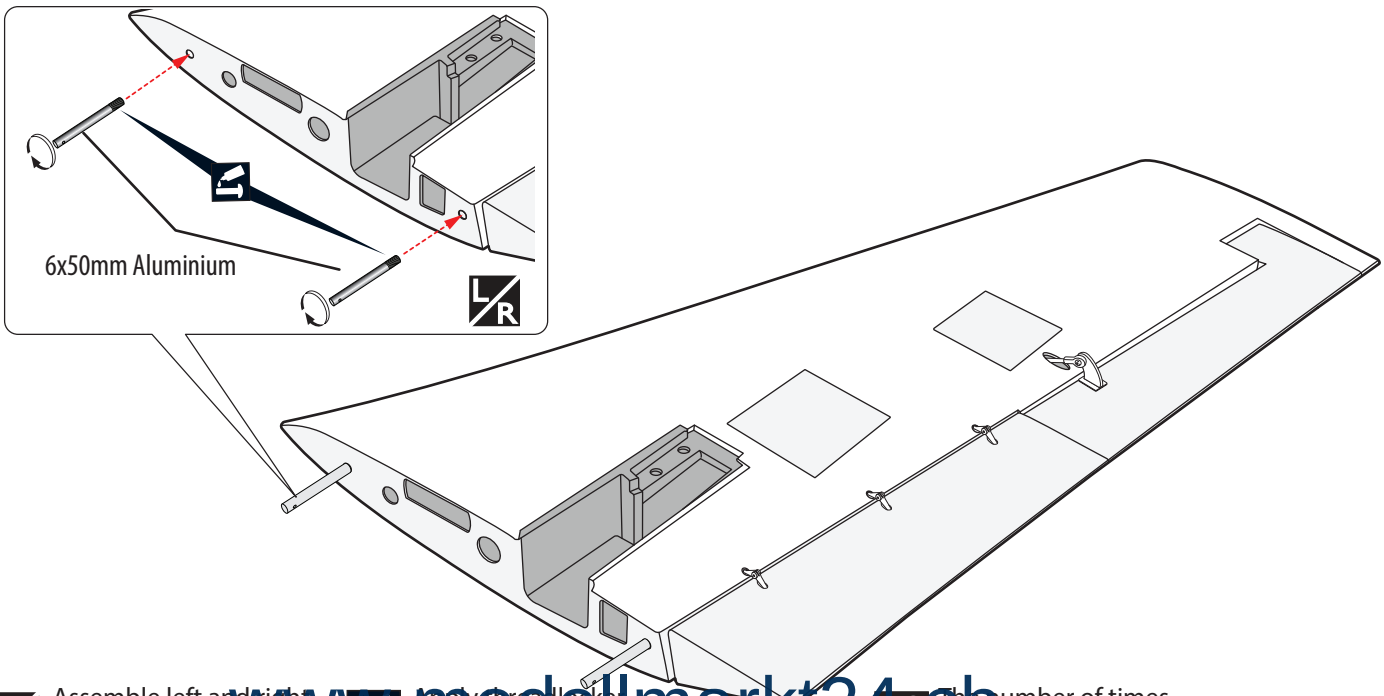
L/R Assemble left and right sides the same way

X2 The number of times the same way Assembly (in this case twice).

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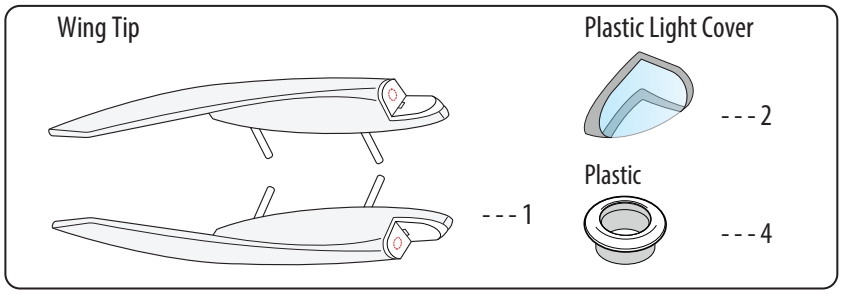
L/R Assemble left and right sides the same way

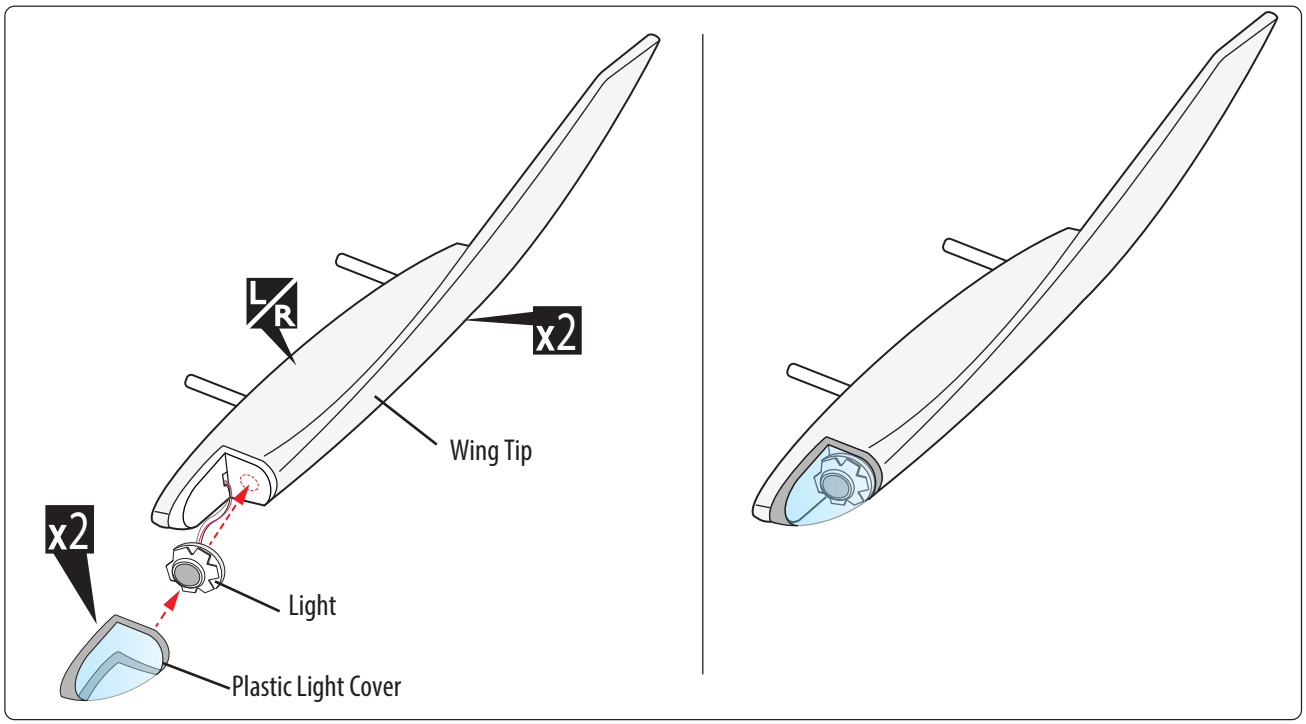
Apply thread locker (screw cement).

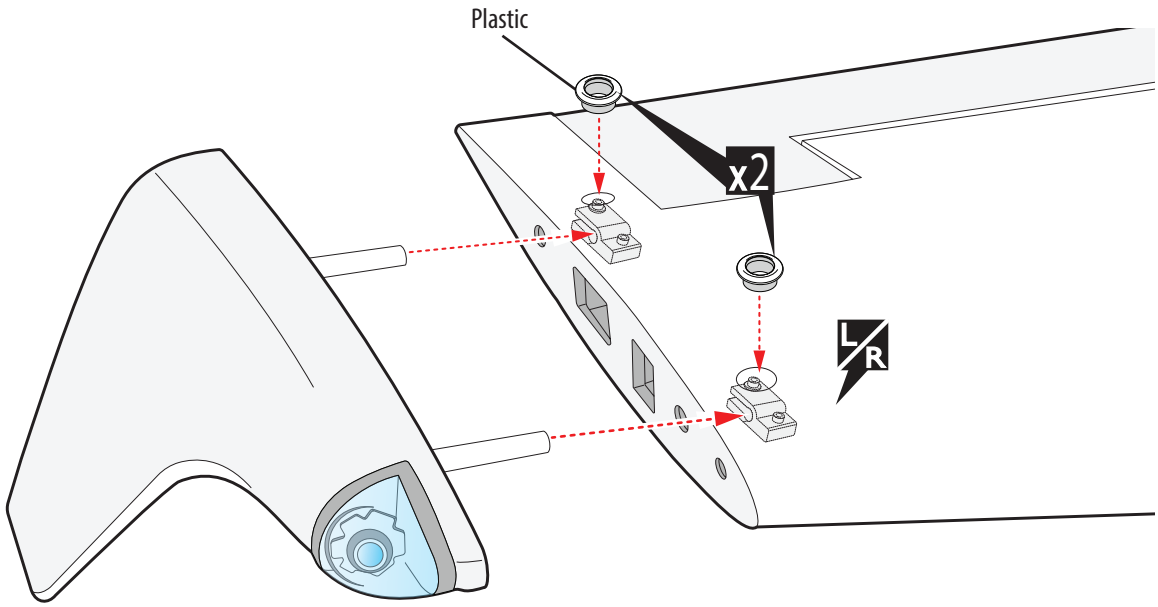
x2 The number of times the same way Assembly (in this case twice).

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INSTALLING THE LIGHT WING ANH WINGS TIP



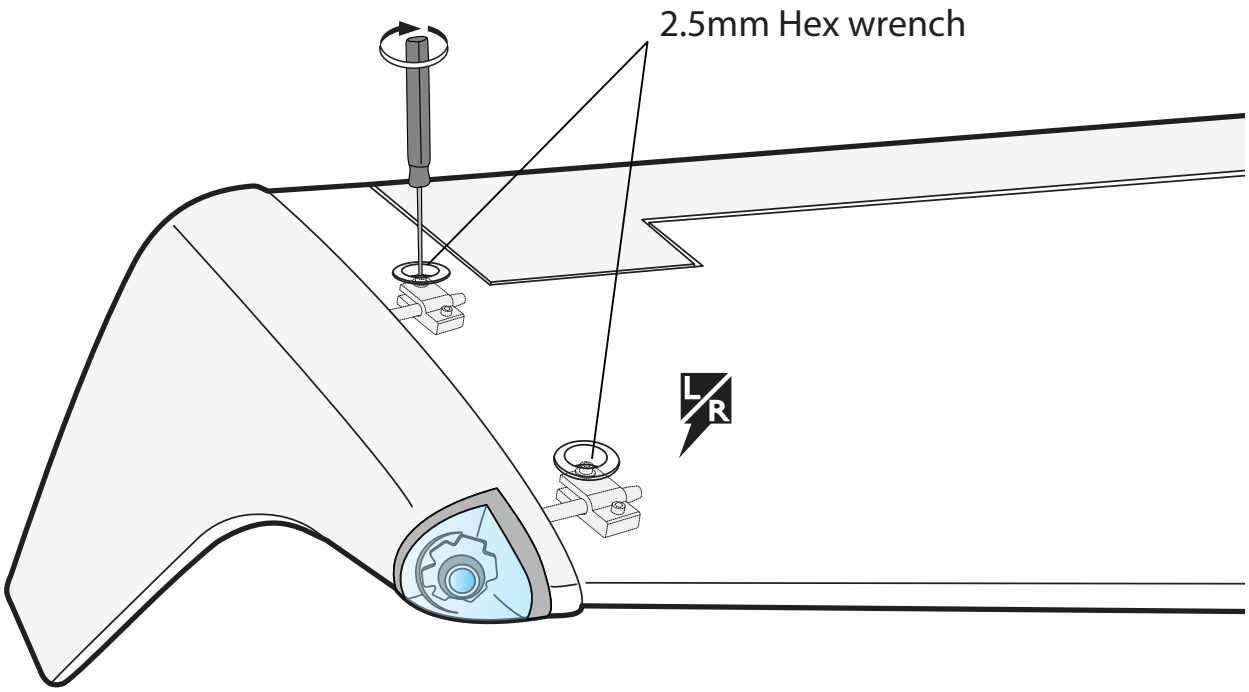


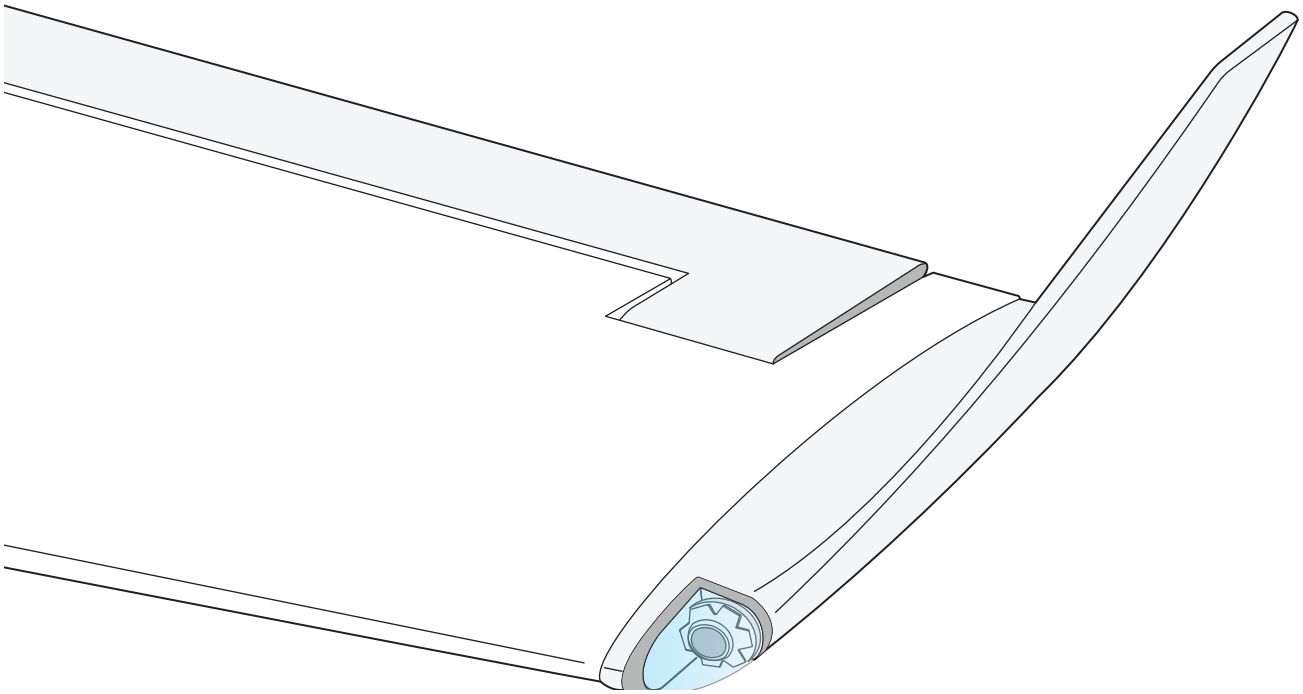


L/R Assemble left and right sides the same way

x2 The number of times to be same way Assembly (in this case twice).

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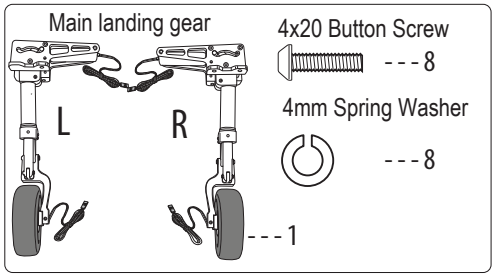




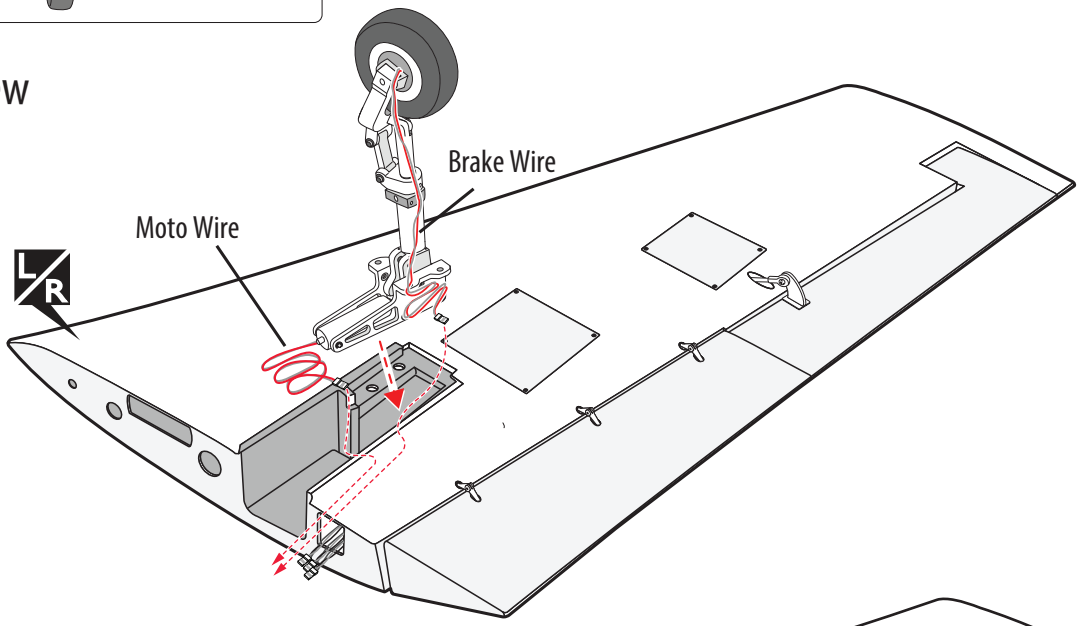
L R Assemble left and right sides the same way

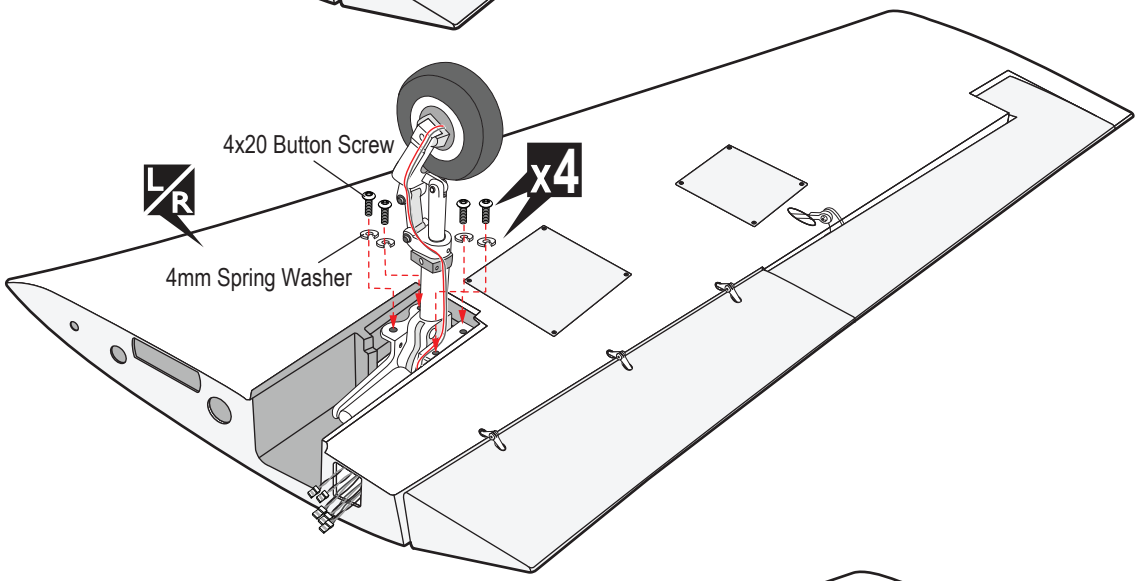
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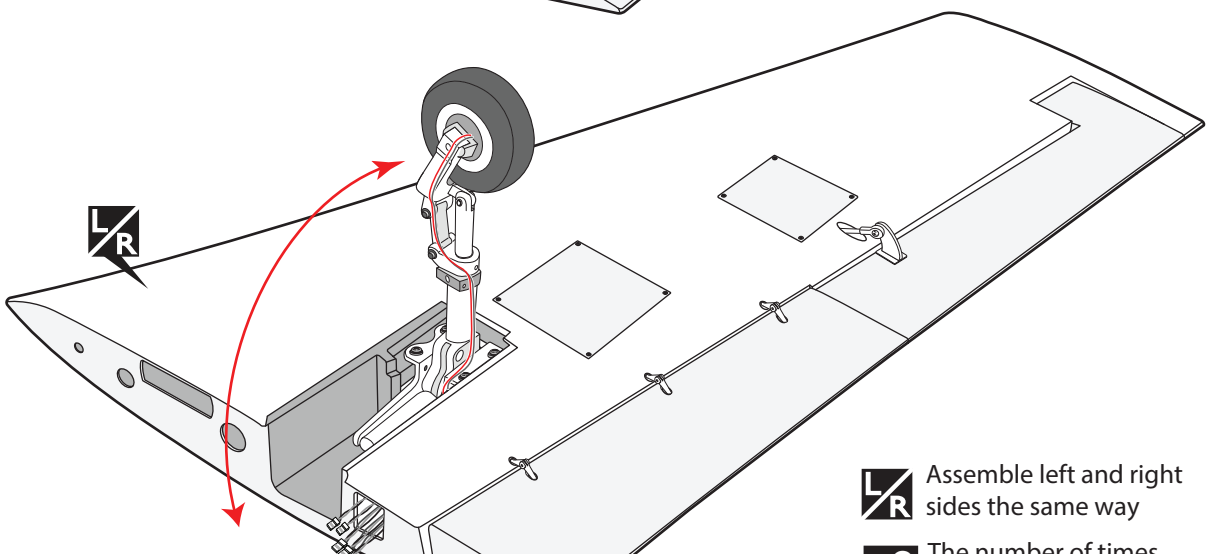
INSTALLING THE MAIN LANDING GEAR



Bottom view







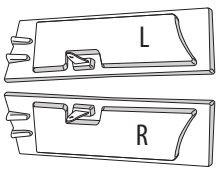
L/R Assemble left and right sides the same way

x2 The number of times the same way Assembly (in this case twice).

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INSTALLING THE GEAR DOOR

Gear door



---1

Ball Link ---4

Aluminium Ball ---2

Brass Ball ---2

2.6x20mm Pushrod ---2

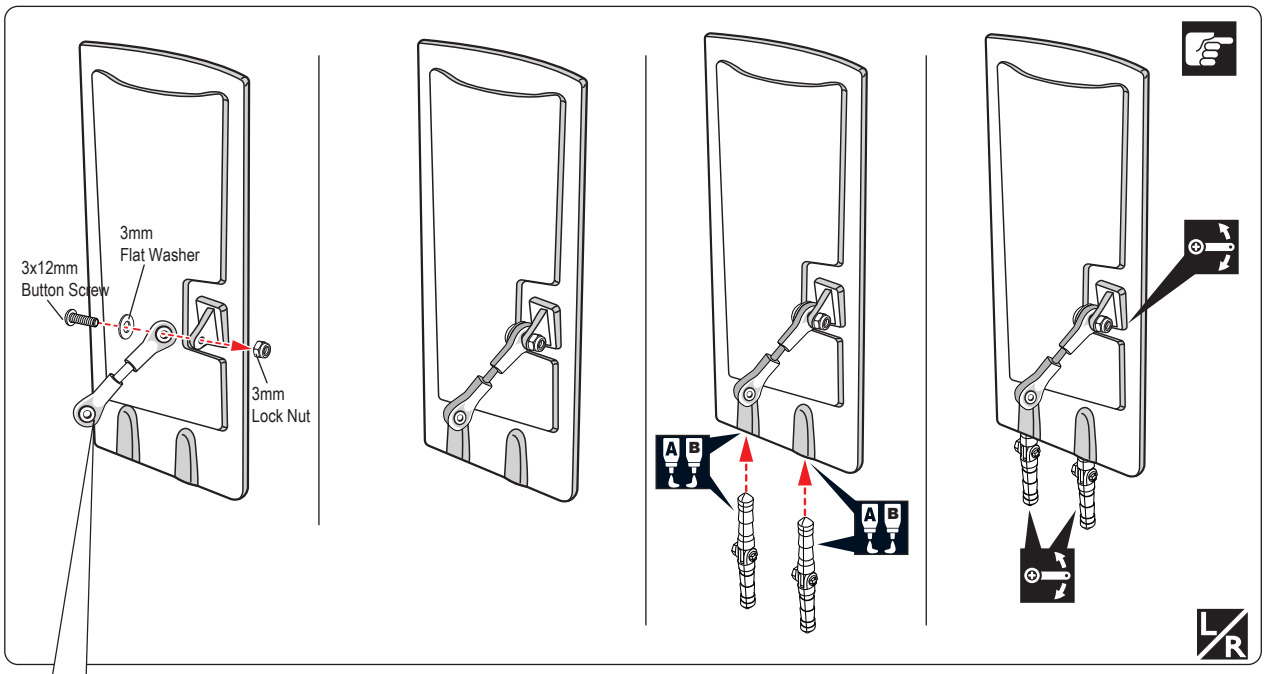
44mm Pinned Hinge ---4

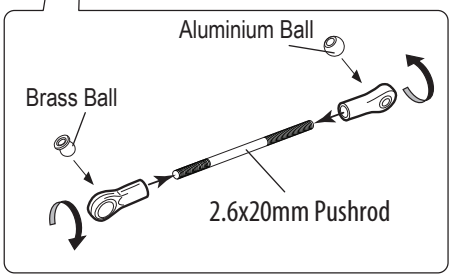
3x4mm Set Screw ---2

3x12mm Button Screw ---4

3mm Flat Washer ---4

3mm Lock Nut ---2





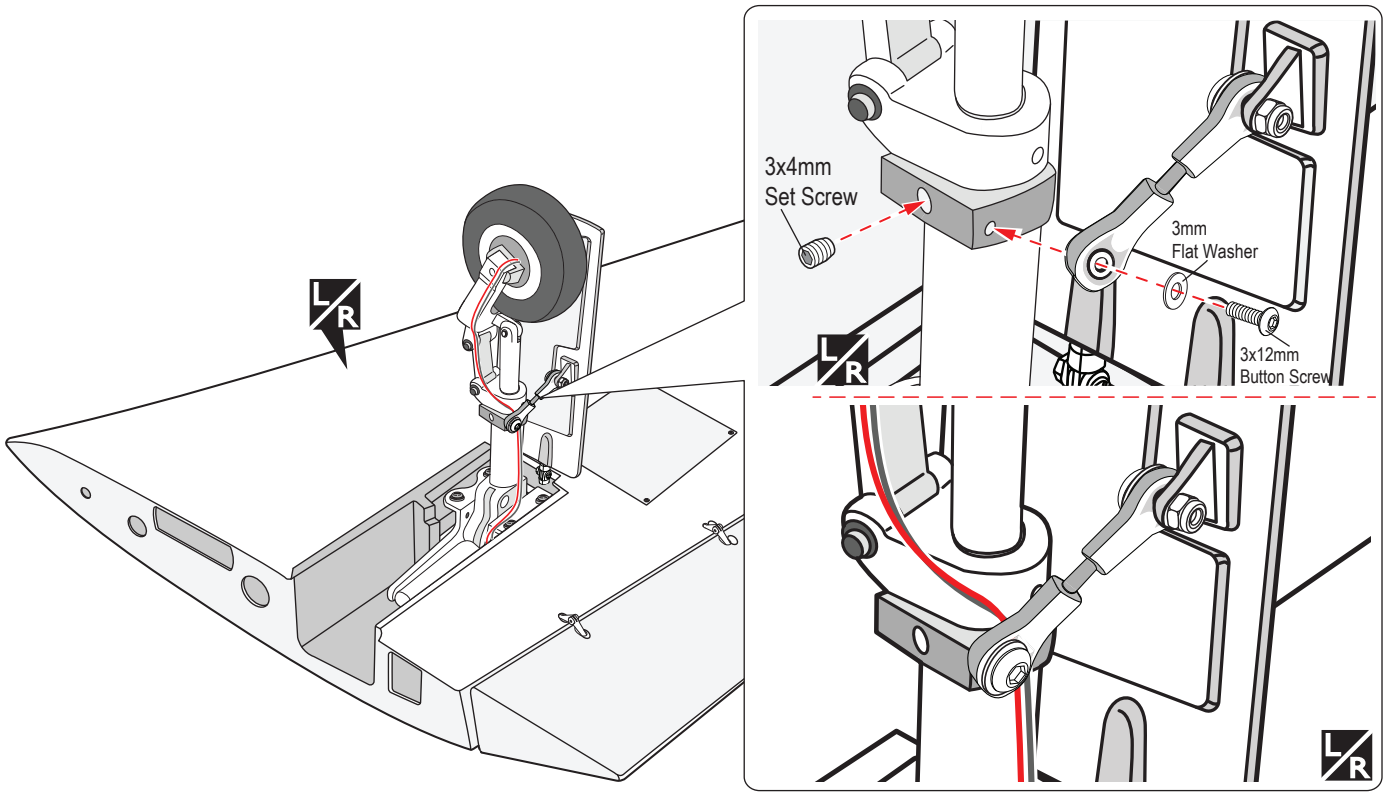
Bottom view

Assemble left and right sides the same way.

Apply epoxy glue.

Ensure smooth, non-binding movement when assembling.

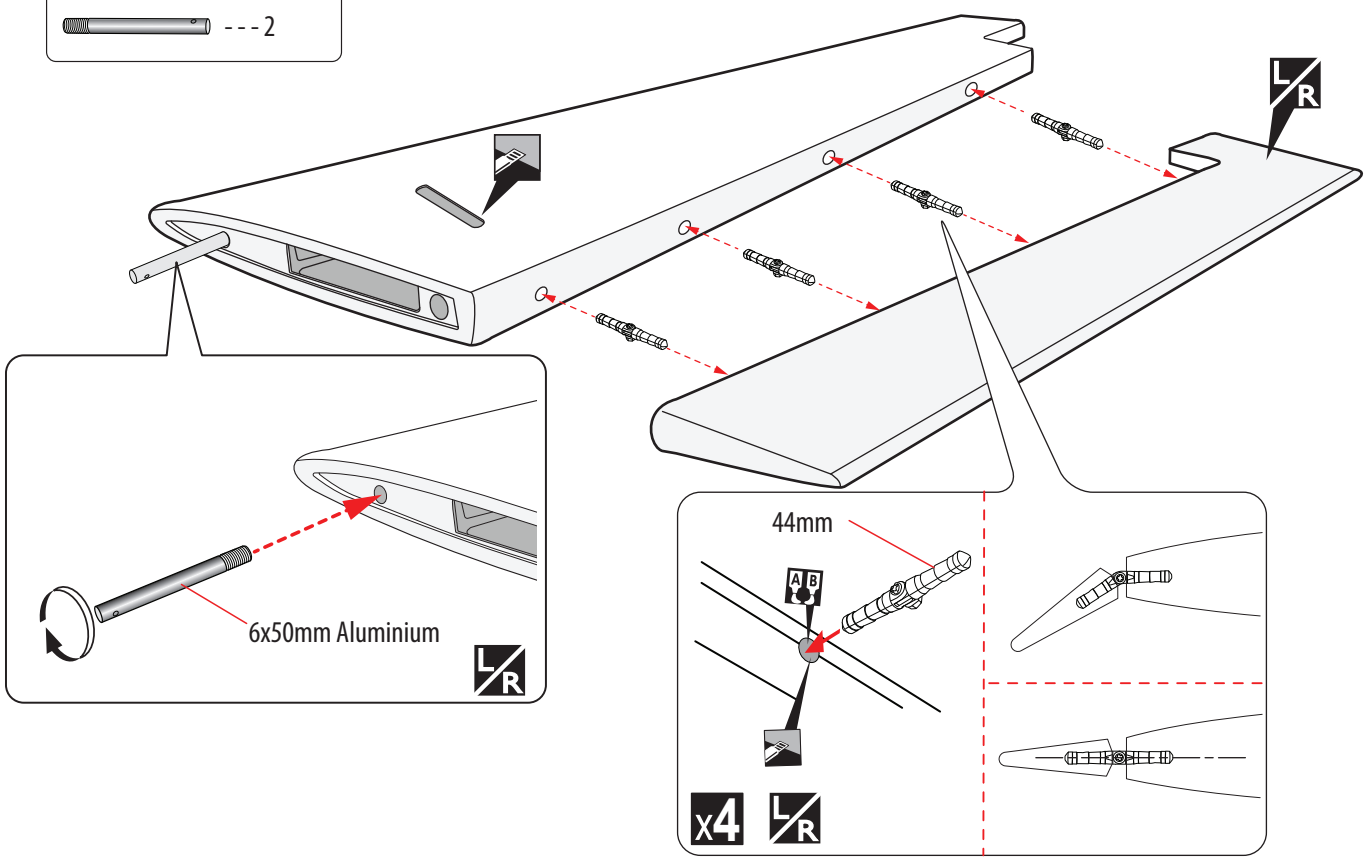
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INSTALLING THE HORIZONTAL STABILIZER

44mm Pinned Hinge --- 4

6x50mm Aluminium --- 2



x2 The number of times the same way Assembly (in this case twice).

A B Apply epoxy glue.

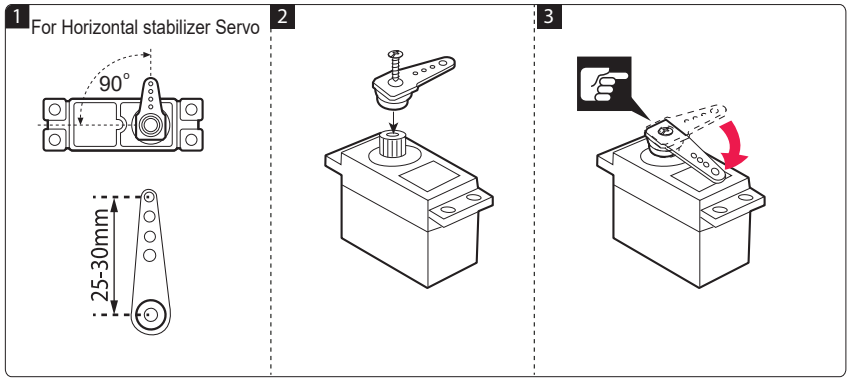
L/R Assemble left and right sides the same way.

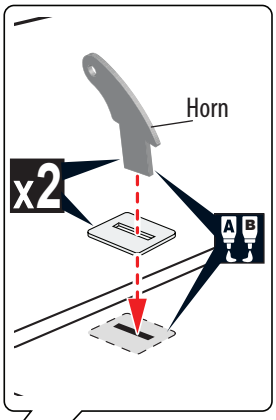
Cut off shaded portion carefully.

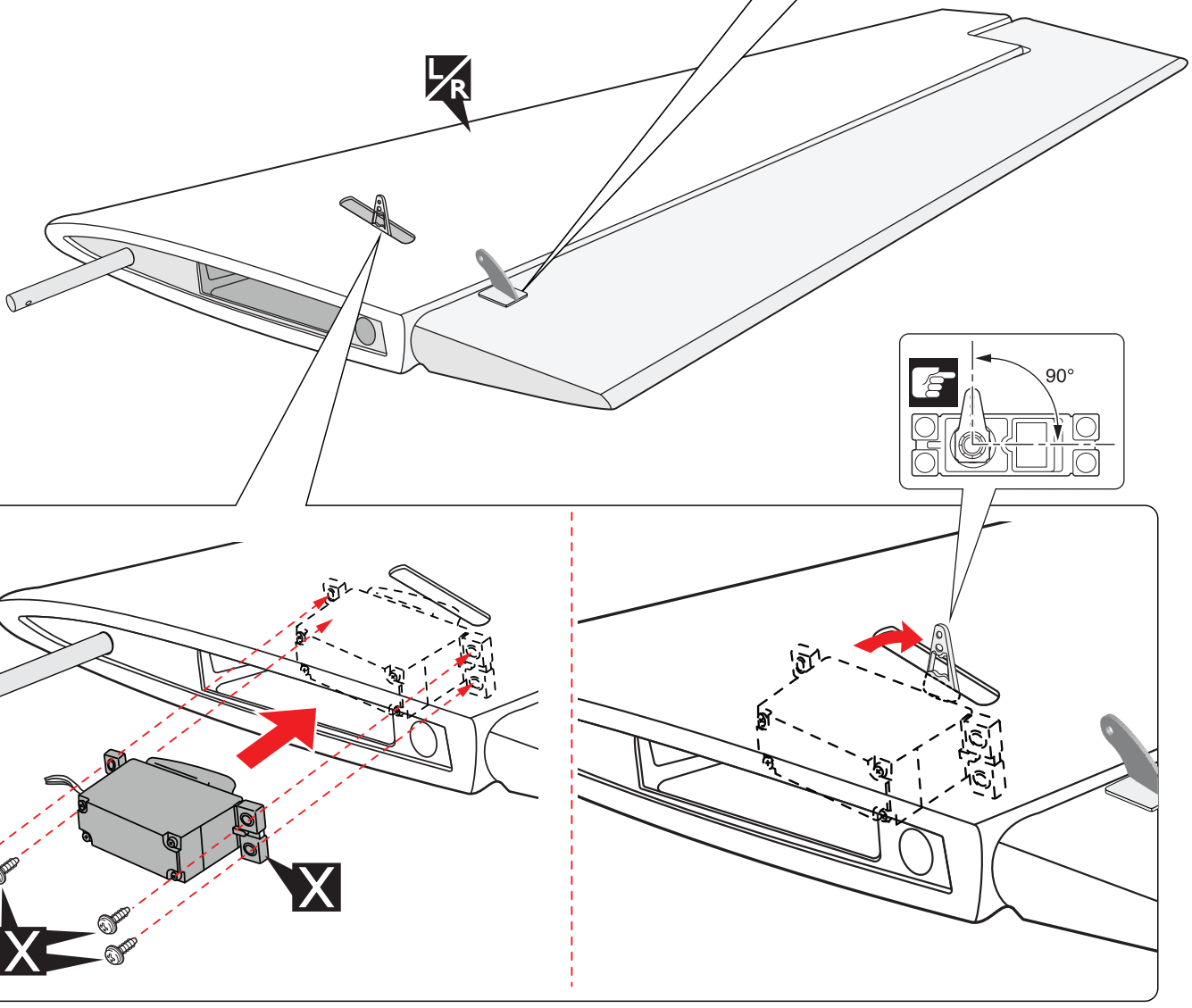
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INSTALLING THE HORIZONTAL STABILIZER SERVO

2.6x55mm Pushrod ---2
Horn ---2
---2
3x12mm Button Screw ---4
3mm Flat Washer ---4
3mm Lock Nut ---4
Brass Ball ---4
Ball Link ---4







x2 The number of times the same way Assembly (in this case twice).

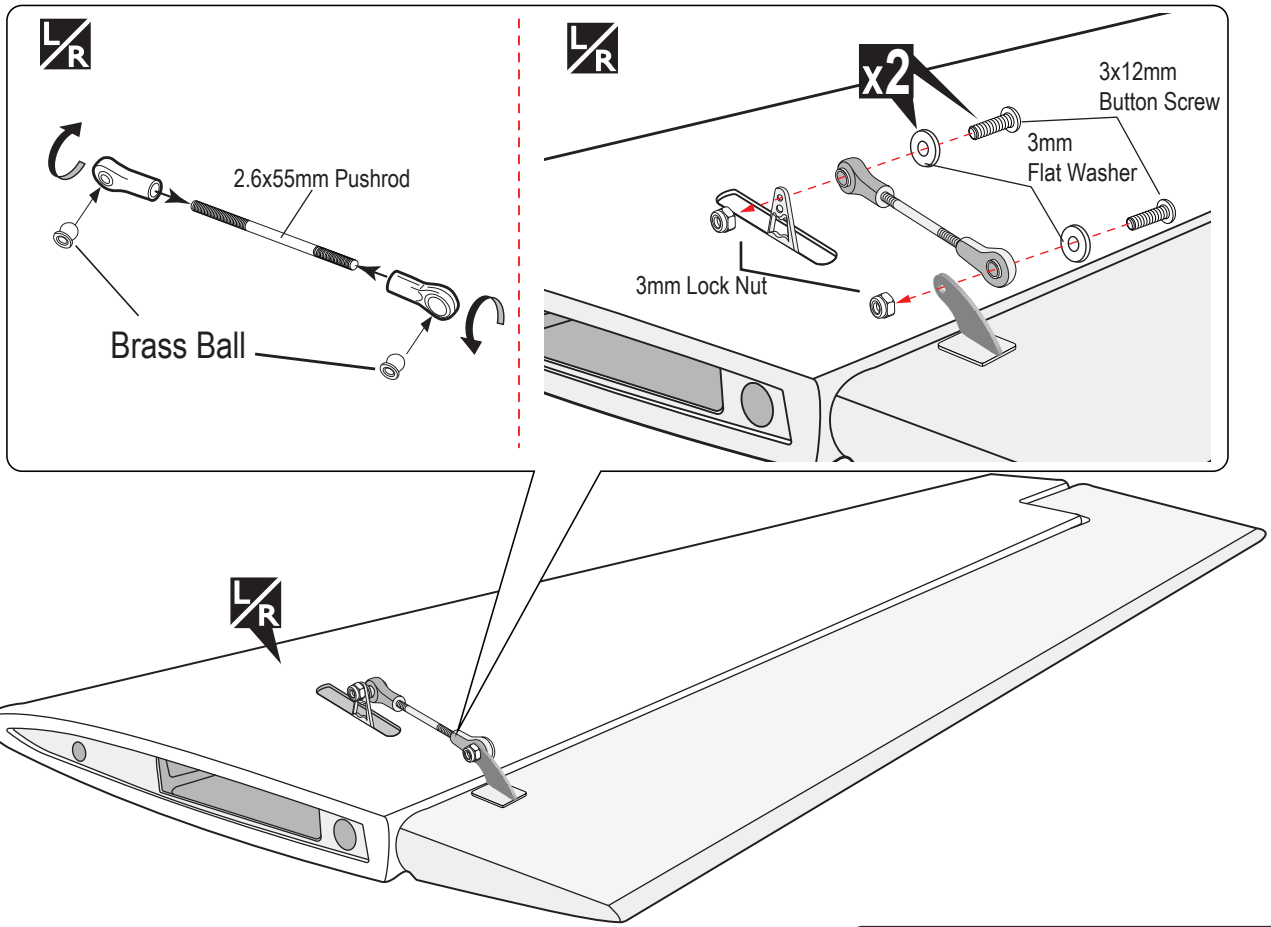
X Must be purchased separately!

Pay close attention here.

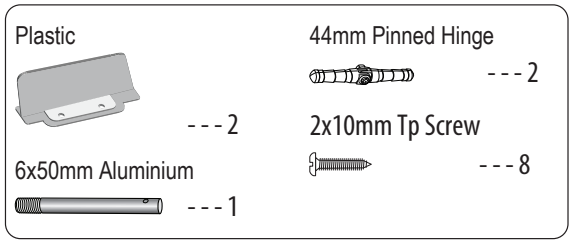
L/R Assemble left and right sides the same way

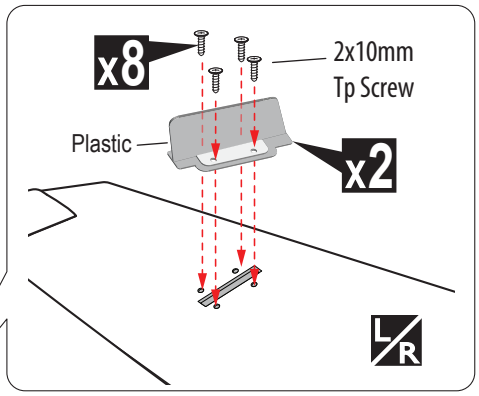
1.5mm Drill holes using the stated (in this case 1.5mm ø).

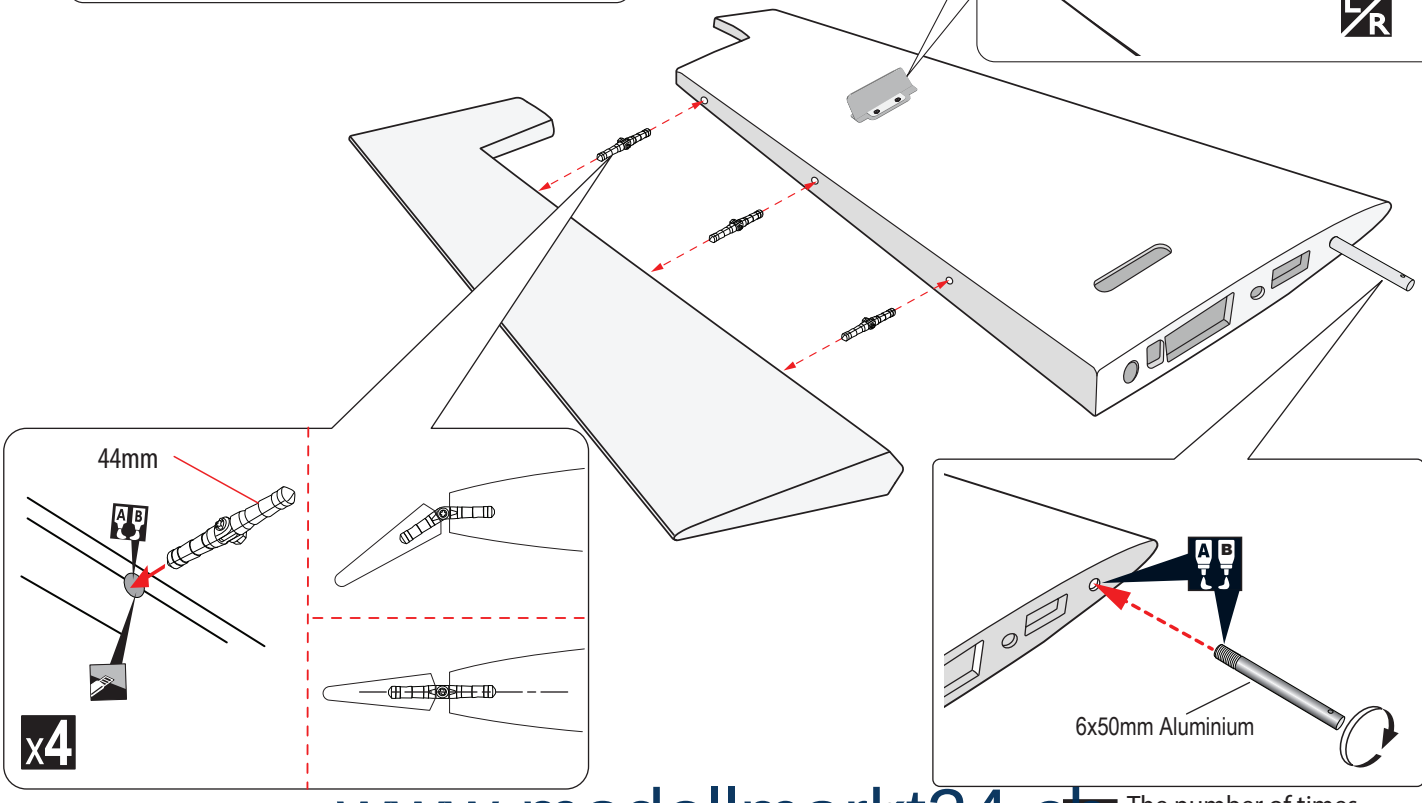
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INSTALLING THE VERTICAL STABILIZER







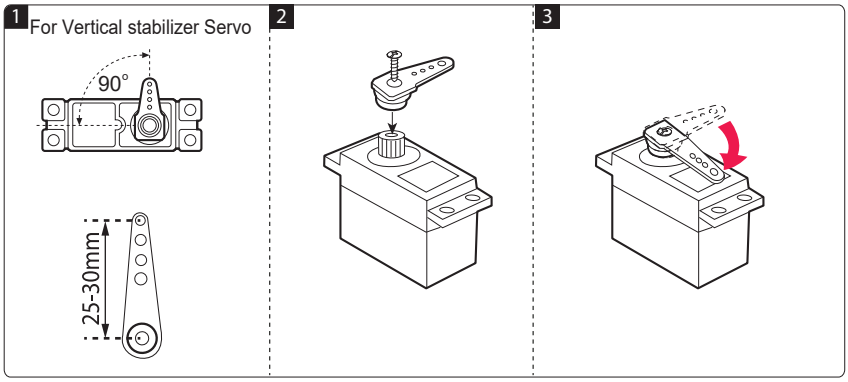
L/R Assemble left and right sides the same way

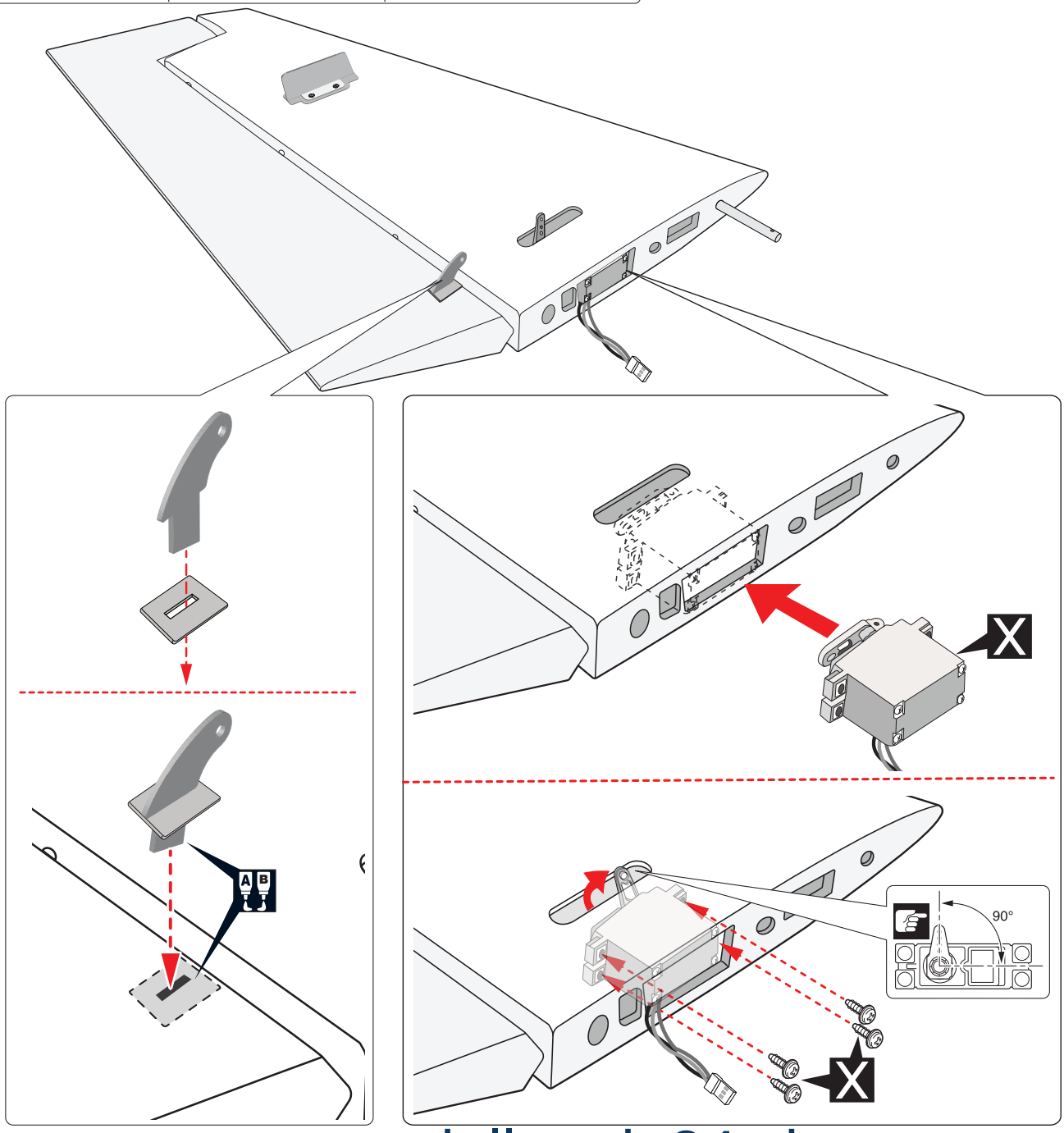
x2 The number of times the same way Assembly (in this case twice).

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INSTALLING THE VERTICAL STABILIZER SERVOS

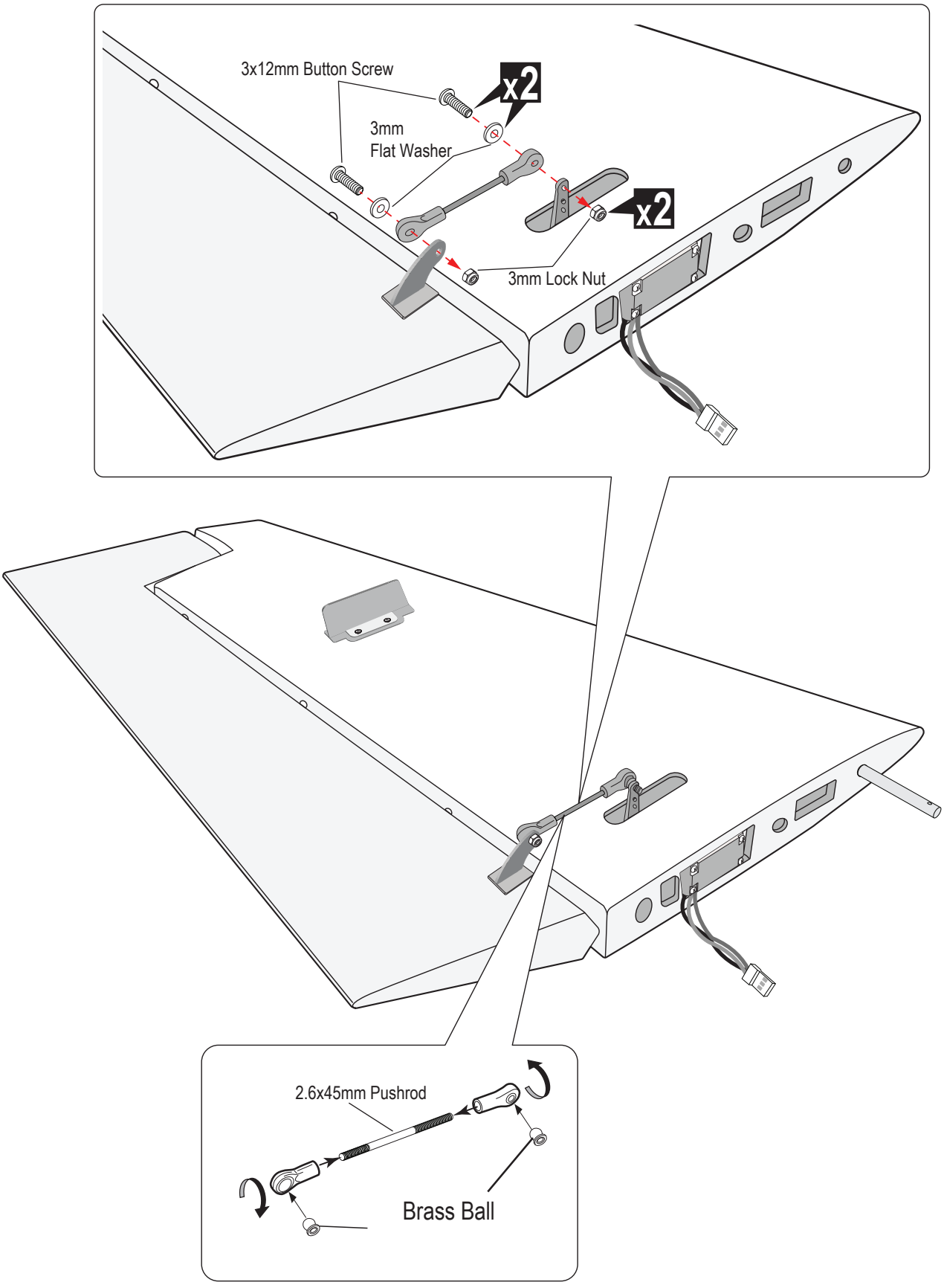
Horn ---2	Brass Ball ---2	3x12mm Button Screw ---2	3mm Flat Washer ---2
---2	Ball Link ---2	2.6x45mm Pushrod ---1	3mm Lock Nut ---2





Apply epoxy glue. X Must be purchased separately! Drill hole using the stated (in this case 1.5mm ø). Pay close attention here.

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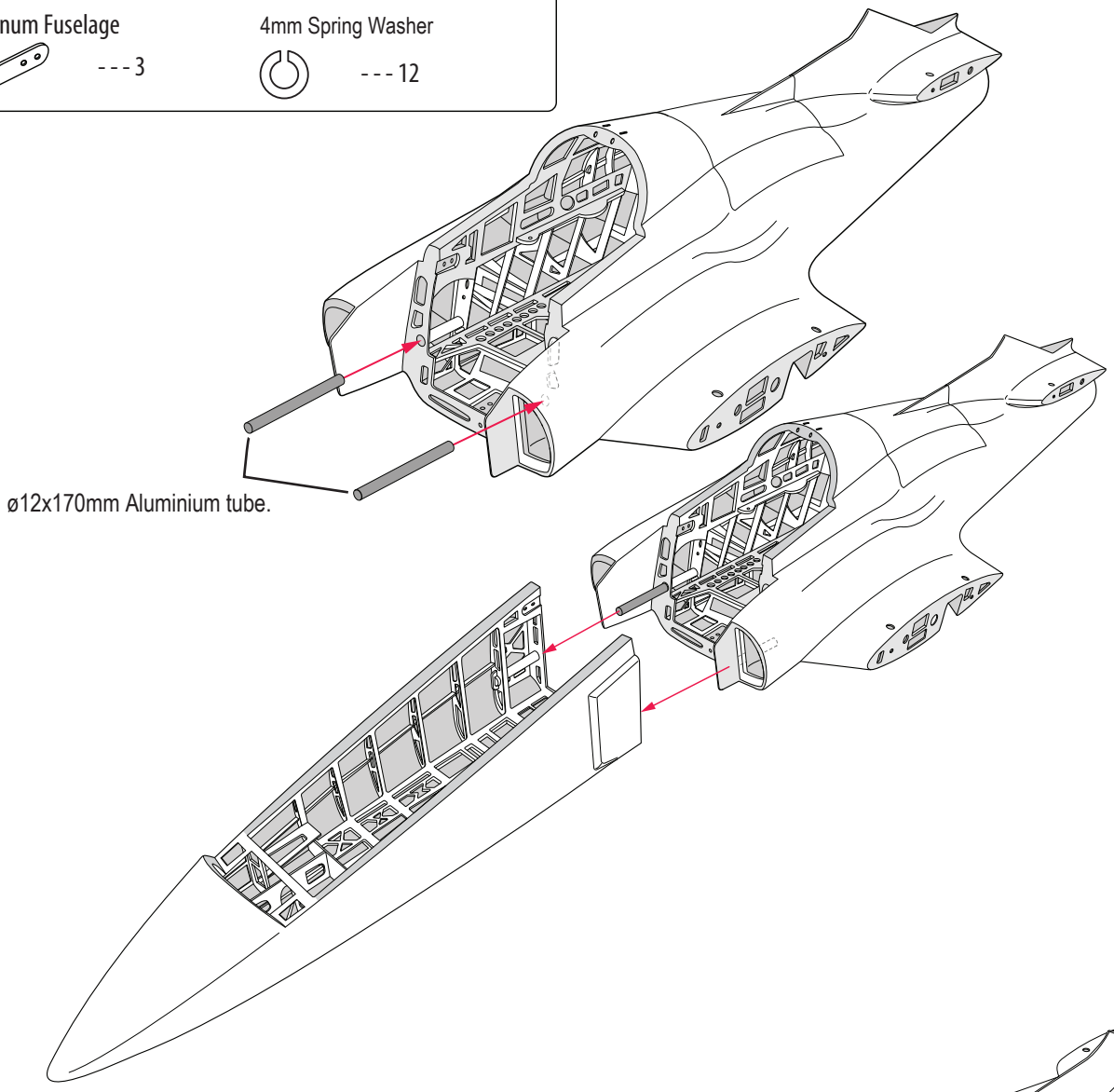


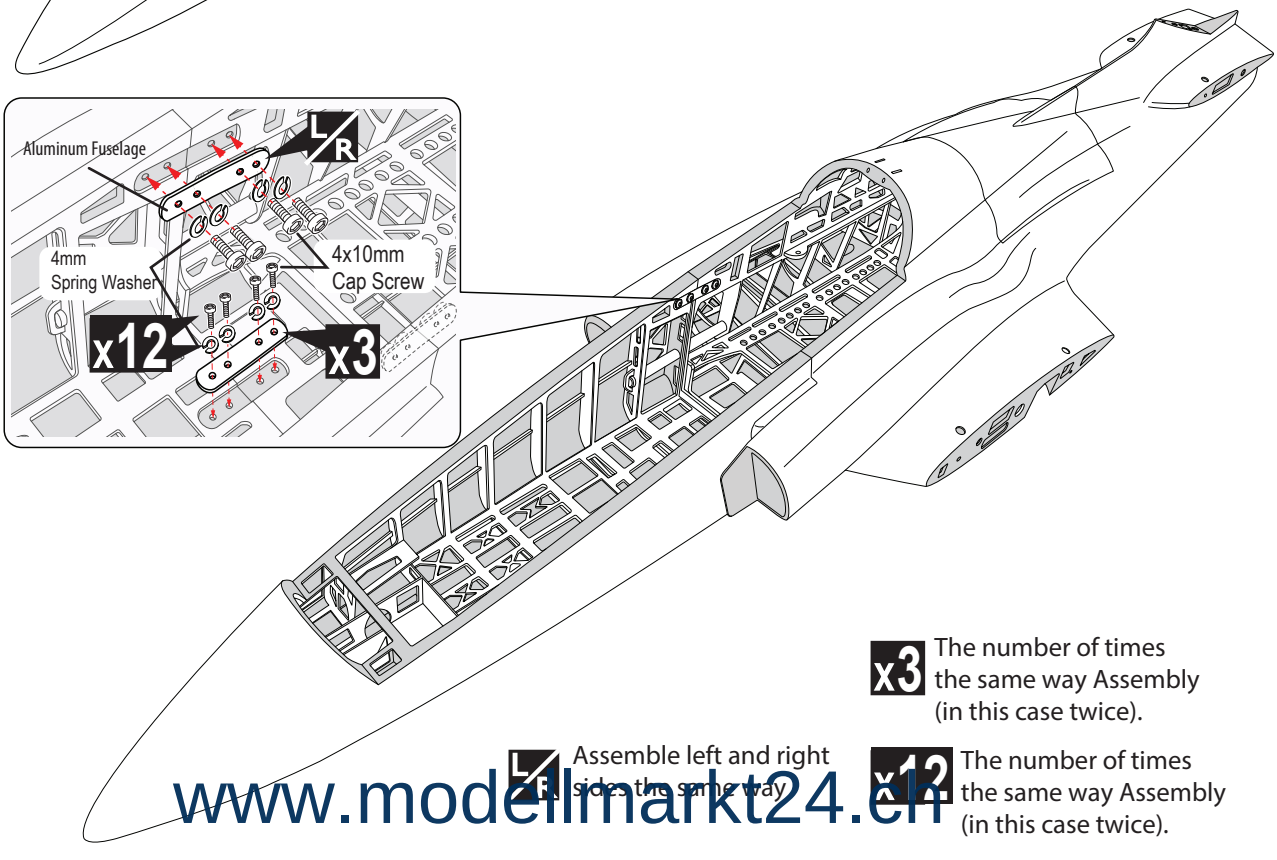
x2 The number of times the same way Assembly (in this case twice).

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INSTALLING THE FUSELAGE

ø12x170mm Aluminium tube. --- 2	4x10mm Socket Head Cap Screw --- 12
Aluminum Fuselage --- 3	4mm Spring Washer --- 12





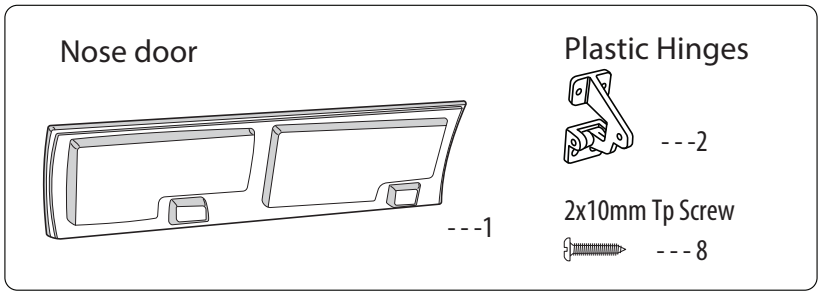
x3 The number of times the same way Assembly (in this case twice).

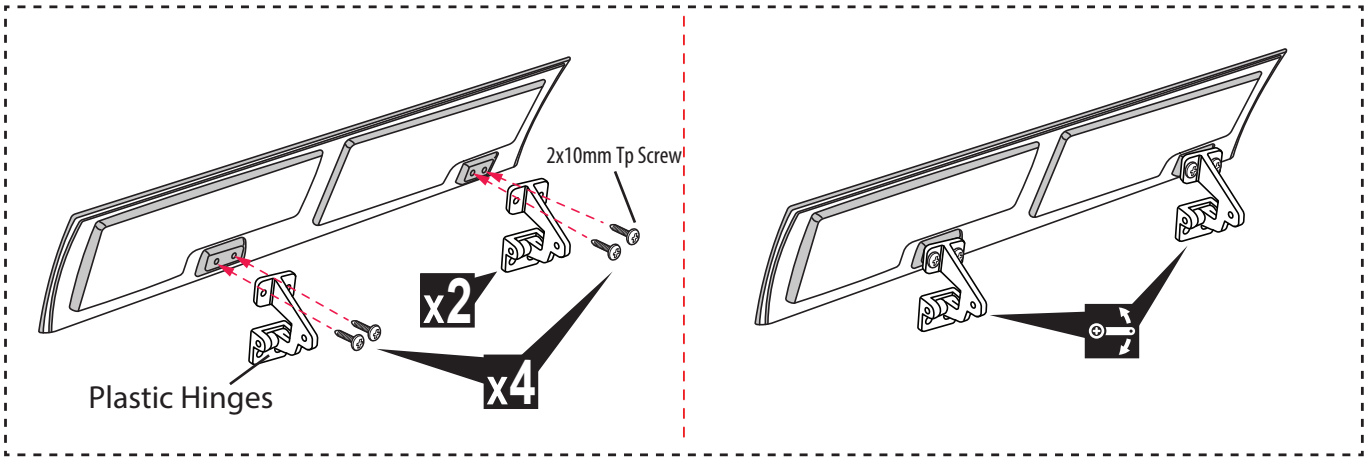
L/R Assemble left and right sides the same way.

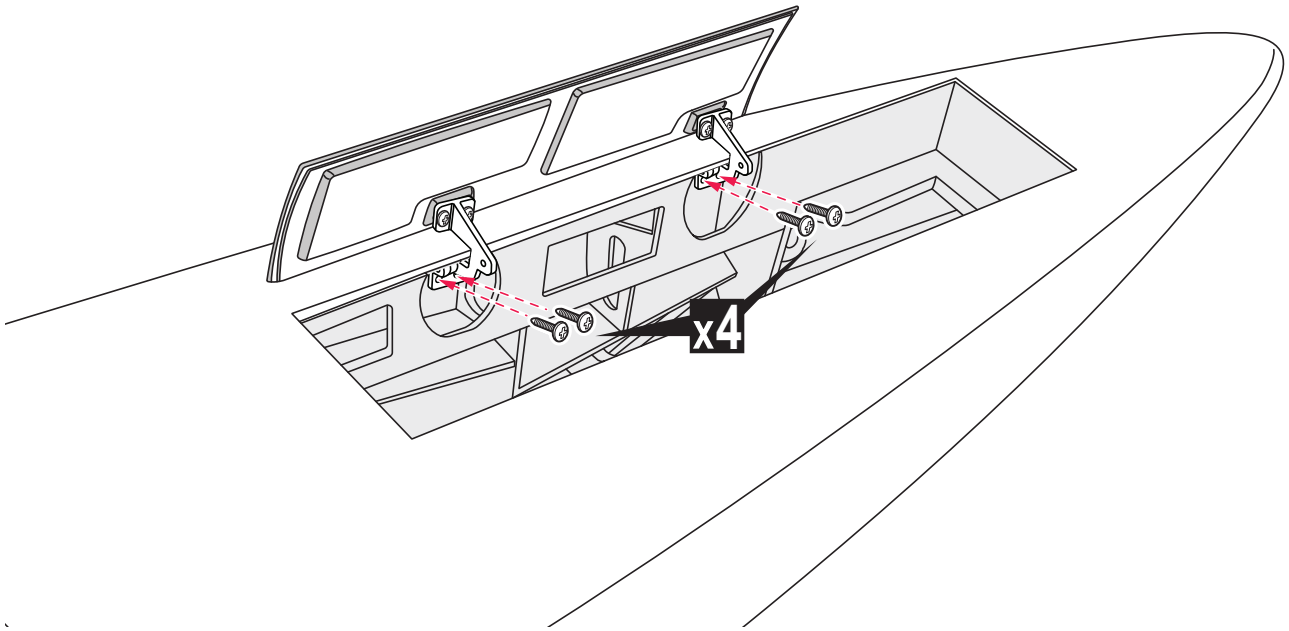
x12 The number of times the same way Assembly (in this case twice).

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NOSE DOOR INSTALLING







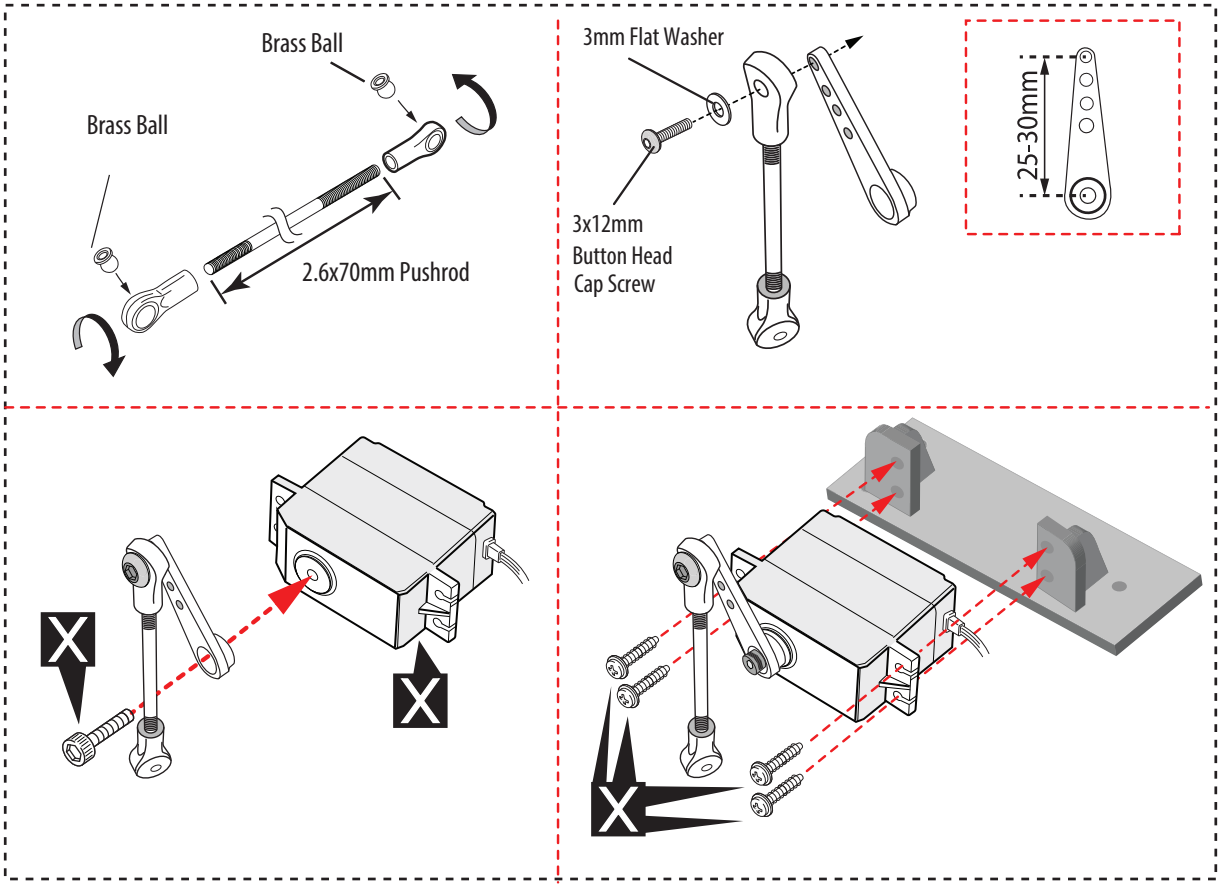
Ensure smooth, non-binding movement when assembling.

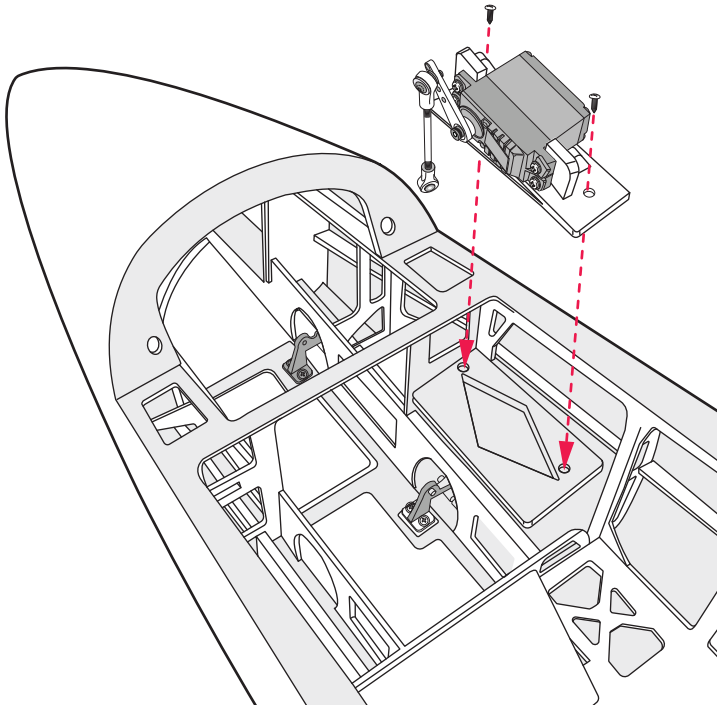
x2 The number of times the same way Assembly (in this case twice).

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INSTALLING NOSE DOOR SERVOS

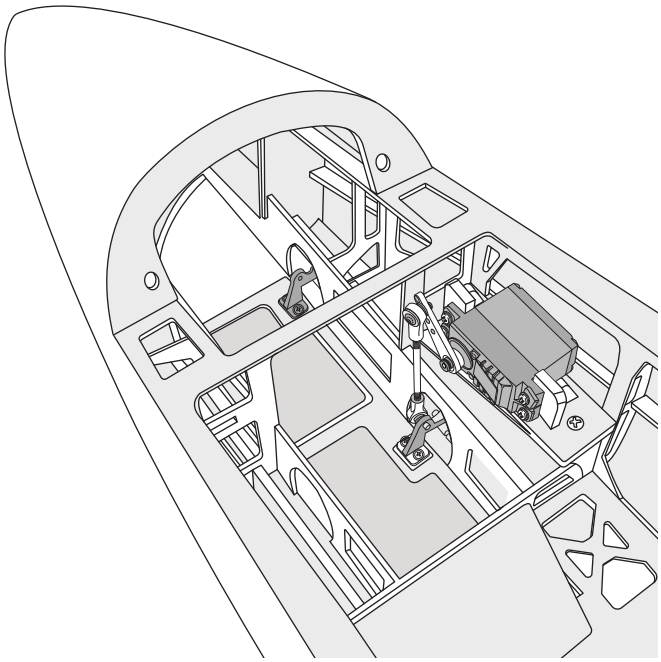
2.6x70mm Pushrod ---1	Brass Ball ---2	3x12mm Button Screw ---2
3mm Lock Nut ---1	Ball Link ---2	3mm Flat Washer ---2

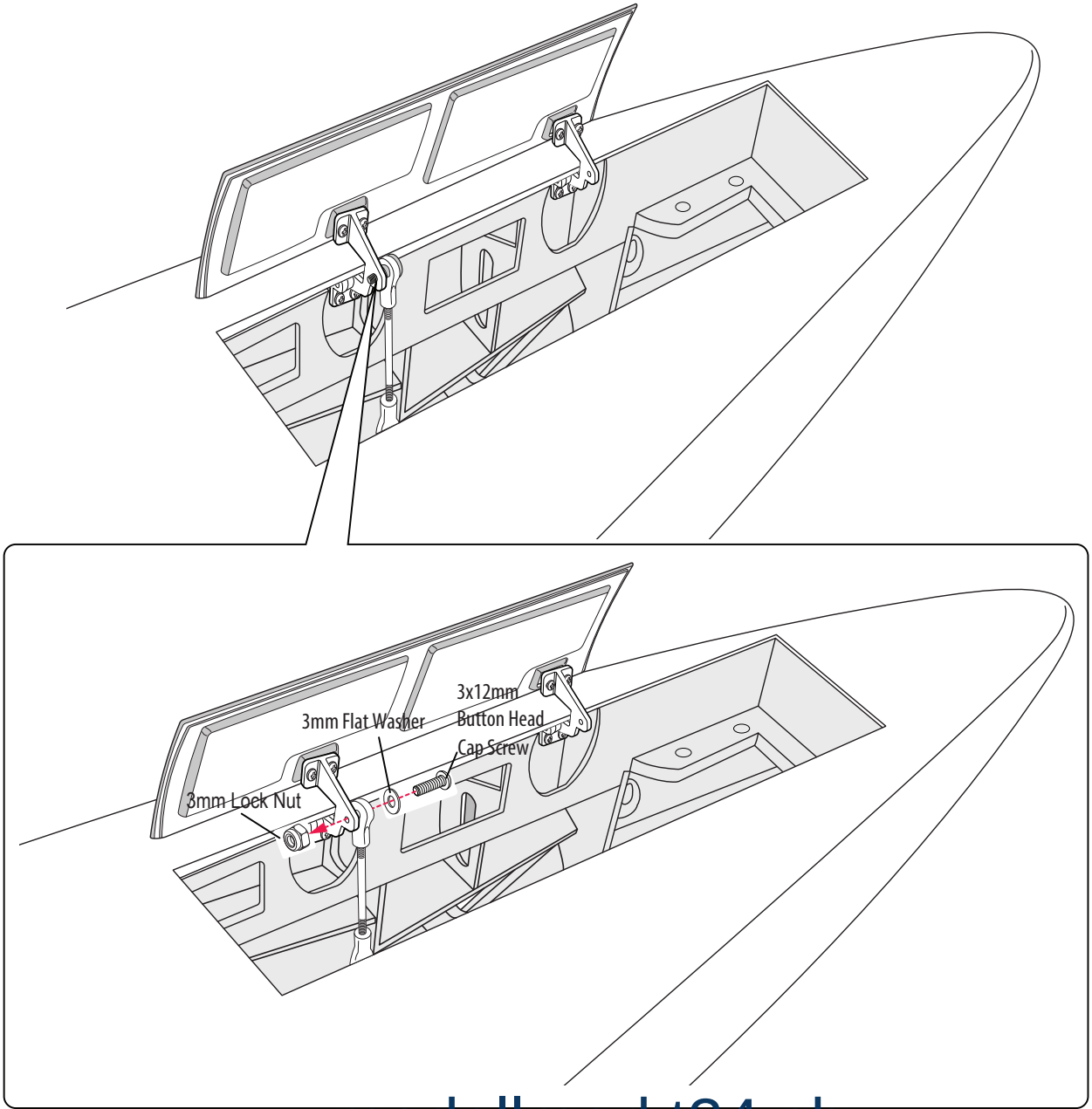




X Must be purchased separately

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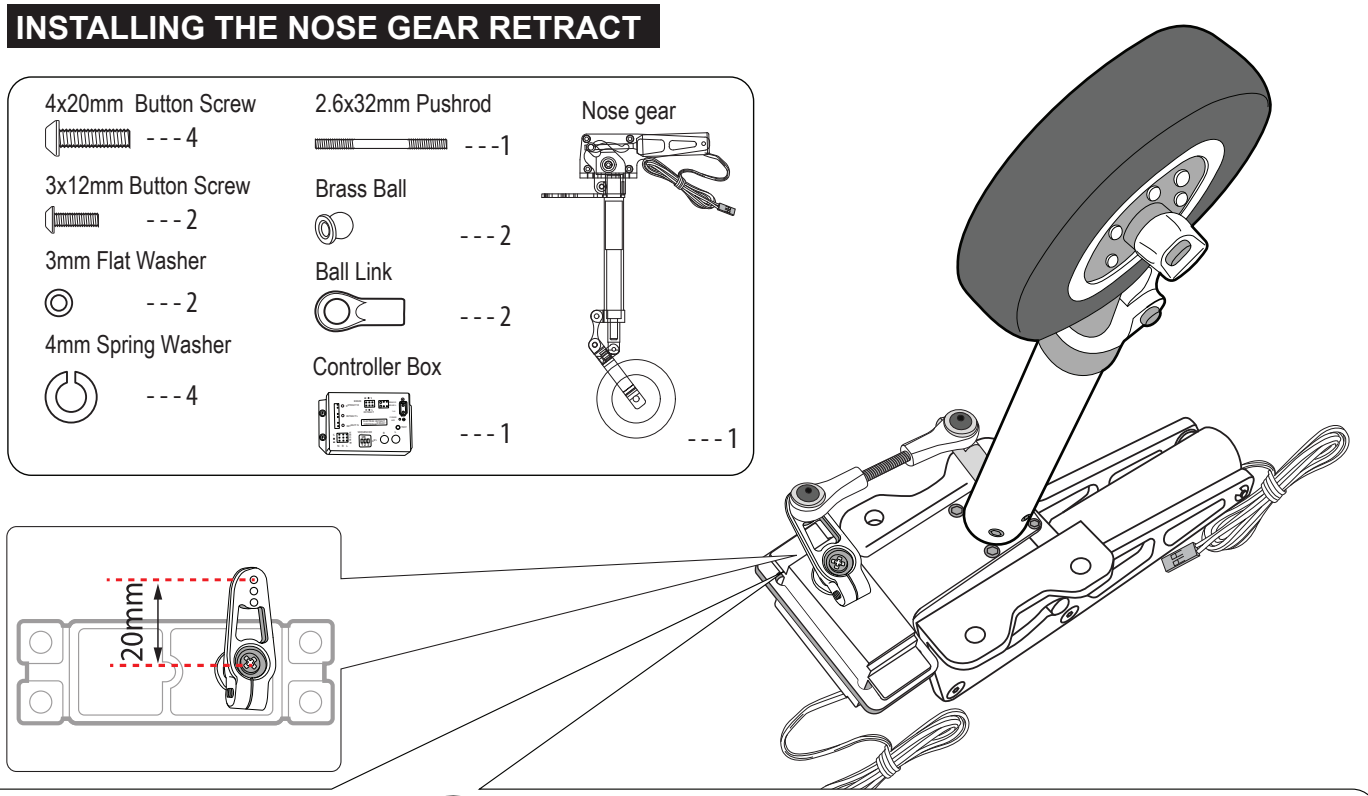


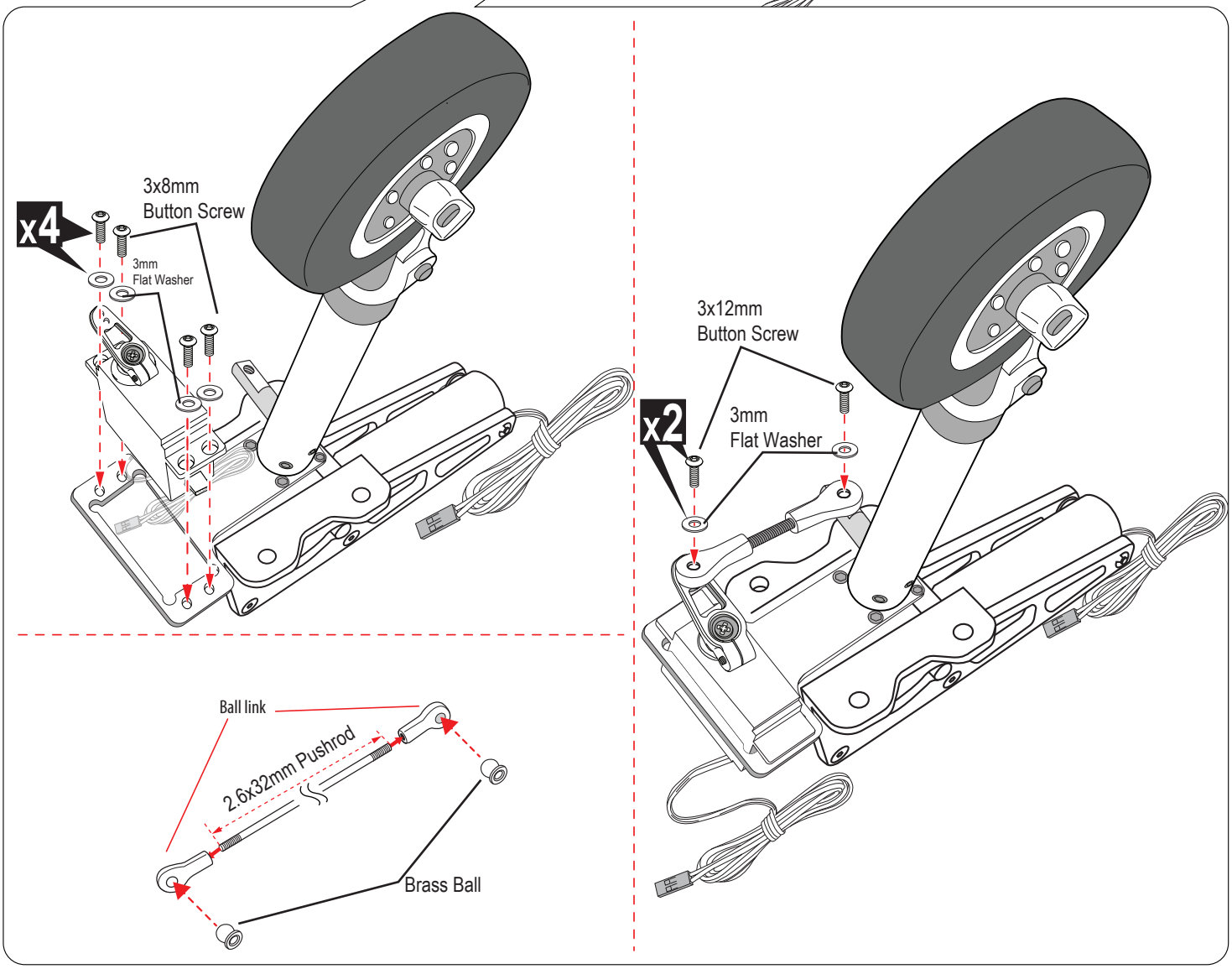


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INSTALLING THE NOSE GEAR RETRACT

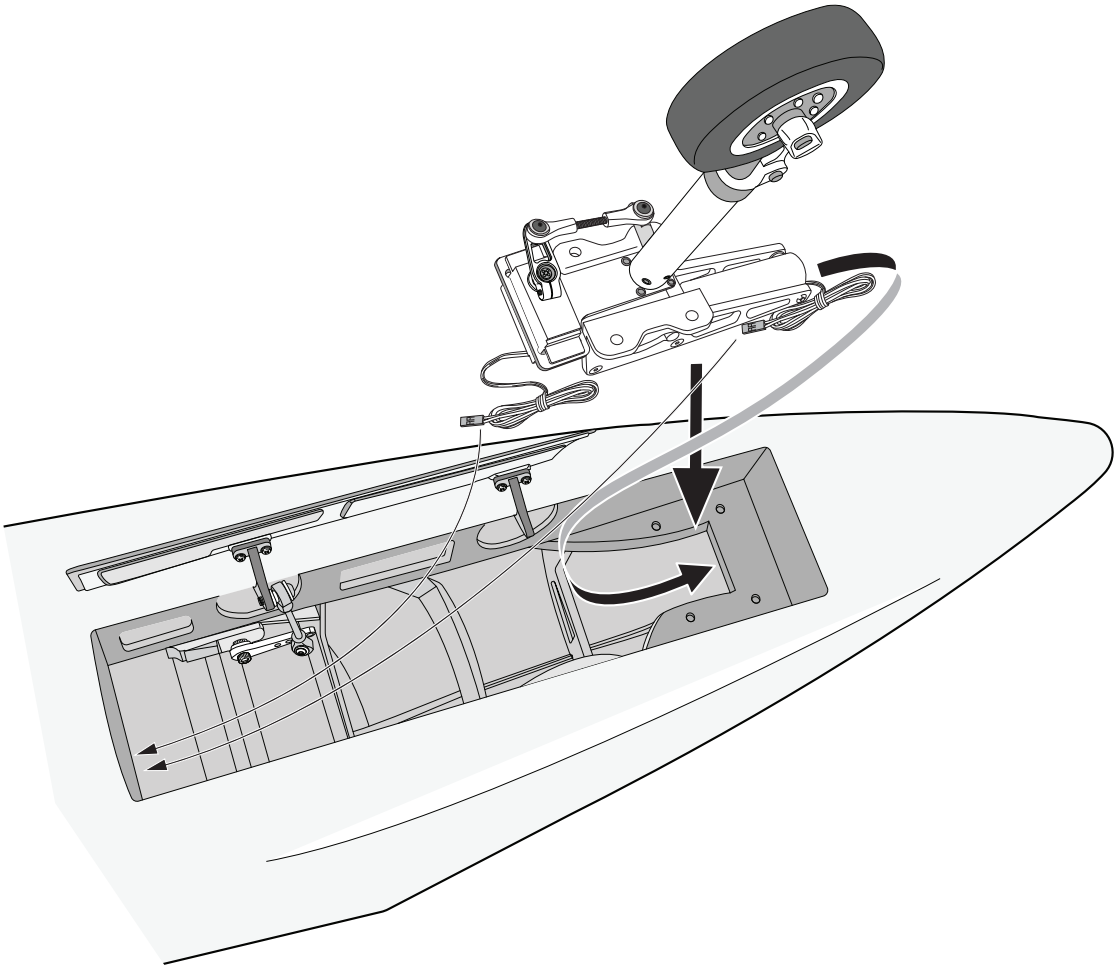
4x20mm Button Screw ---4
3x12mm Button Screw ---2
3mm Flat Washer ---2
4mm Spring Washer ---4
2.6x32mm Pushrod ---1
Brass Ball ---2
Ball Link ---2
Controller Box ---1
Nose gear ---1

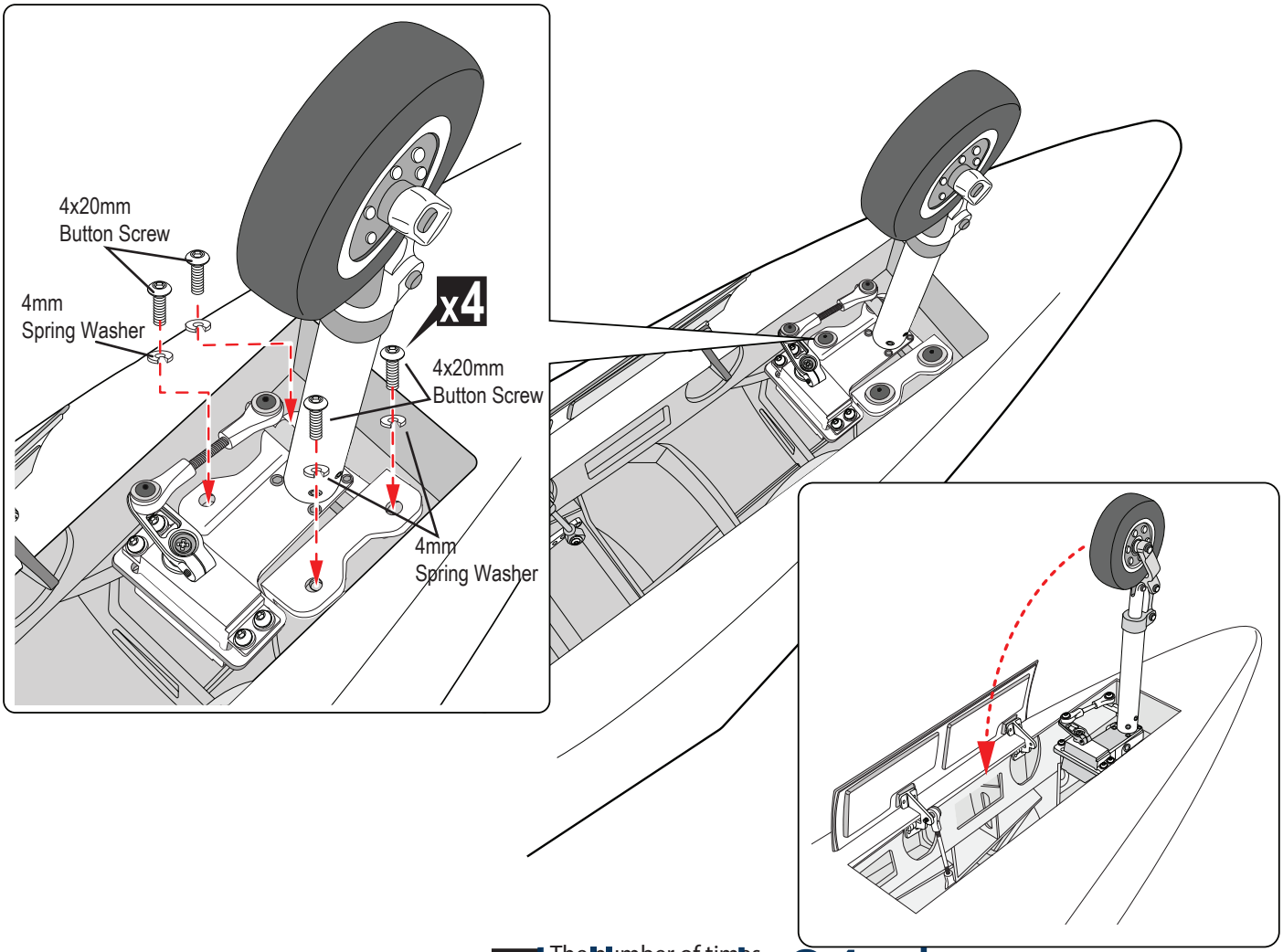




x4 The number of times the same way assembly (in this case twice).

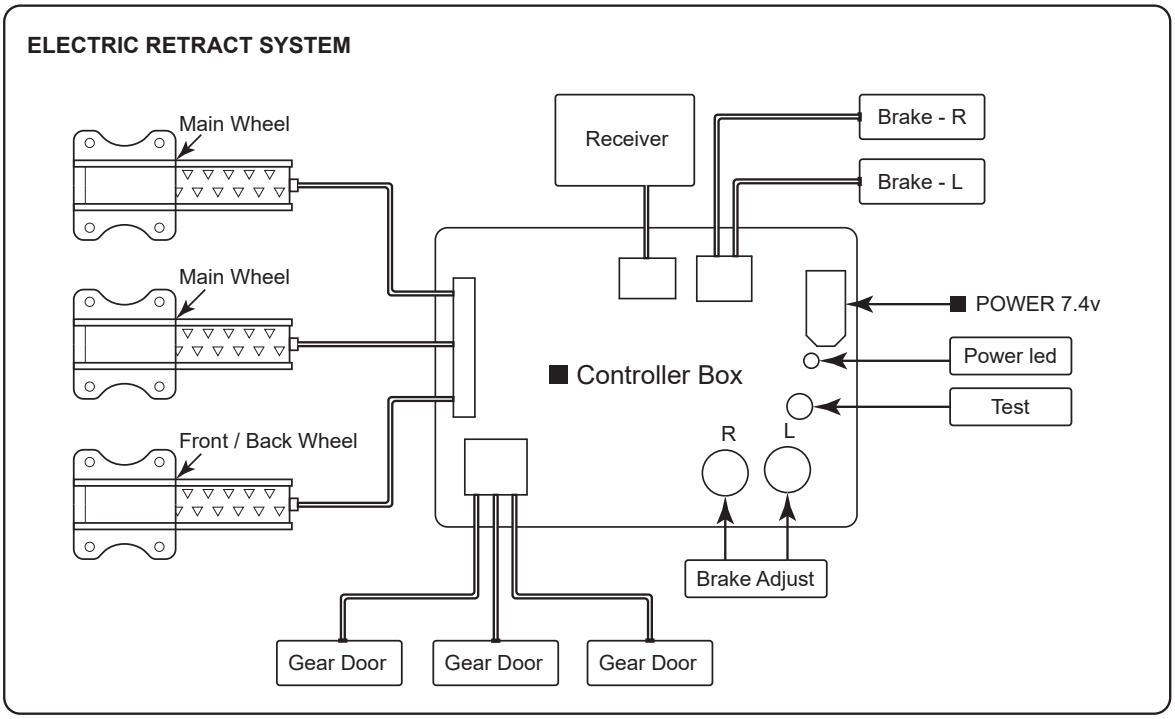
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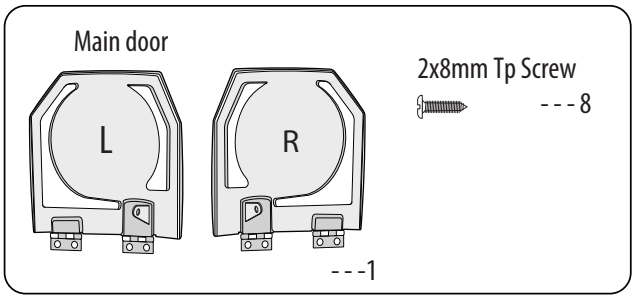


The number of times you have to repeat the same step is indicated by the number of boxes next to the step (in this case twice).

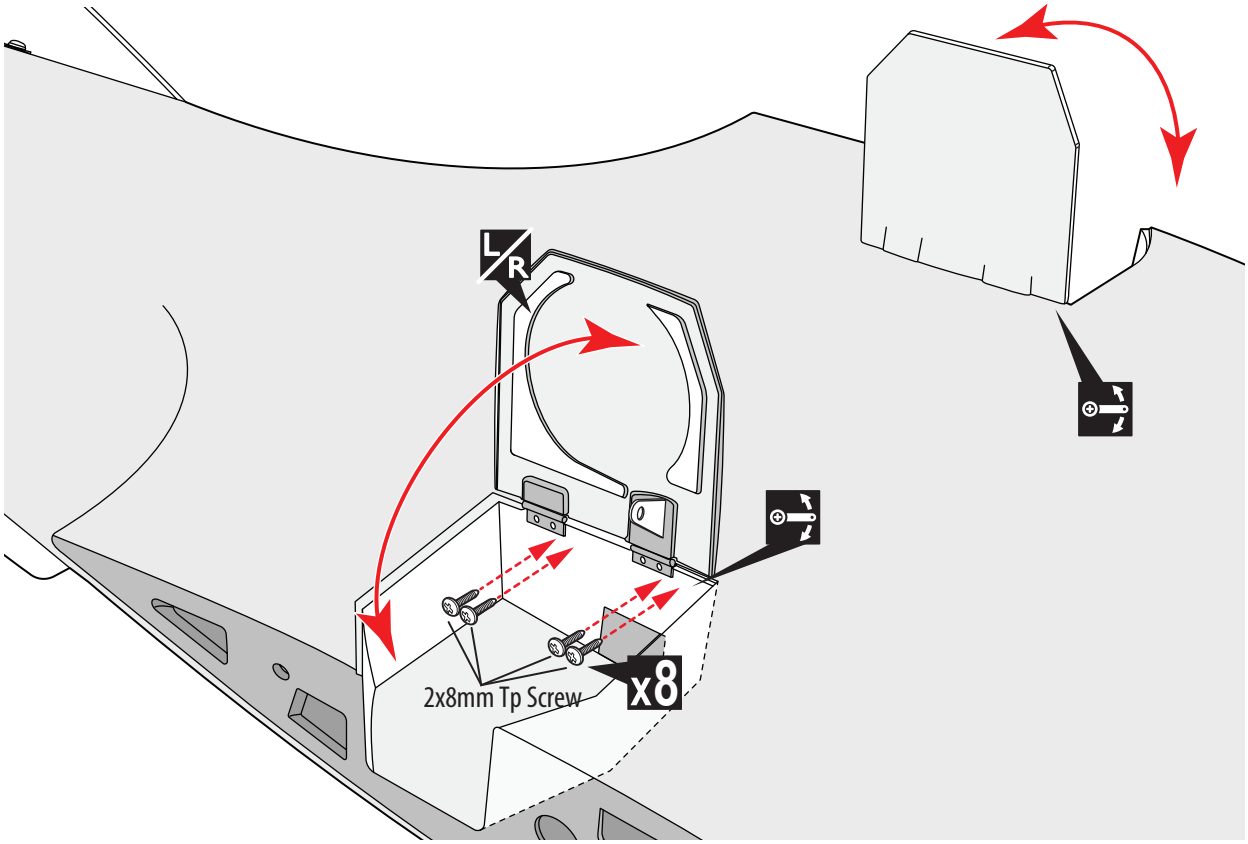
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MAIN DOOR INSTALLING



Bottom view



Assemble left and right sides the same way

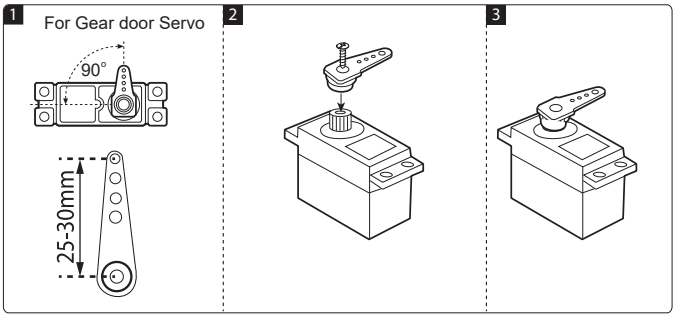
Ensure smooth, non-binding movement when assembling

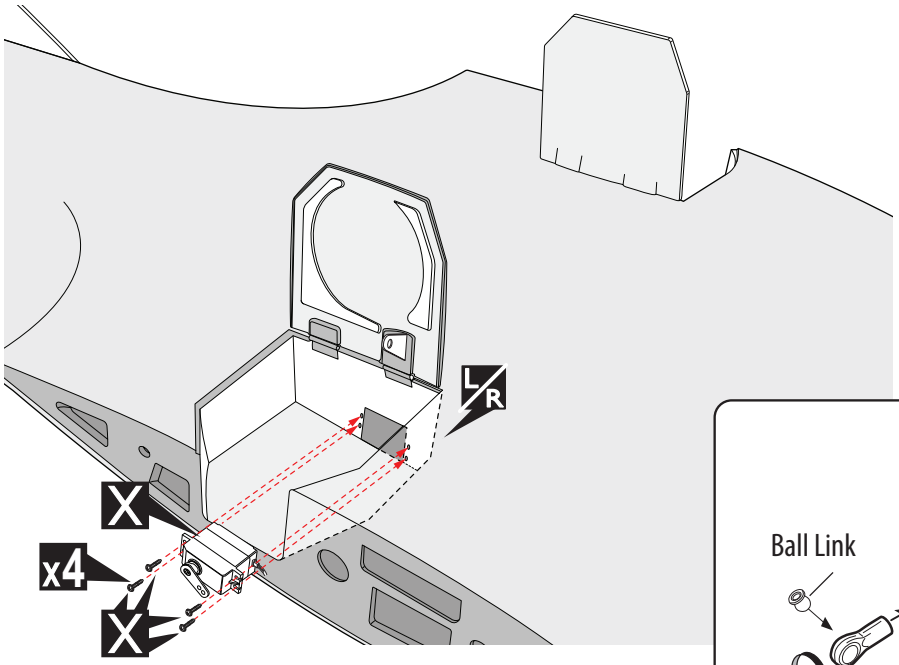
x8 The number of times the same way Assembly (in this case twice).

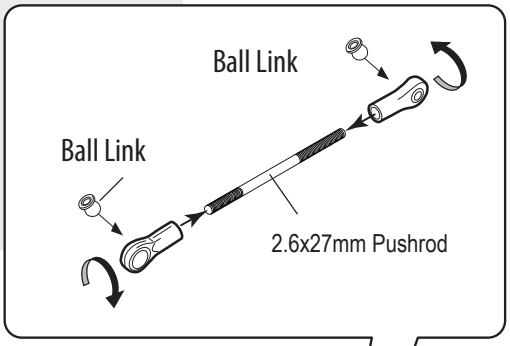
www.modellmarkt24.ch

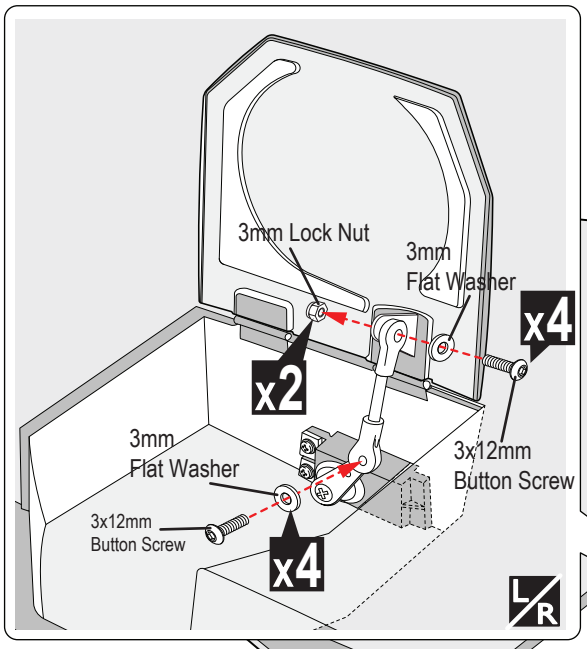
INSTALLING THE MAIN GEAR DOOR SERVOS

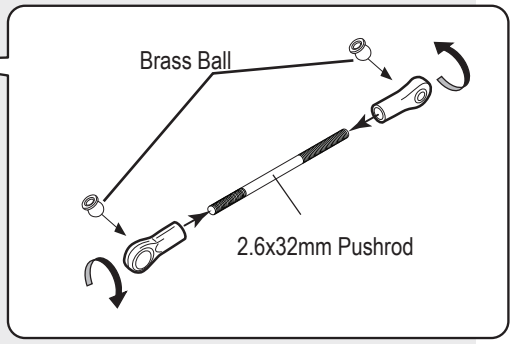
2.6x32mm Pushrod ---1	Ball Link ---4	3x12mm Button Screw ---4
2.6x27mm Pushrod ---1	Brass Ball ---4	3mm Flat Washer ---4
3mm Lock Nut ---2		











x2 The number of times the same way Assembly (in this case twice).

X Must be purchased separately!

L/R Assemble left and right sides the same way.

1.5mm Drill holes using the stated (in this case 1.5mm ø).

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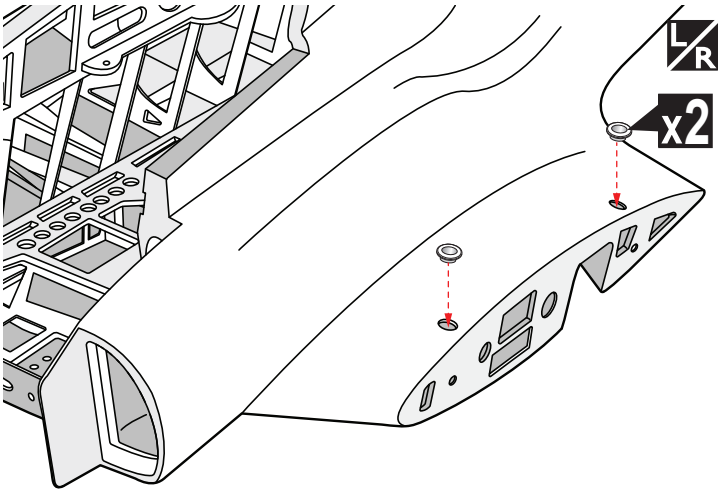
INSTALLING THE WINGS TO FUSELAGE

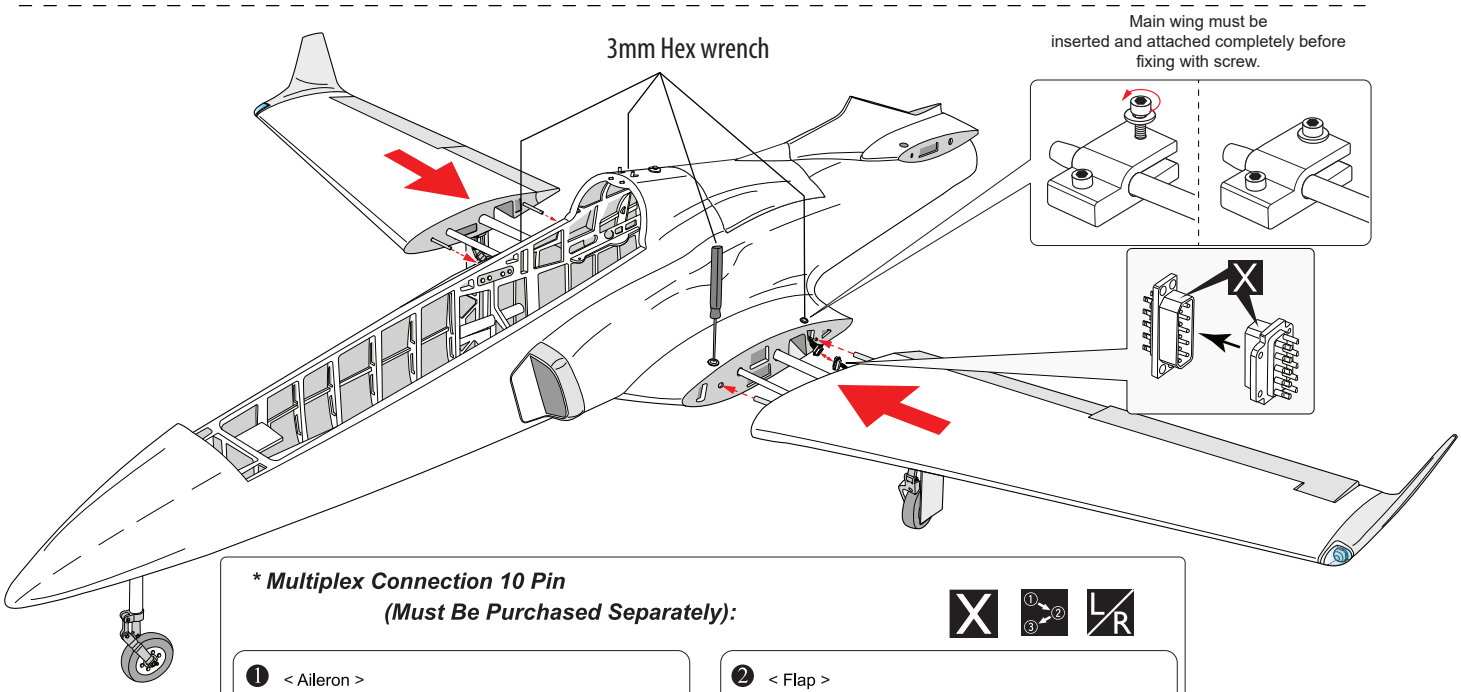
ø20x1078mm Fiber Carbon Tube

ø12x860mm Fiber Carbon Tube

Plastic - - - 4

<Top view> <Left view> <Perspective>

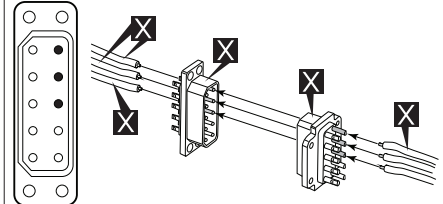




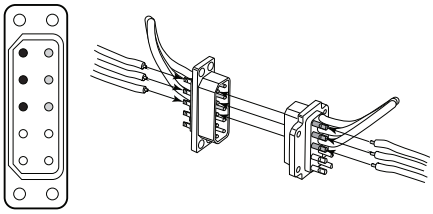
**** Multiplex Connection 10 Pin***
(Must Be Purchased Separately):

X ①②③ L/R

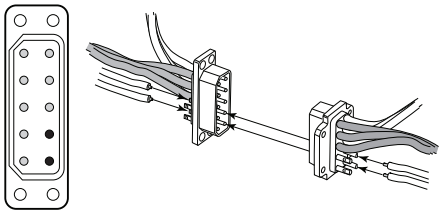
❶ < Aileron >



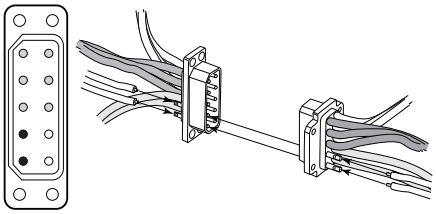
❷ < Flap >



❸ < Main Gear >



❹ < Brakes >



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X Must be purchased separately!

L/R Assemble left and right sides the same way

①②③ Assemble in the specified order.

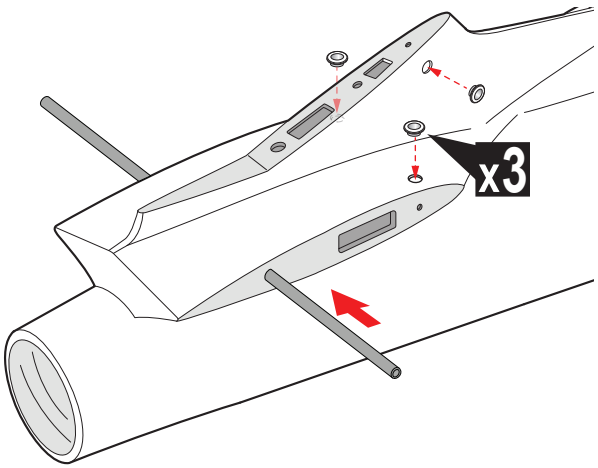
x2 The number of times the same way Assembly (in this case twice).

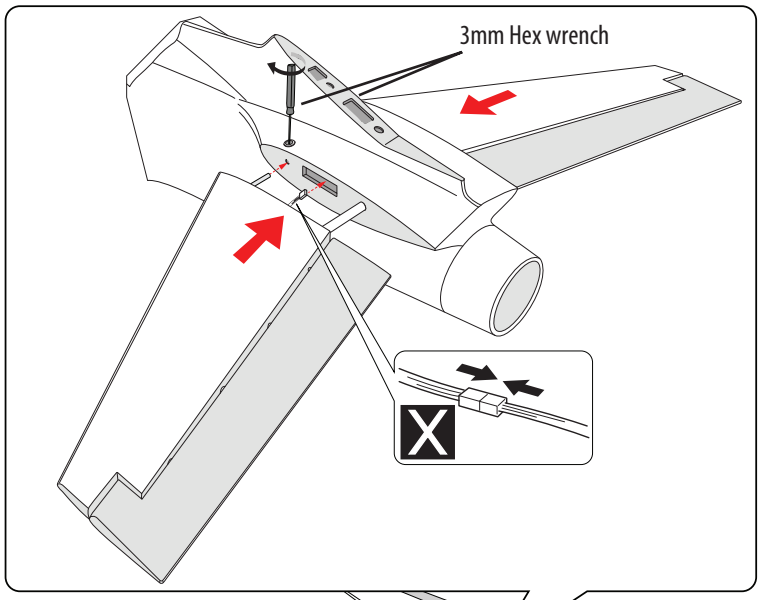
INSTALLING THE HORIZONTAL STABILIZER TO FUSELAGE

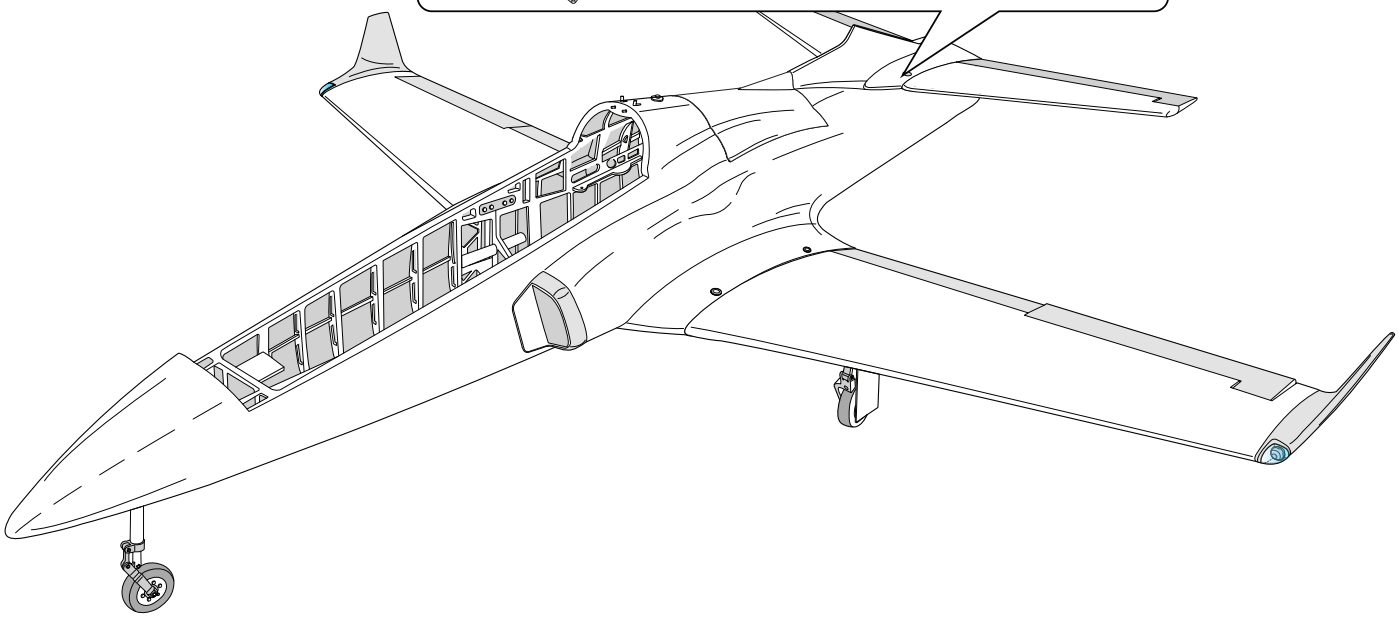
ø12x596mm Fiber Carbon Tube ---1

Plastic ---3

<Top view> <Left view> <Perspective>







2 The number of times you do the same way Assembly (in this case twice).

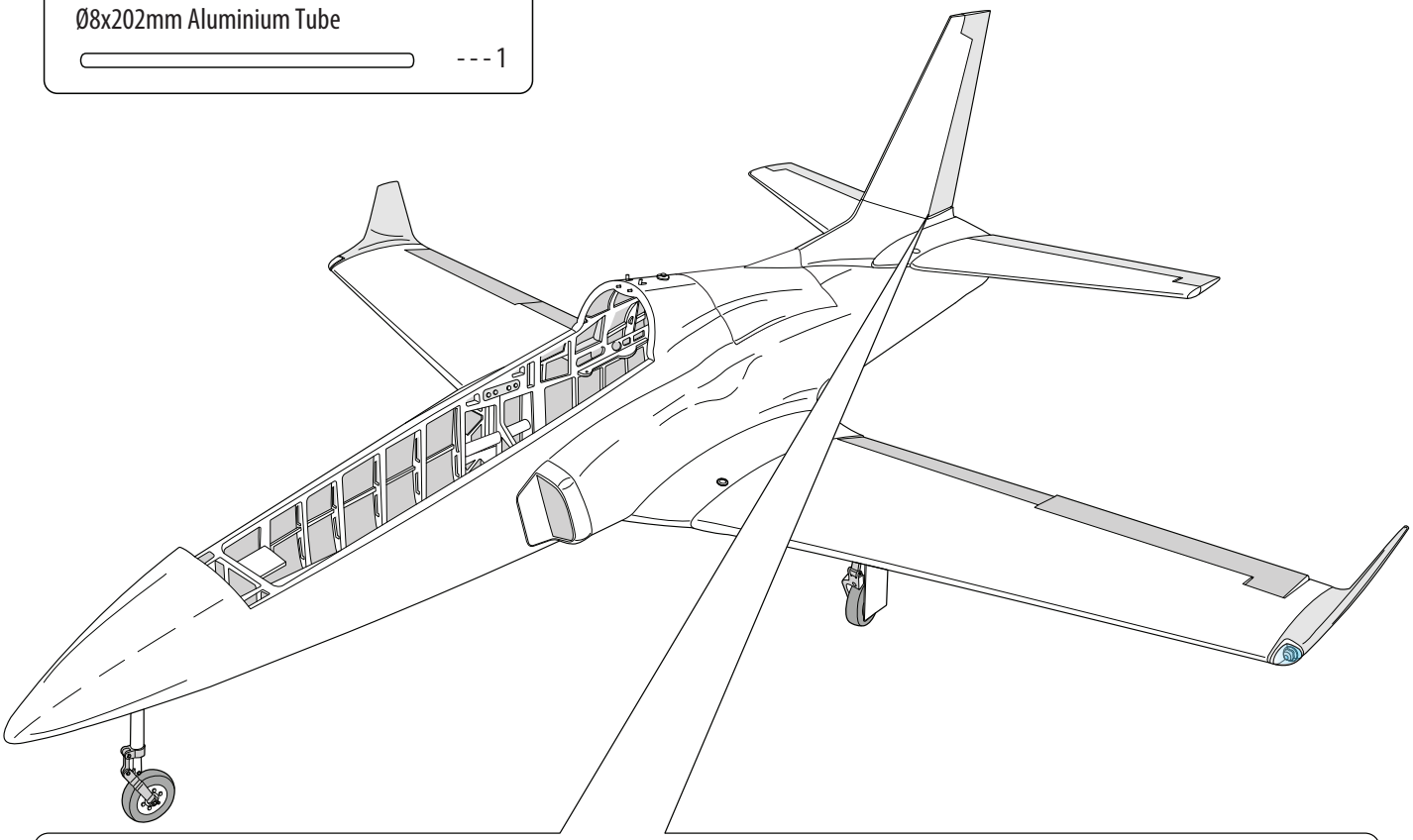
X Must be purchased separately!

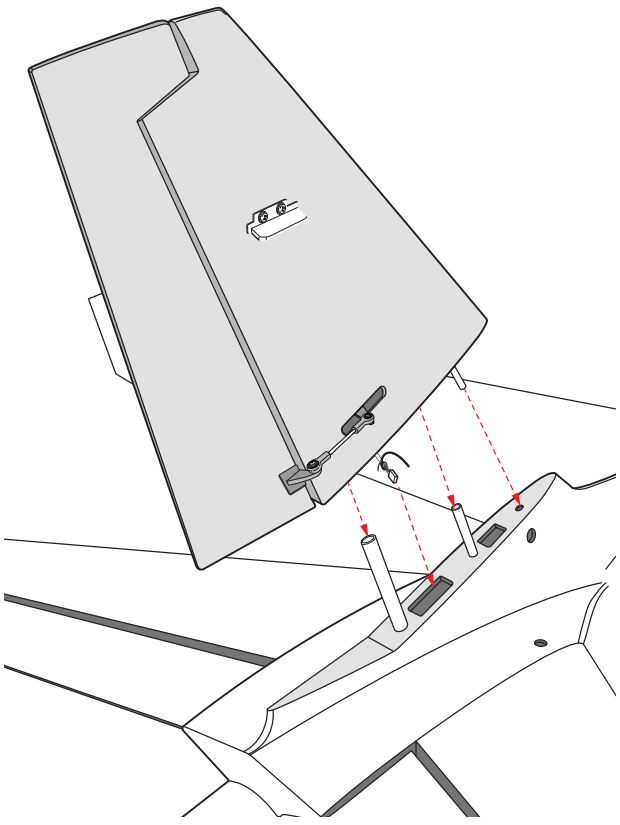
www.modellmarkt24.de

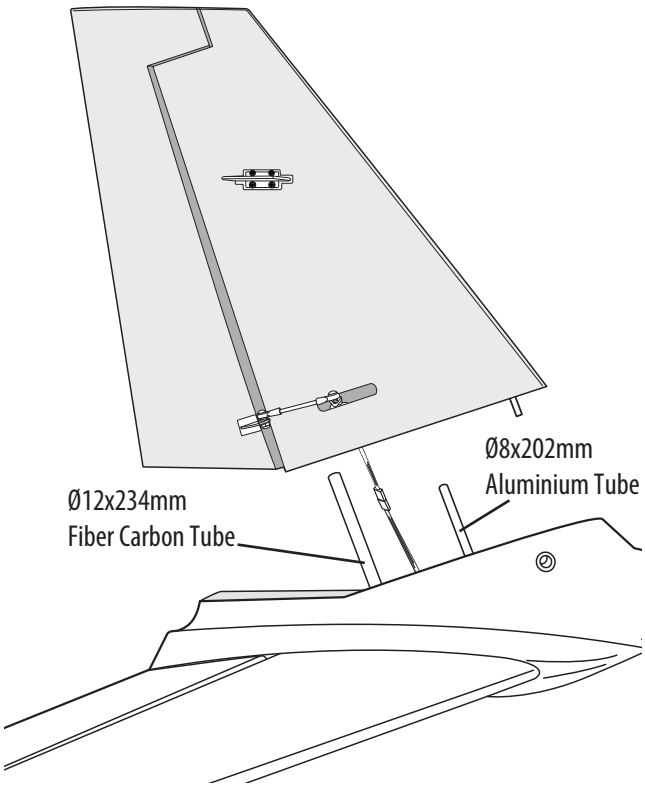
INSTALLING THE VERTICAL STABILIZER TO FUSELAGE

Ø12x234mm Fiber Carbon Tube ---1

Ø8x202mm Aluminium Tube ---1

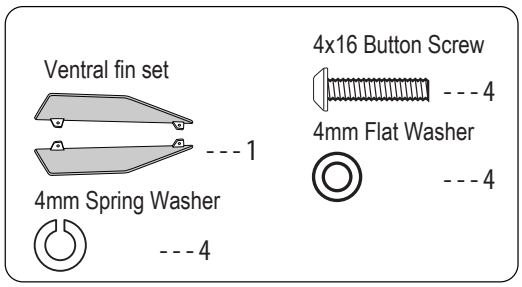


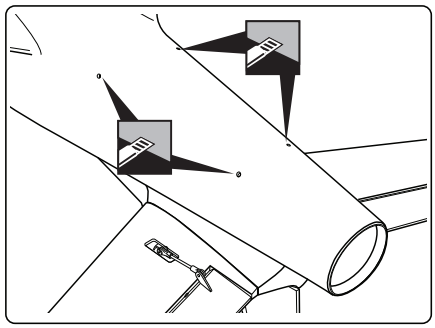


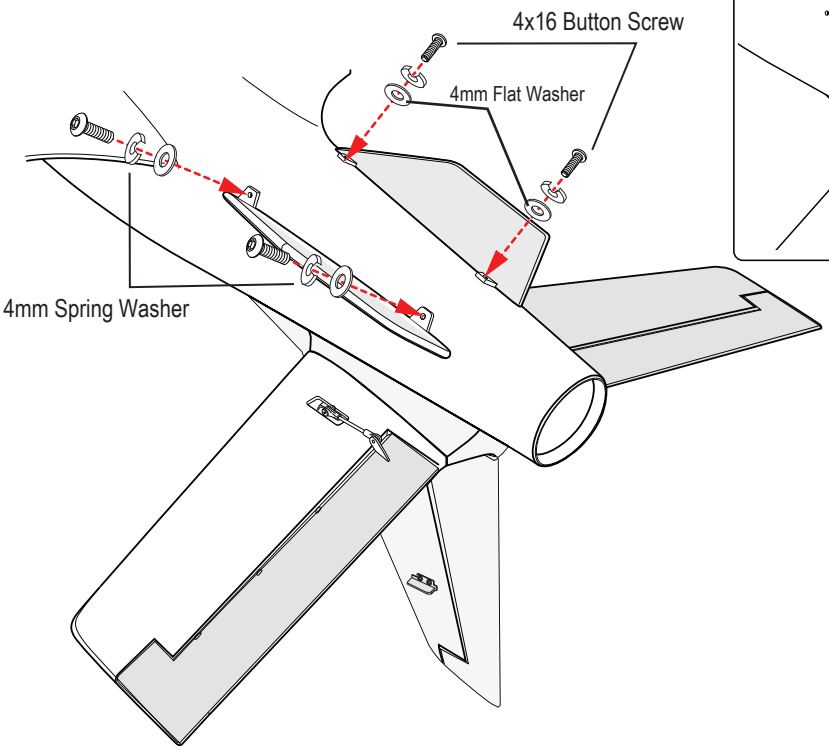


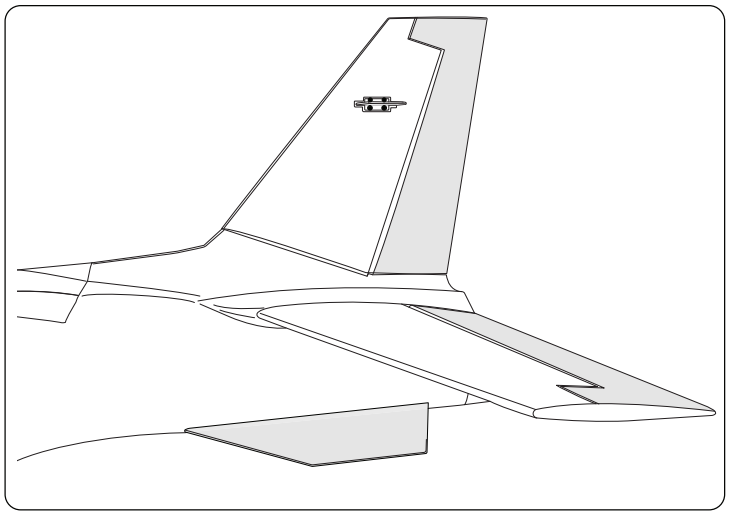
www.modellmarkt24.ch

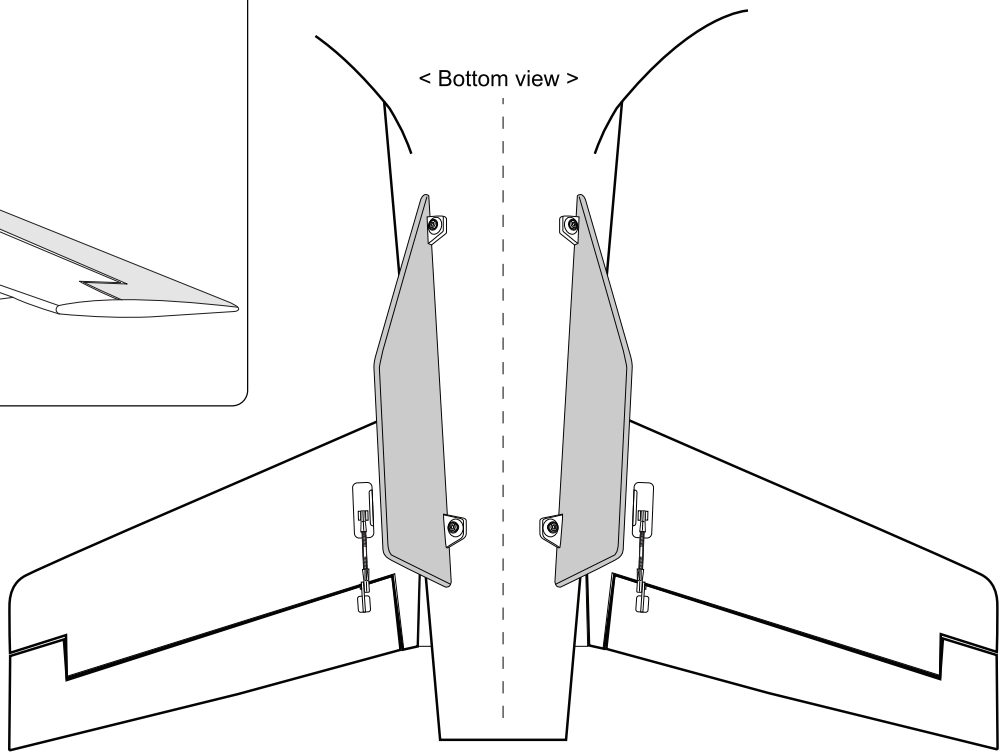
INSTALLING THE VENTRAL FIN SET







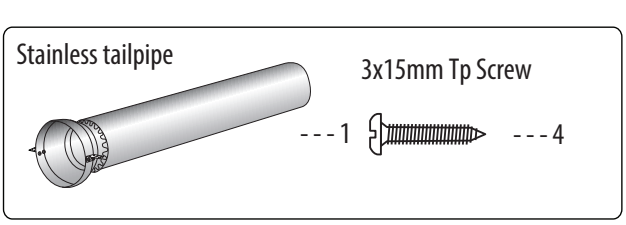


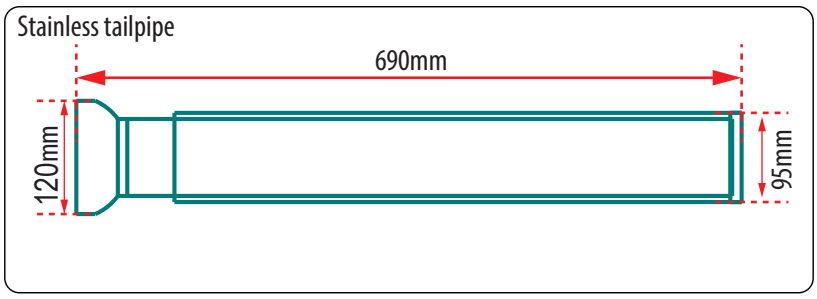


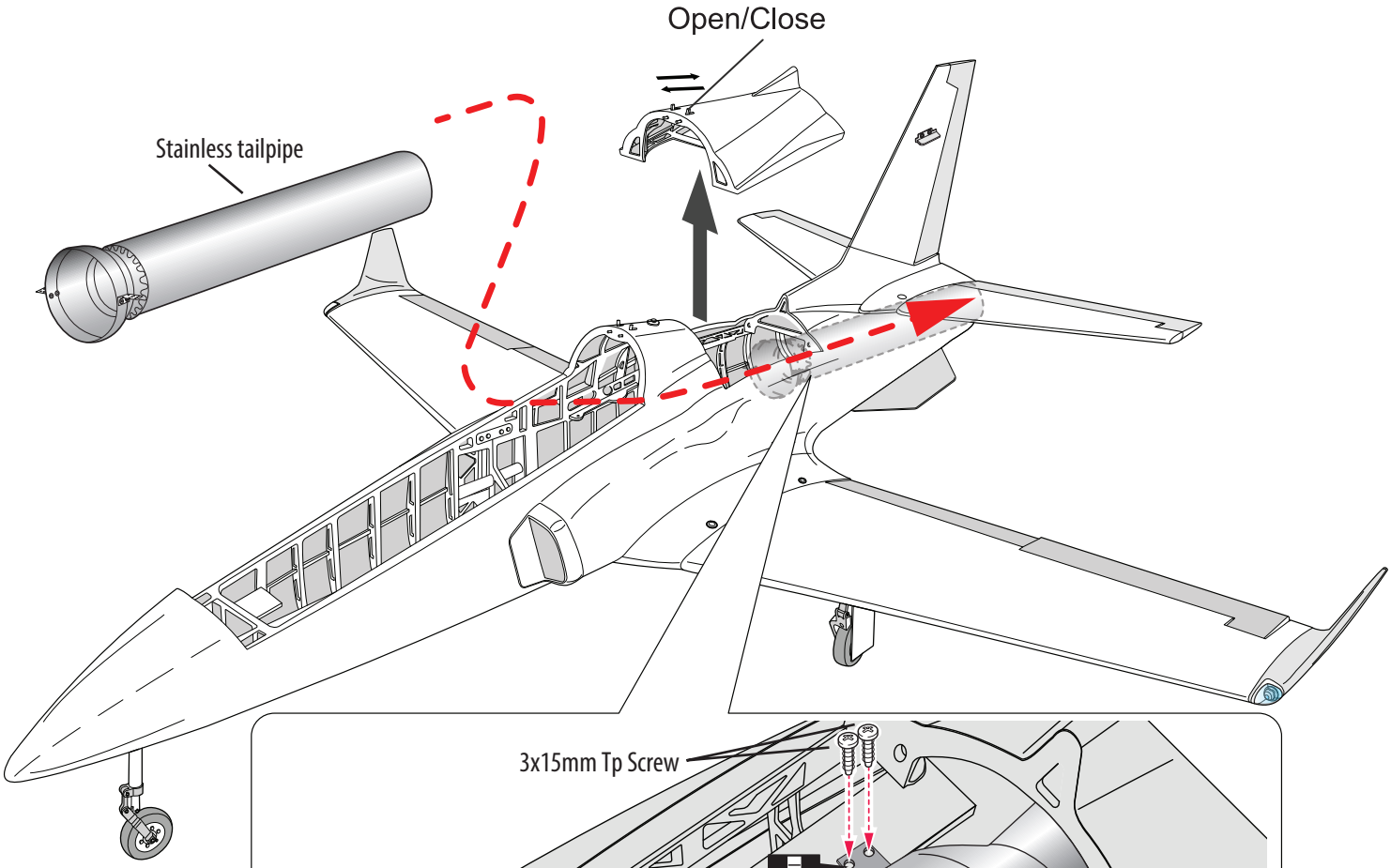
www.modellmarkt24.ch

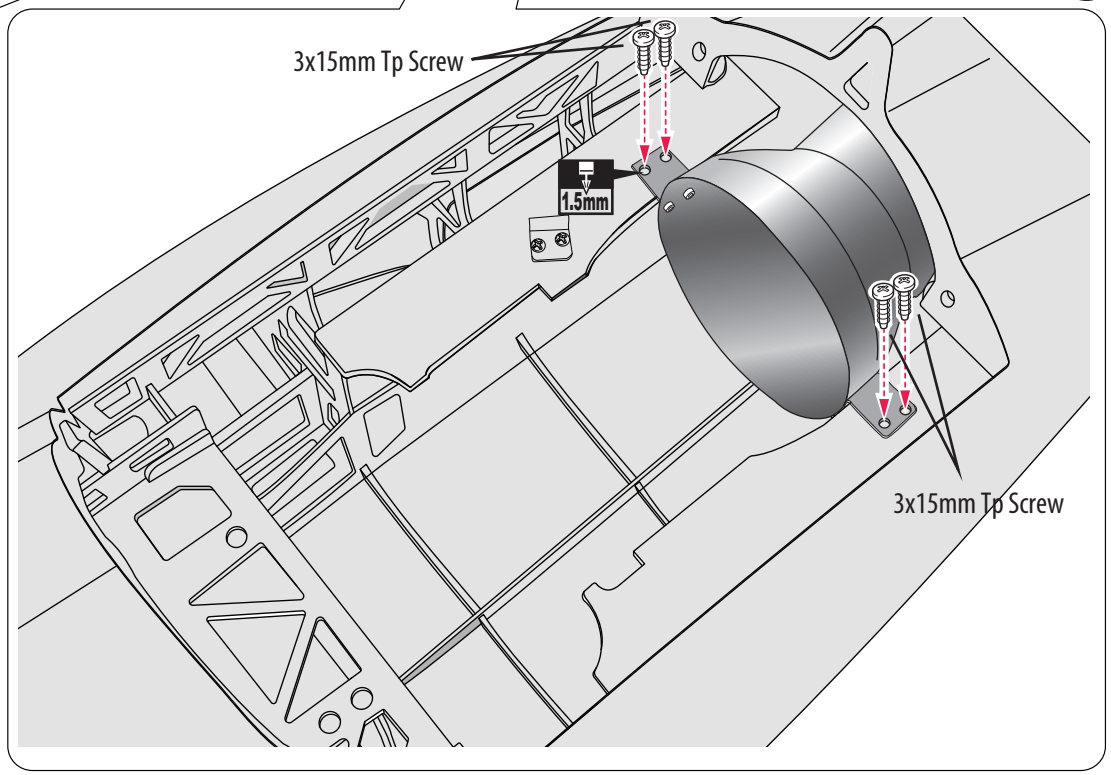
Cut off shaded portion carefully.

INSTALLING THE STAINLESS TAILPIPE





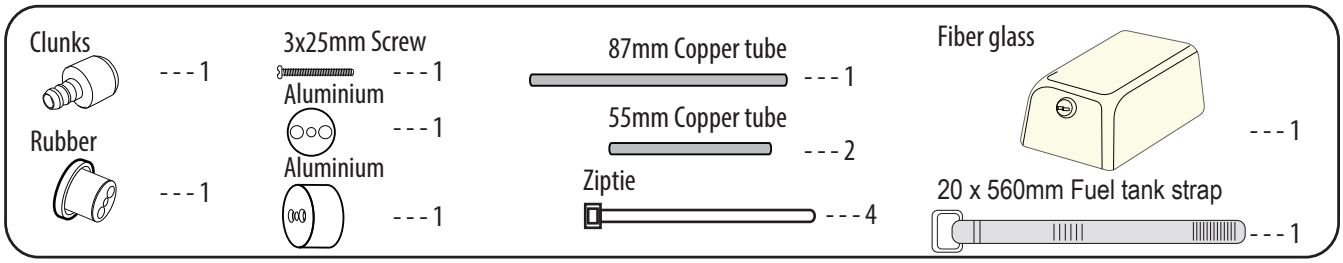




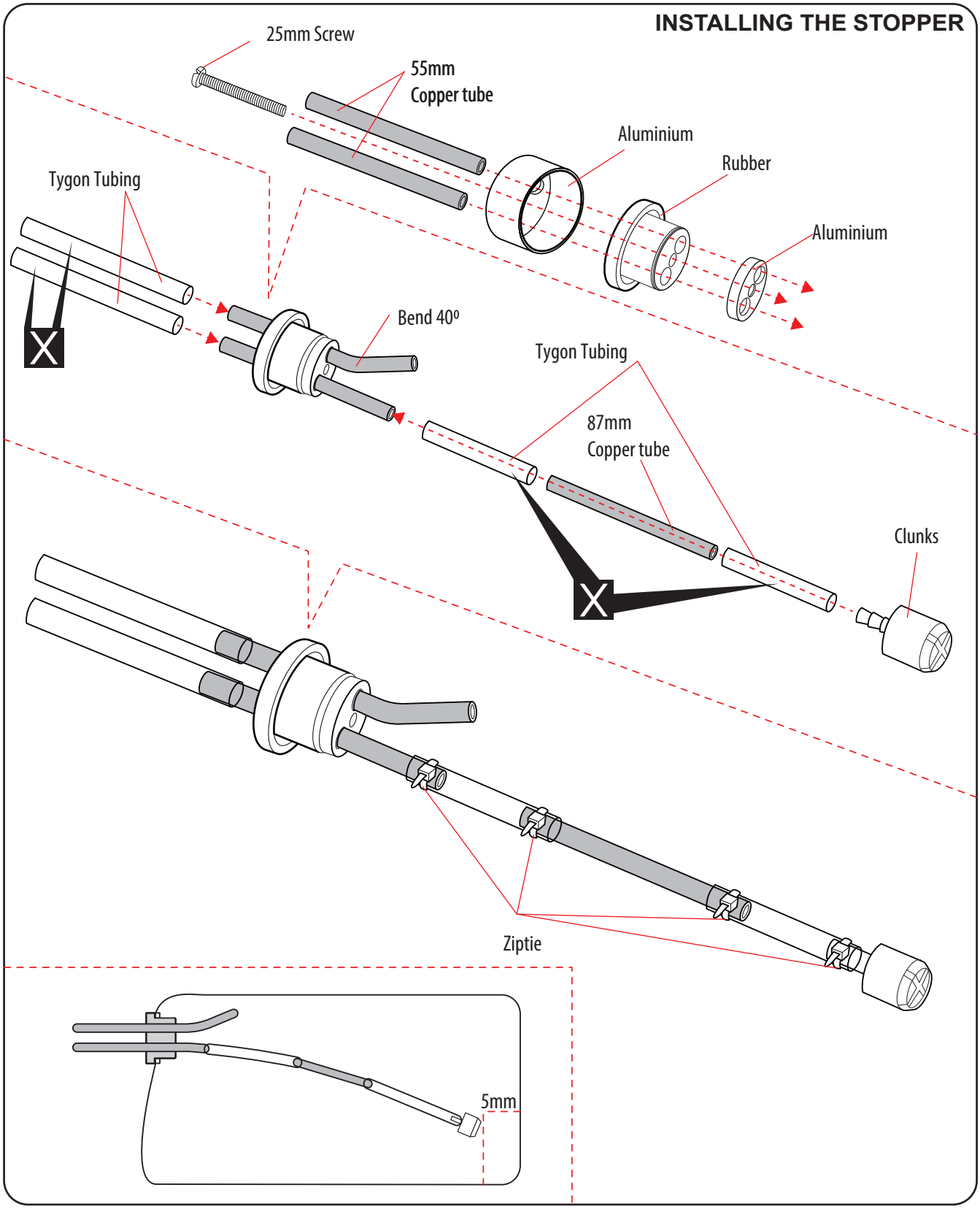
1.5mm Drill holes using the stated (in this case 1.5mm ø).

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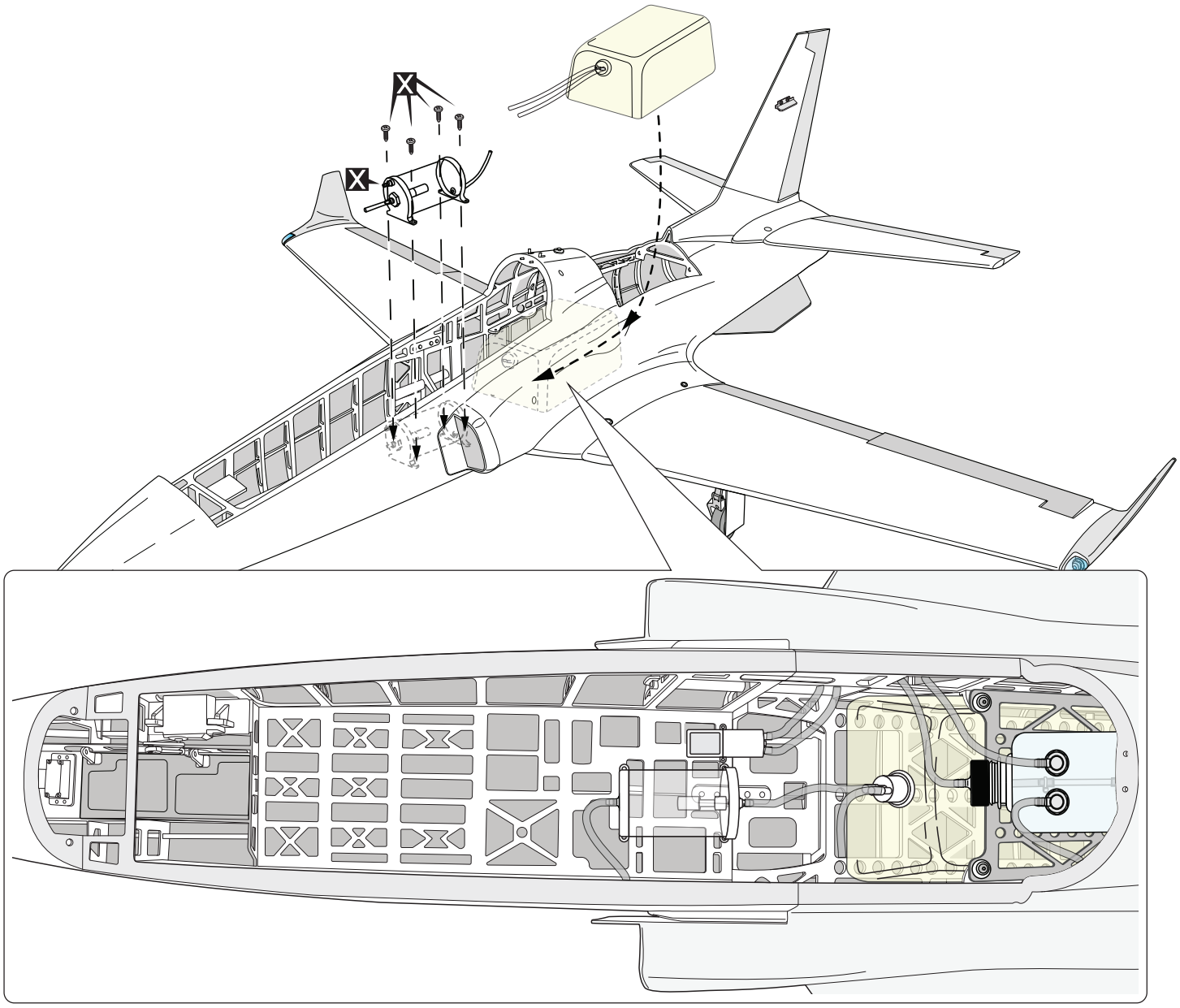
INSTALLING THE FUEL TANK



INSTALLING THE STOPPER



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Magnetic Anodized Fuel Dot

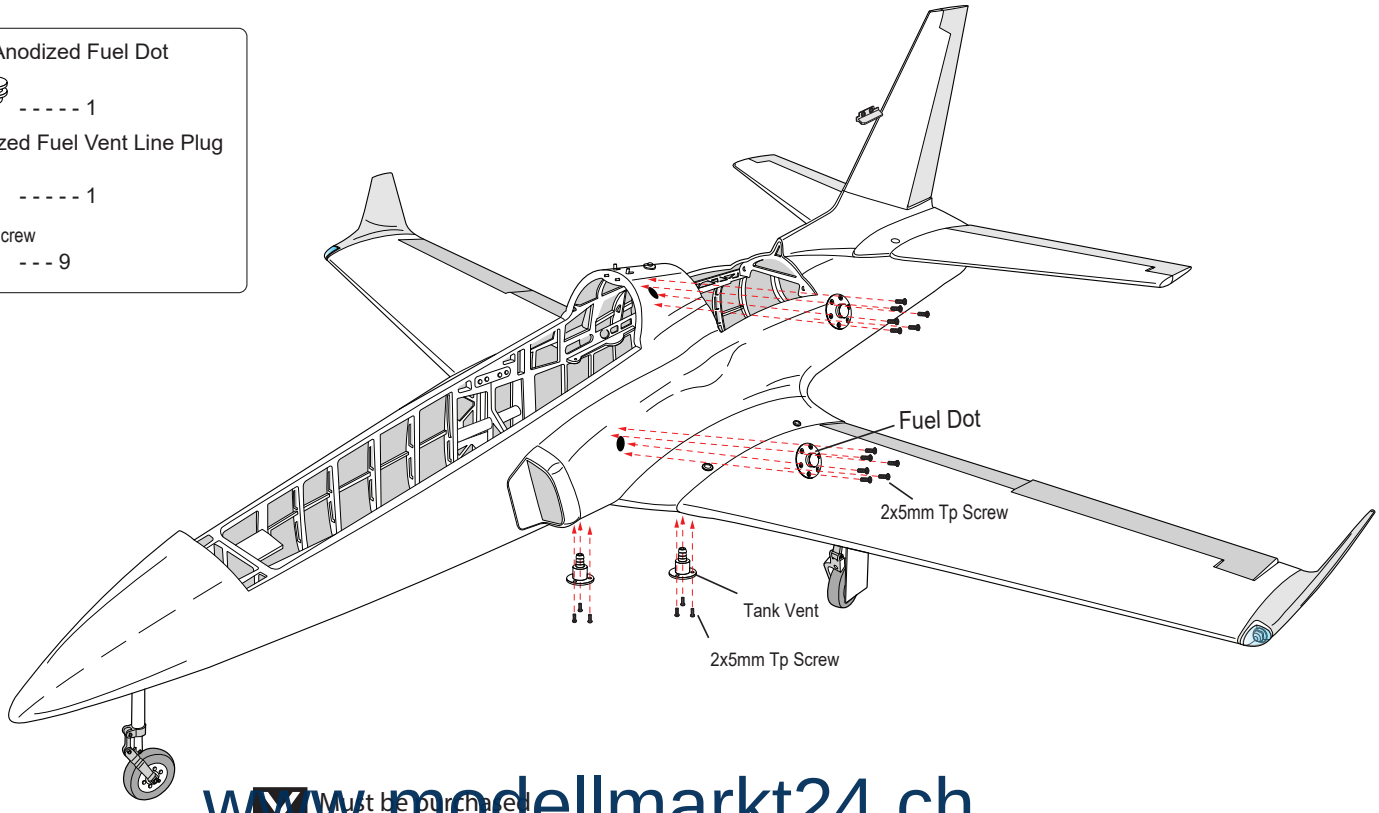
- - - - - 1

Alu. Anodized Fuel Vent Line Plug

- - - - - 1

2x5mm Tp Screw

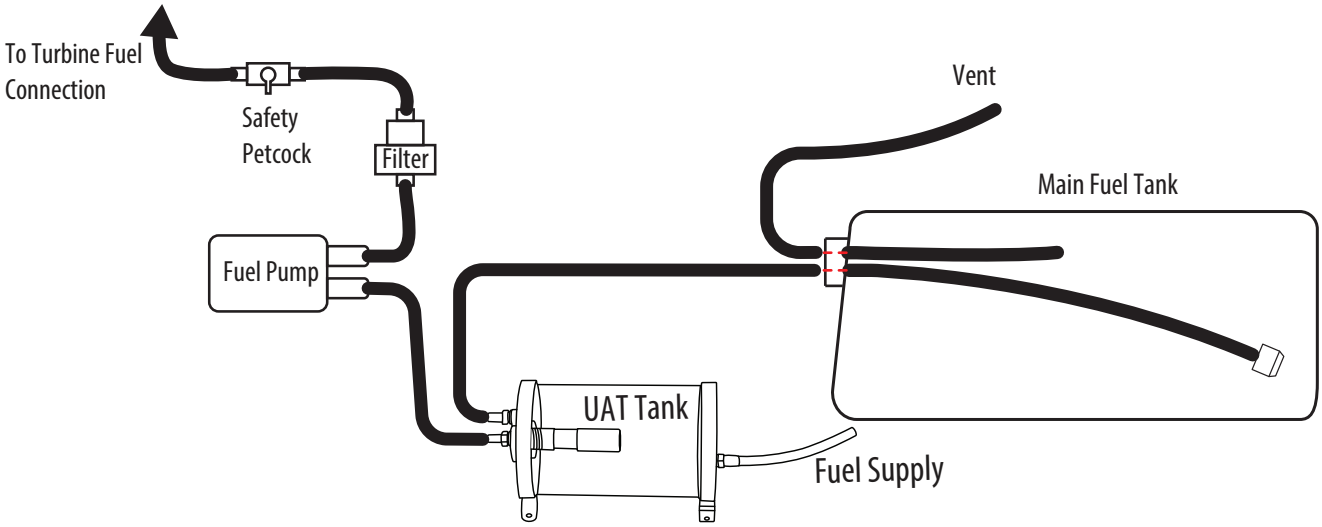
- - - 9



X Must be purchased separately!

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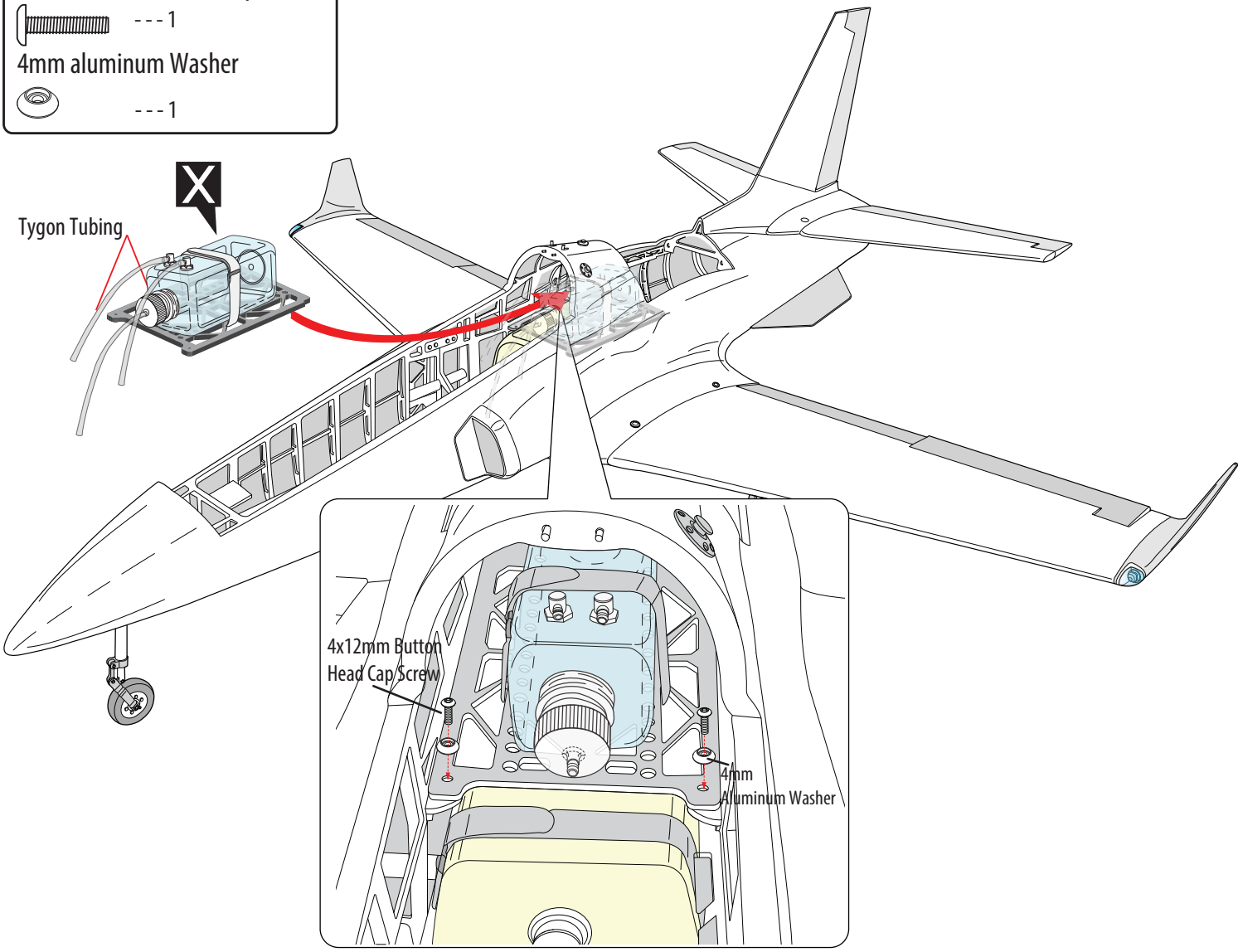
FUEL SYSTEM



INSTALLING THE SMOKE PUMP

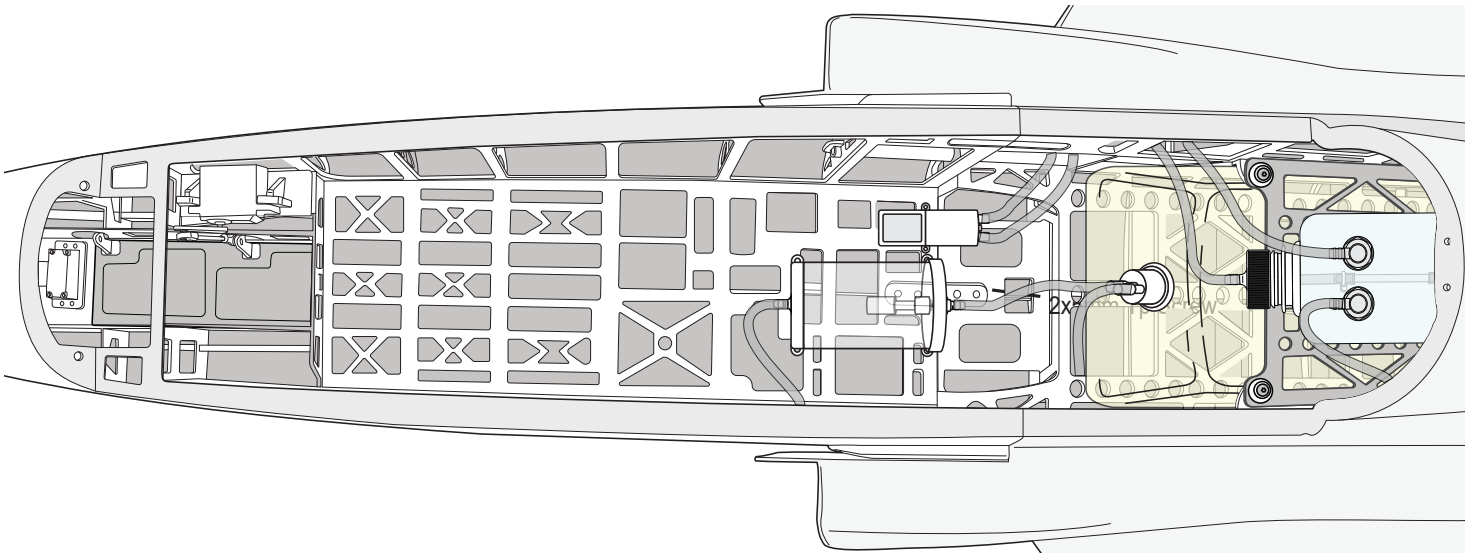
4x12mm Button Head Cap Screw --- 1

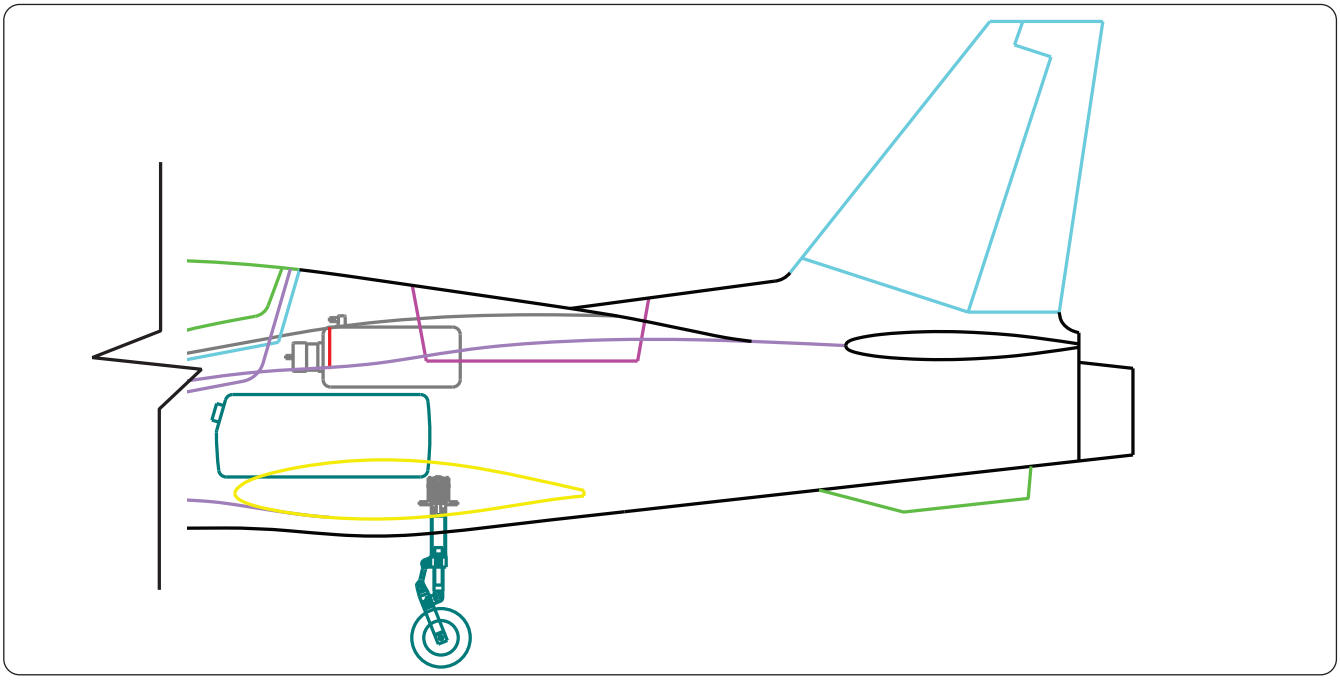
4mm aluminum Washer --- 1



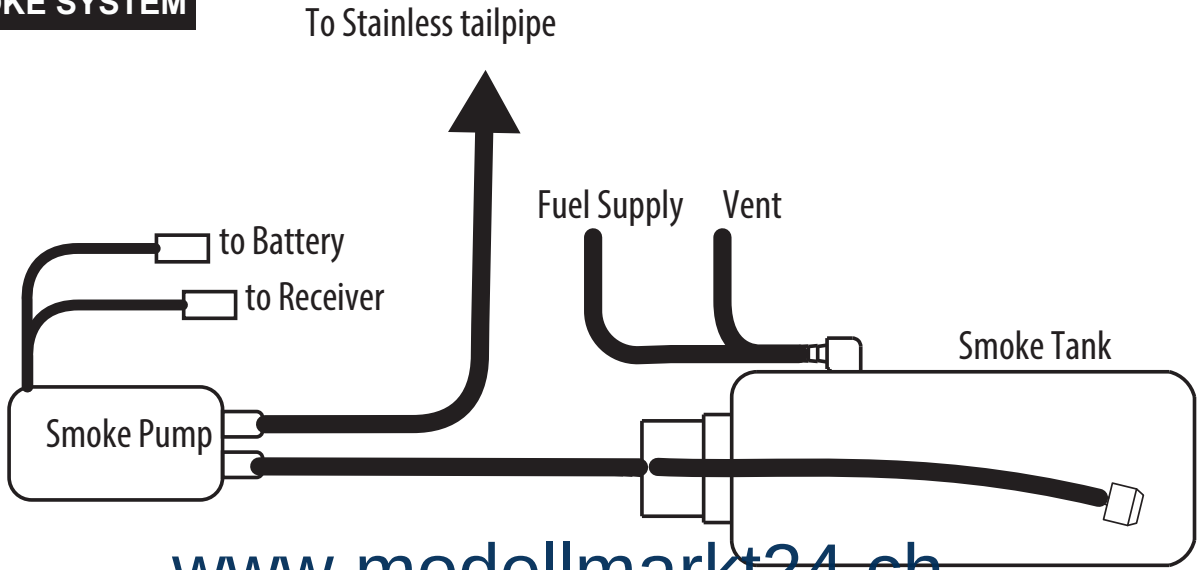
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X Must be purchased separately!





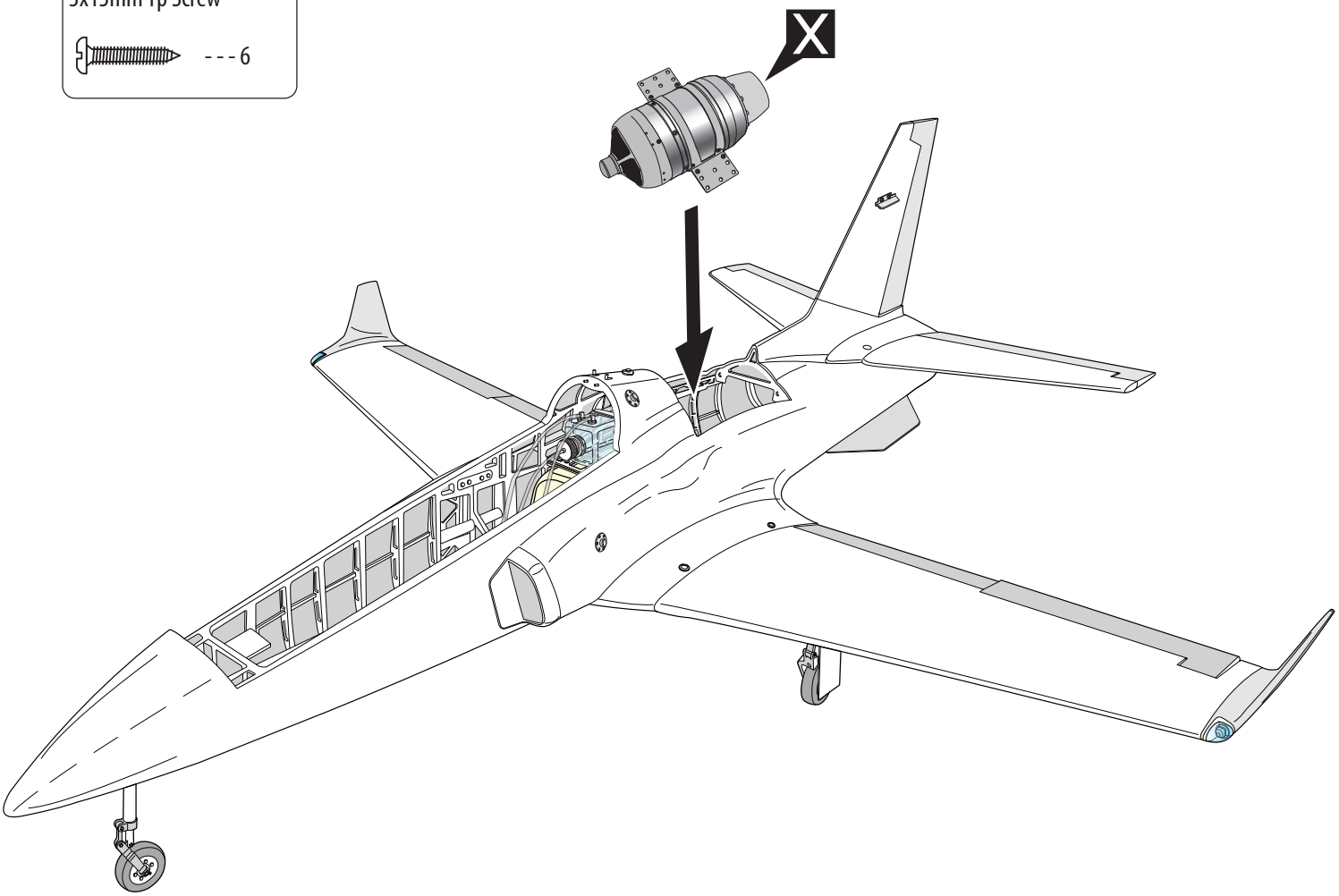
SMOKE SYSTEM

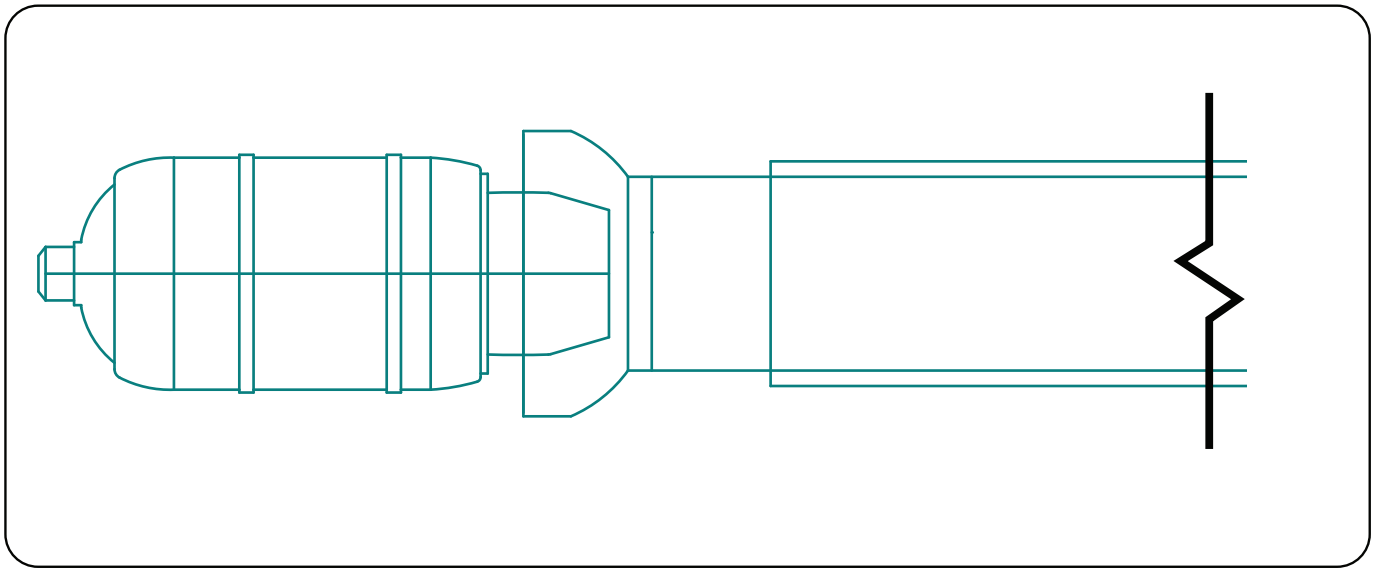


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INSTALLING THE ENGINE

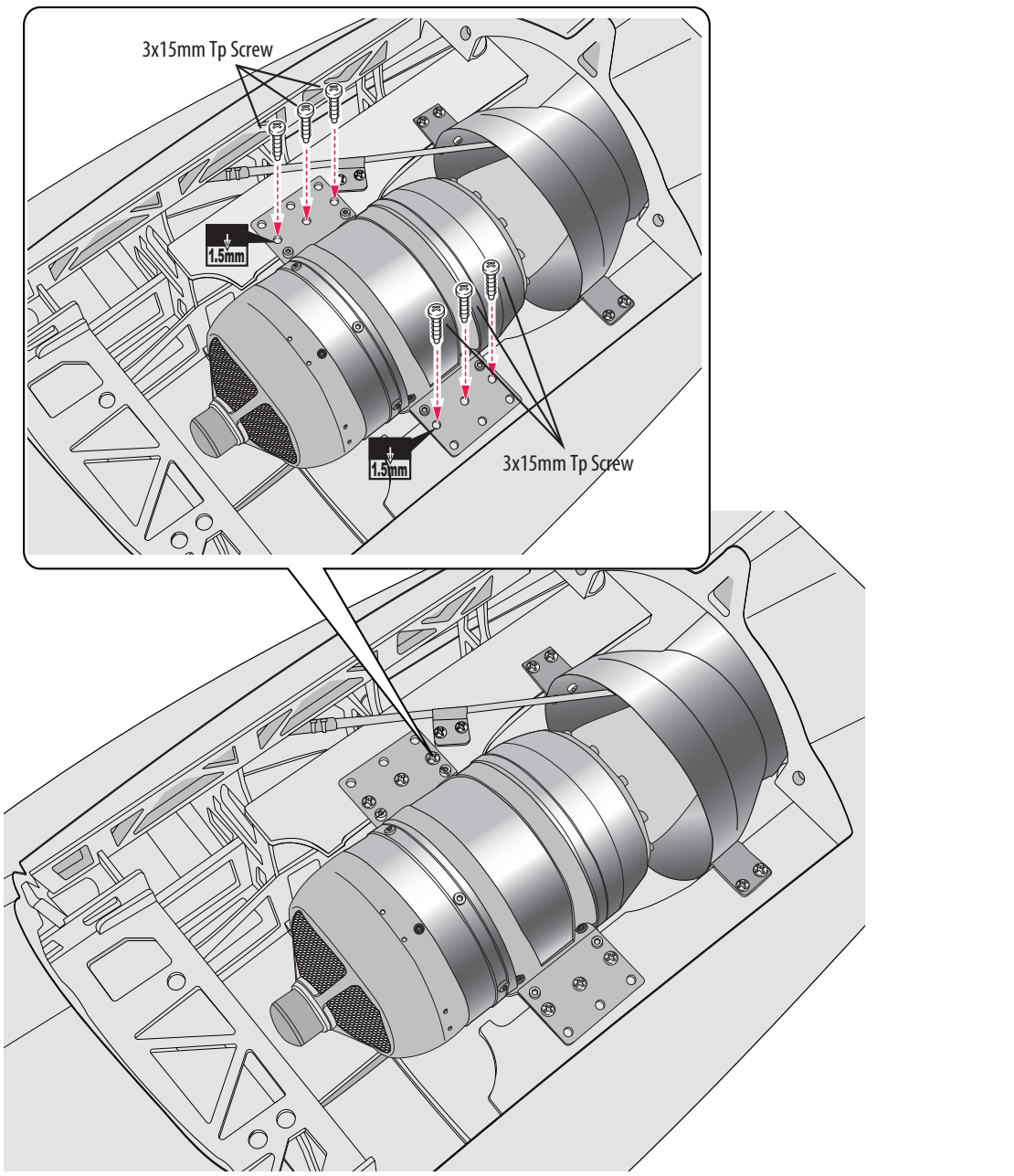
3x15mm Tp Screw --- 6

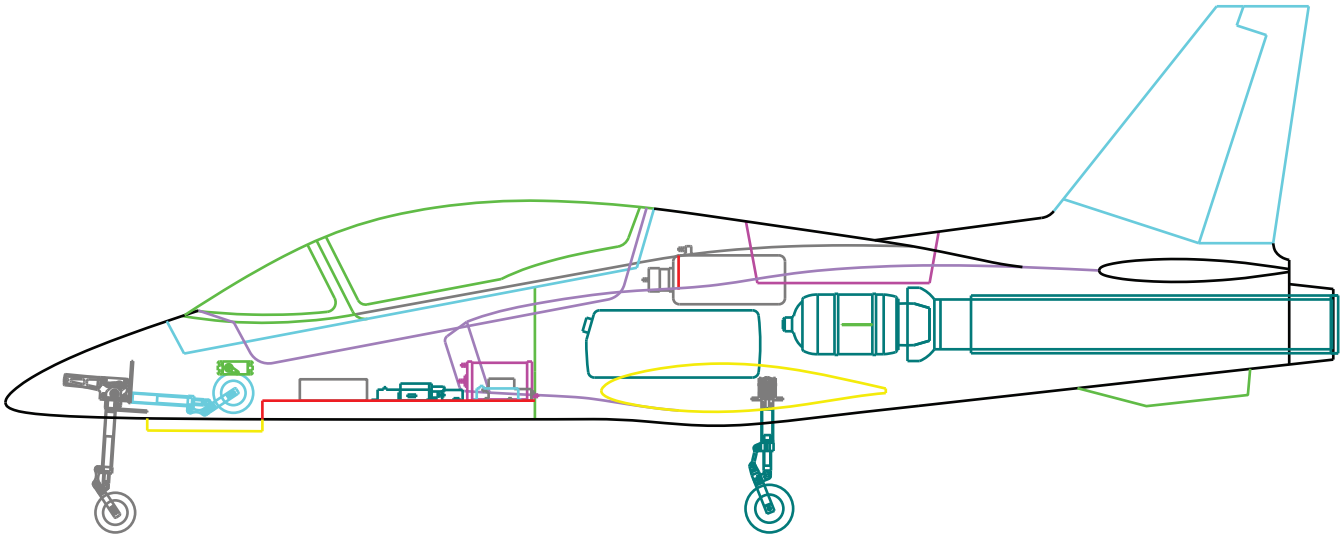




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OK Must be purchased separately!



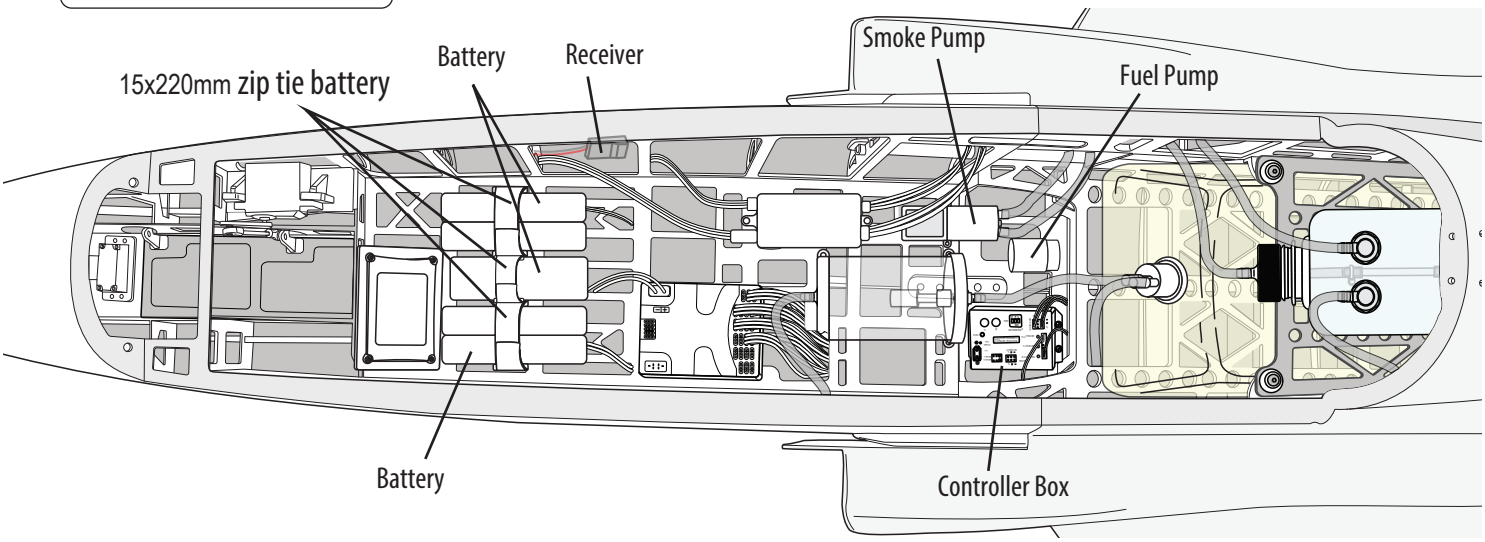


1.5mm Drill holes using the stated (in this case 1.5mm ø).

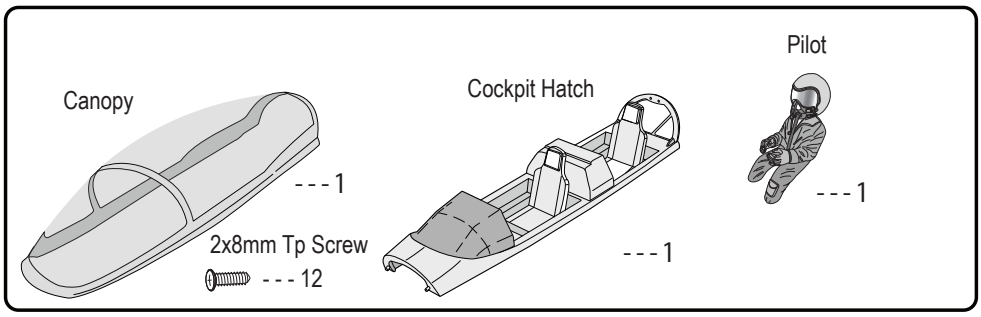
www.modellmarkt24.ch

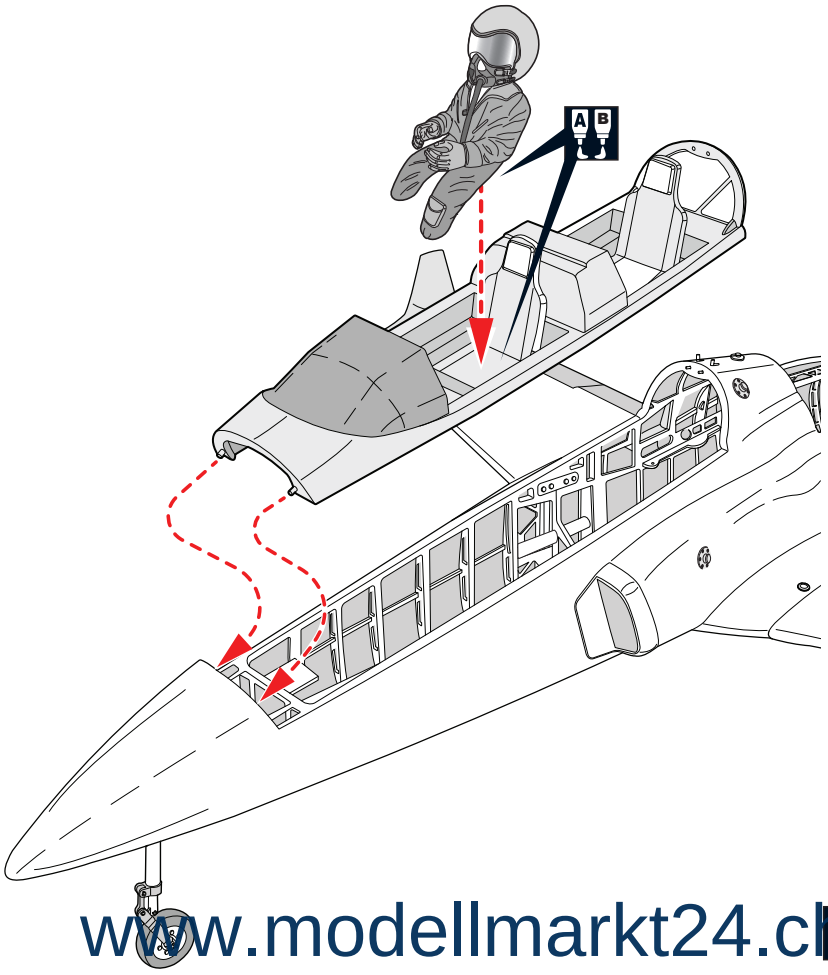
INSTALLING THE RECEIVER, BATTERY, CONTROLLER BOX AND SWITCH

15x220mm zip tie battery --- 1



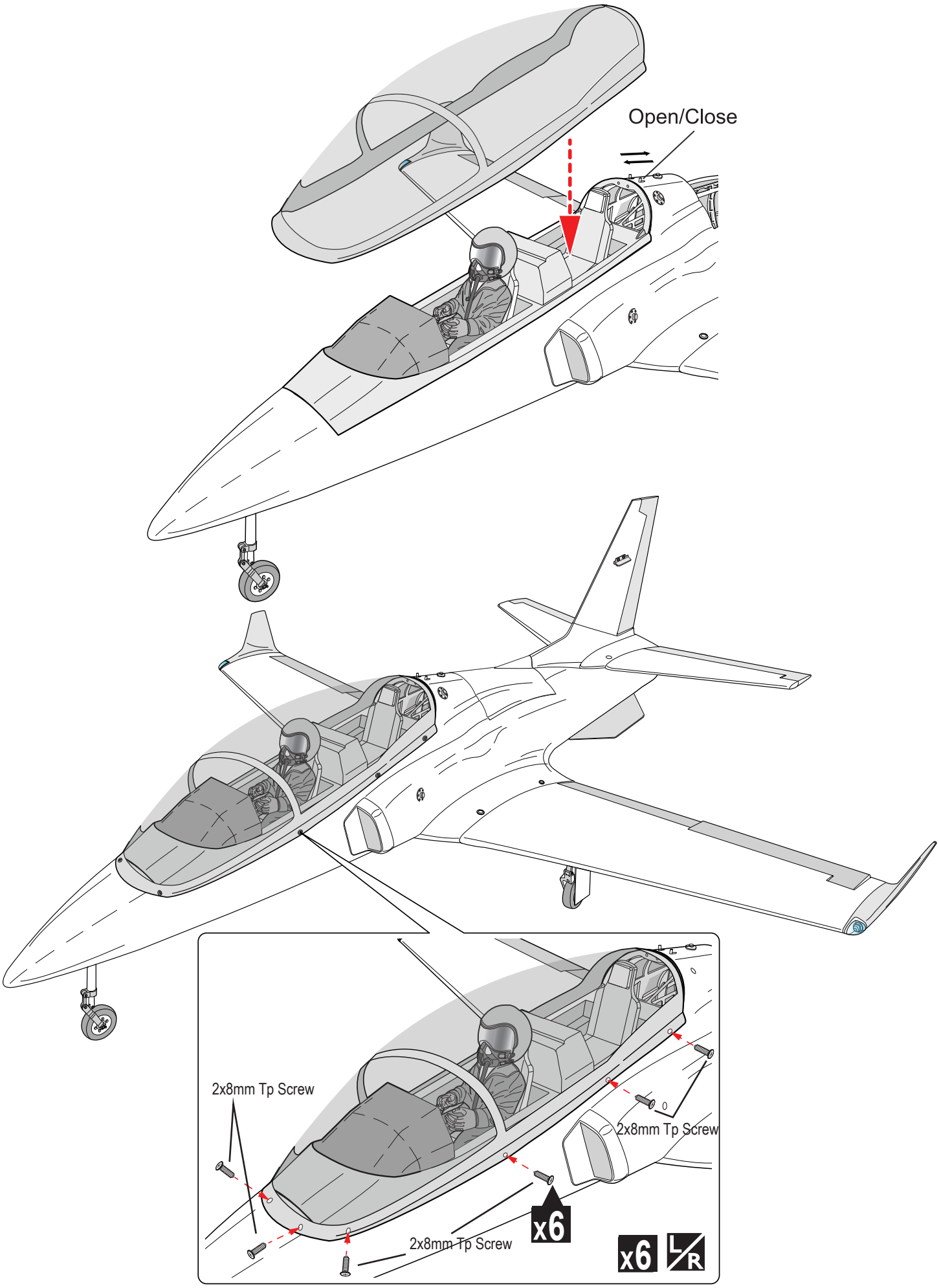
INSTALLING THE COCKPIT FUSELAGE





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A B Apply epoxy glue.



L/R Assemble left and right sides the same way.

x6 The number of times the same way Assembly (in this case twice).

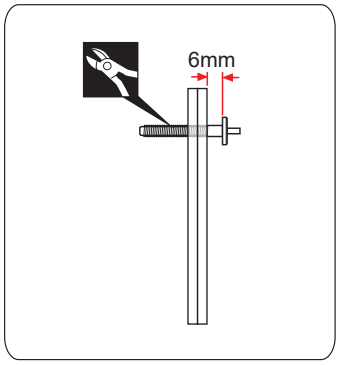
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BALANCING

1. It is critical that your airplane be balanced correctly. Improper balance will cause your plane to lose control and crash.

THE CENTER OF GRAVITY IS LOCATED 195mm (7,677in) BACK FROM THE LEADING EDGE OF THE WING, AT THE FUSELAGE. BALANCE A PLANE UPSIDE DOWN WITH THE FUEL TANK EMPTY.

2. If the nose of the plane falls, the plane is nose heavy. To correct this first move the battery pack further back in the fuselage. If this is not possible or does not correct it, stick small amounts of lead weight on the fuselage under the horizontal stabilizer. If the tail of the plane falls, the plane is tail heavy. To correct this, move the battery and receiver forward or if this is not possible, stick weight into the firewall. When balanced correctly, the airplane should sit level or slightly nose down when you lift it up with your fingers.

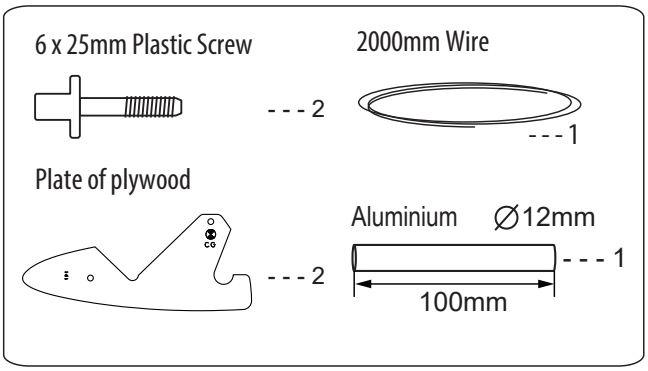


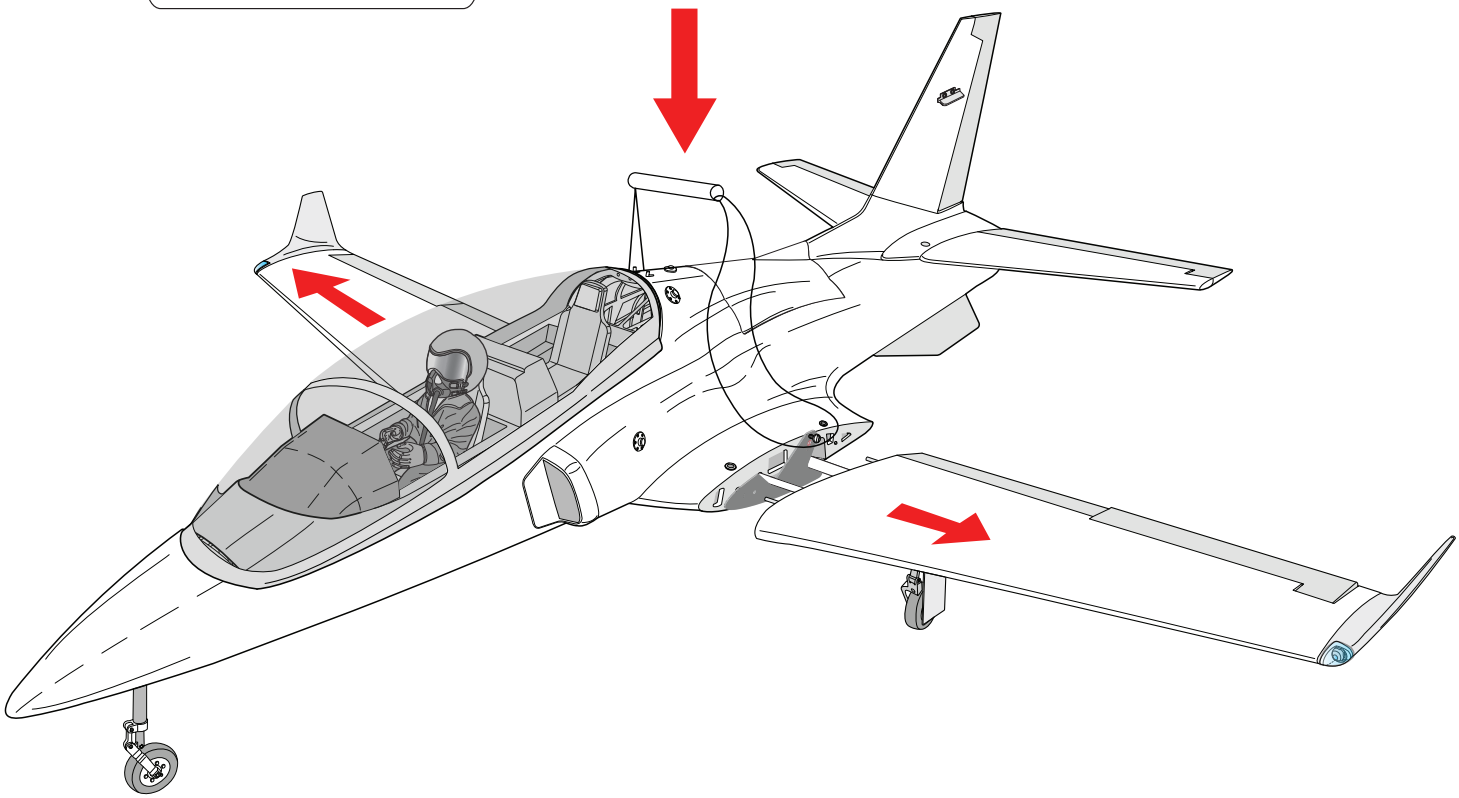
LATERAL BALANCE

After you have balanced a plane on the C.G. 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 wings level, carefully lift the airplane by the string. This may require two people to make it easier.

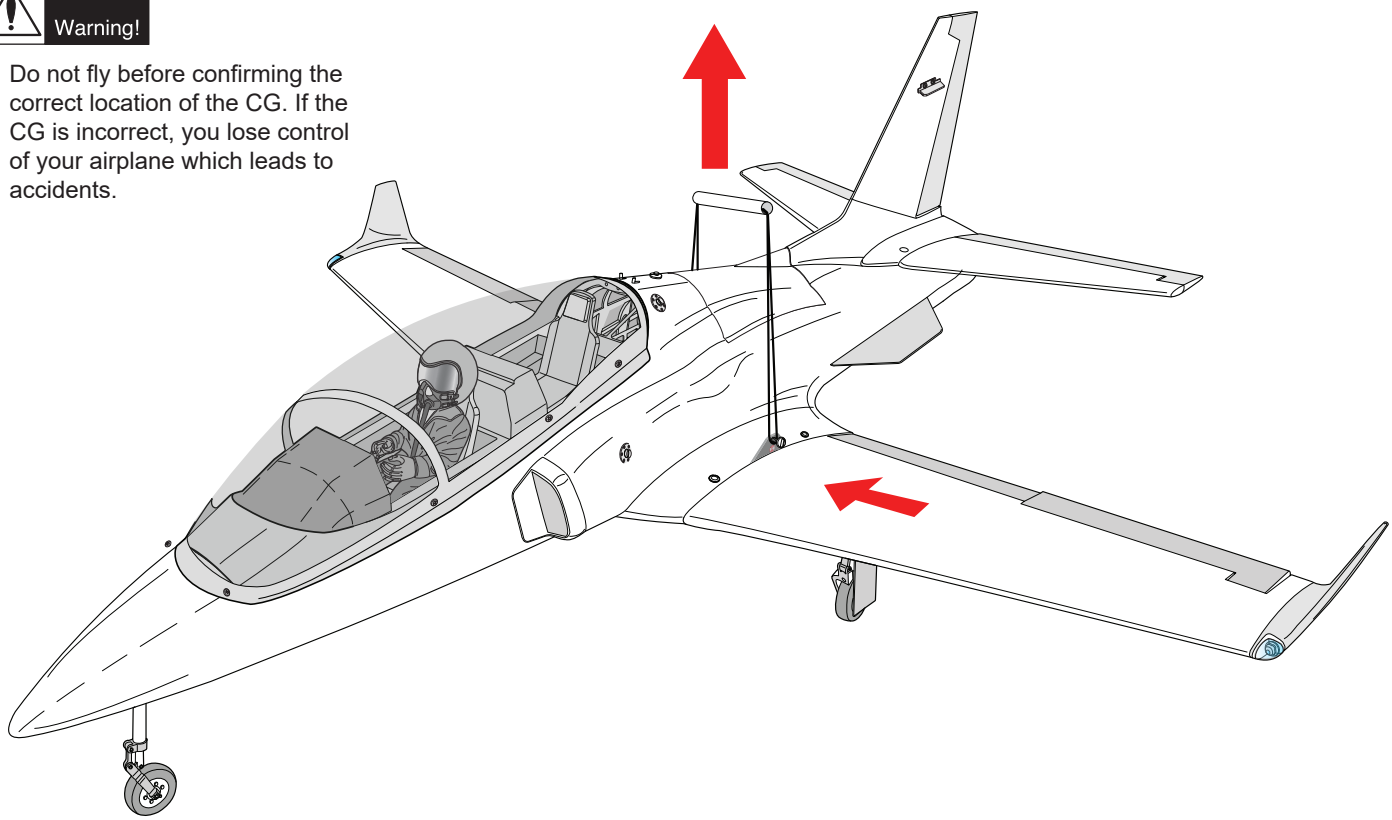
2. If one side of the wing fall, that side is heavier than the opposite. Add small amounts of lead weight to the bottom side of the lighter wing half's wing tip. Follow this procedure until the wing stays level when you lift the airplane.





Warning!

► Do not fly before confirming the correct location of the CG. If the CG is incorrect, you lose control of your airplane which leads to accidents.



CONTROL THROWS

1. We highly recommend setting up a plane using the control throws listed.
2. The control throws should be measured at the widest point of each control surface.
3. Check to be sure the control surfaces move in the correct directions.

- **LOW RATE**

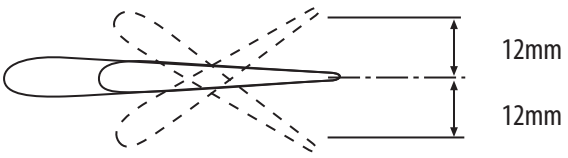
Ailerons	12mm up	12mm down
Elevator	10mm up	10mm down
Rudder	35mm right	35mm left
Flap	25mm down for take off	

- **HIGH RATE**

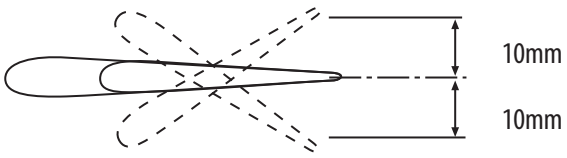
Ailerons	15mm up	15mm down
Elevator	14mm up	14mm down
Rudder	50mm right	50mm left
Flap	Landing: 40mm down	

FLIGHT PREPARATION PRE FLIGHT CHECK

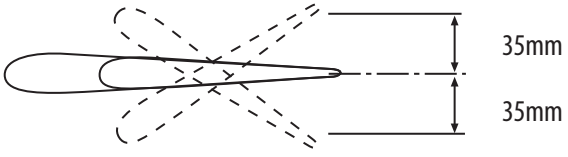
1. Completely charge your transmitter and receiver batteries before your first day of flying.
2. Check every bolt and every glue joint in your plane to ensure that everything is tight and well bonded.
3. Double check the balance of the airplane
4. Check the control surface
5. Check the receiver antenna . It should be fully extended and not coiled up inside the fuselage.
6. Properly balance the propeller.



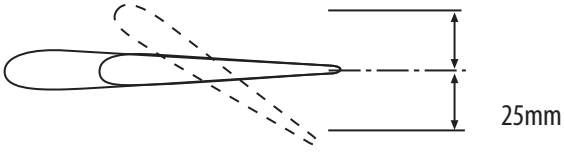
Aileron Control



Elevator Control

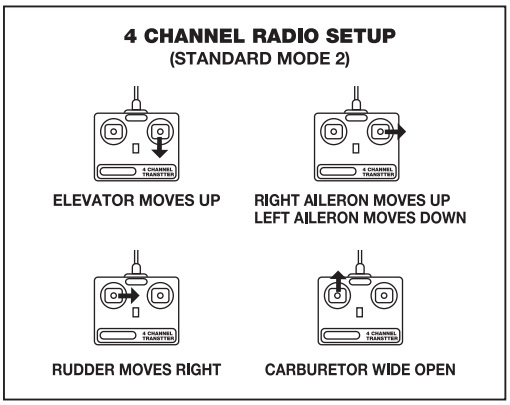


Rudder Control



Flap Control

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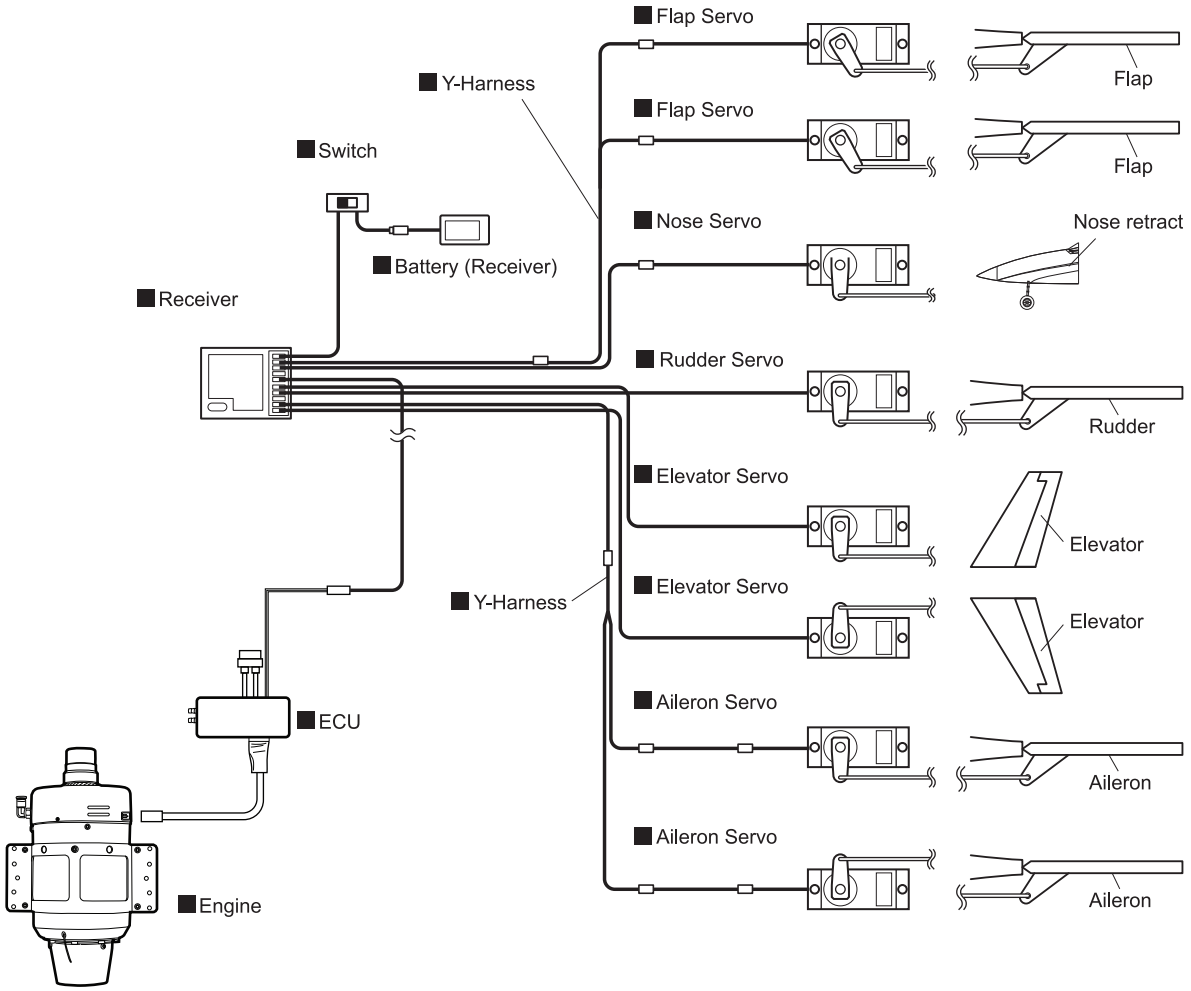
FLIGHT PREPARATION PRE FLIGHT CHECK

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FOR YOUR RADIO INSTALLATION
BASIC CONNECTION FOR AIRPLANE AND ADJUSTMENT OF SERVOS

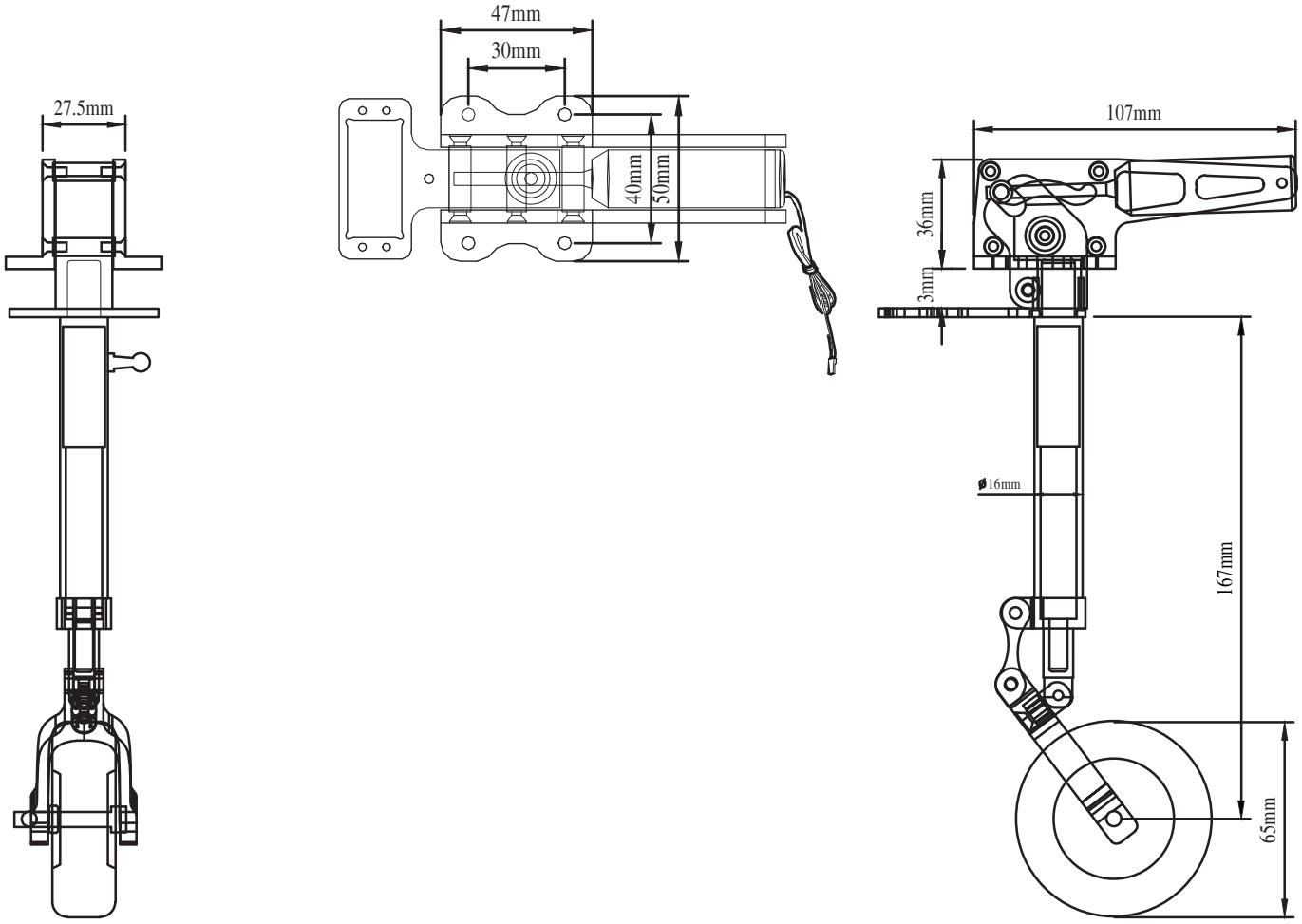
Example of connection

- For more information, refer to radio system instruction manual.
- Follow instruction manual of Engine and Battery.

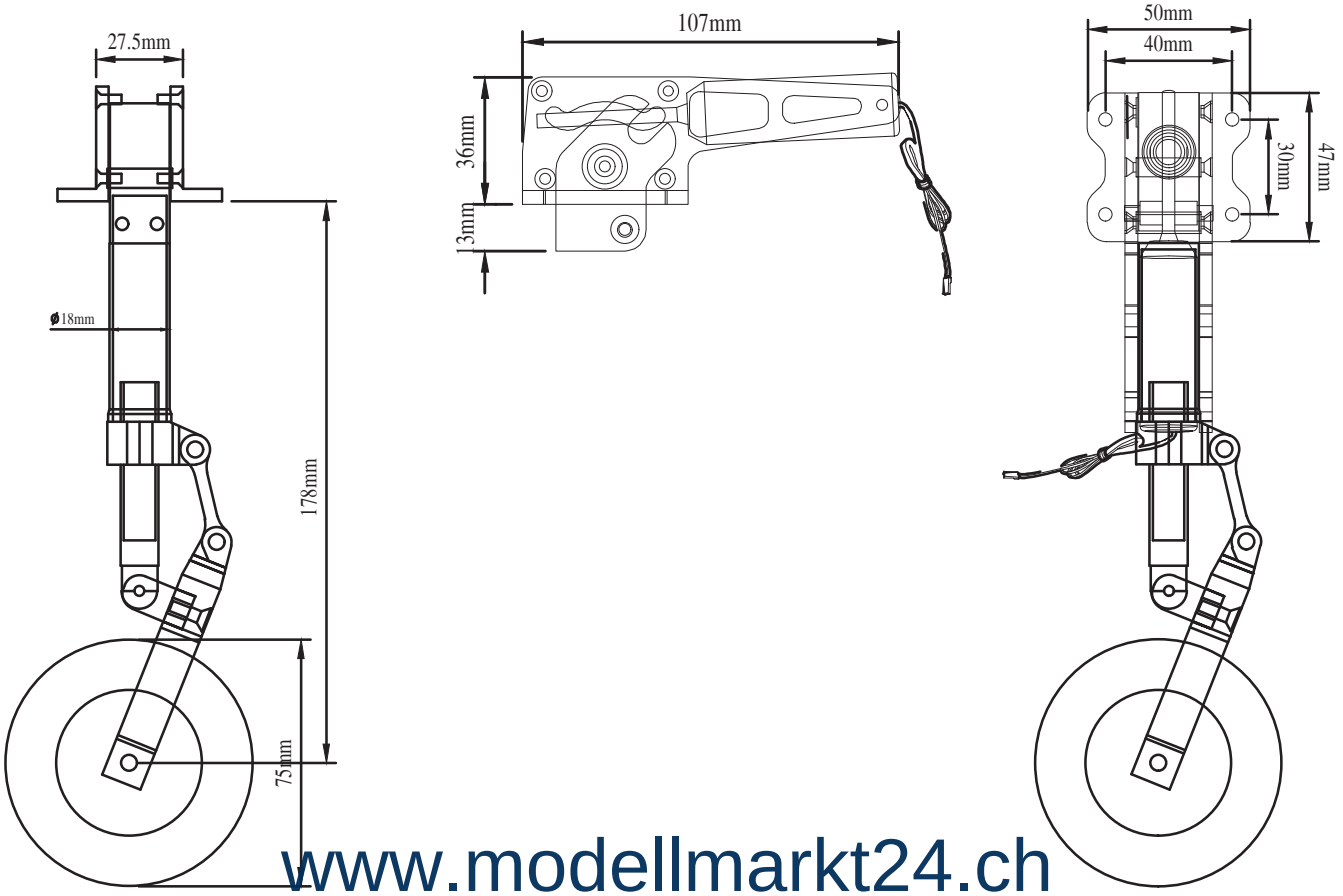


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NOSE GEAR DIMENSIONAL DETAIL

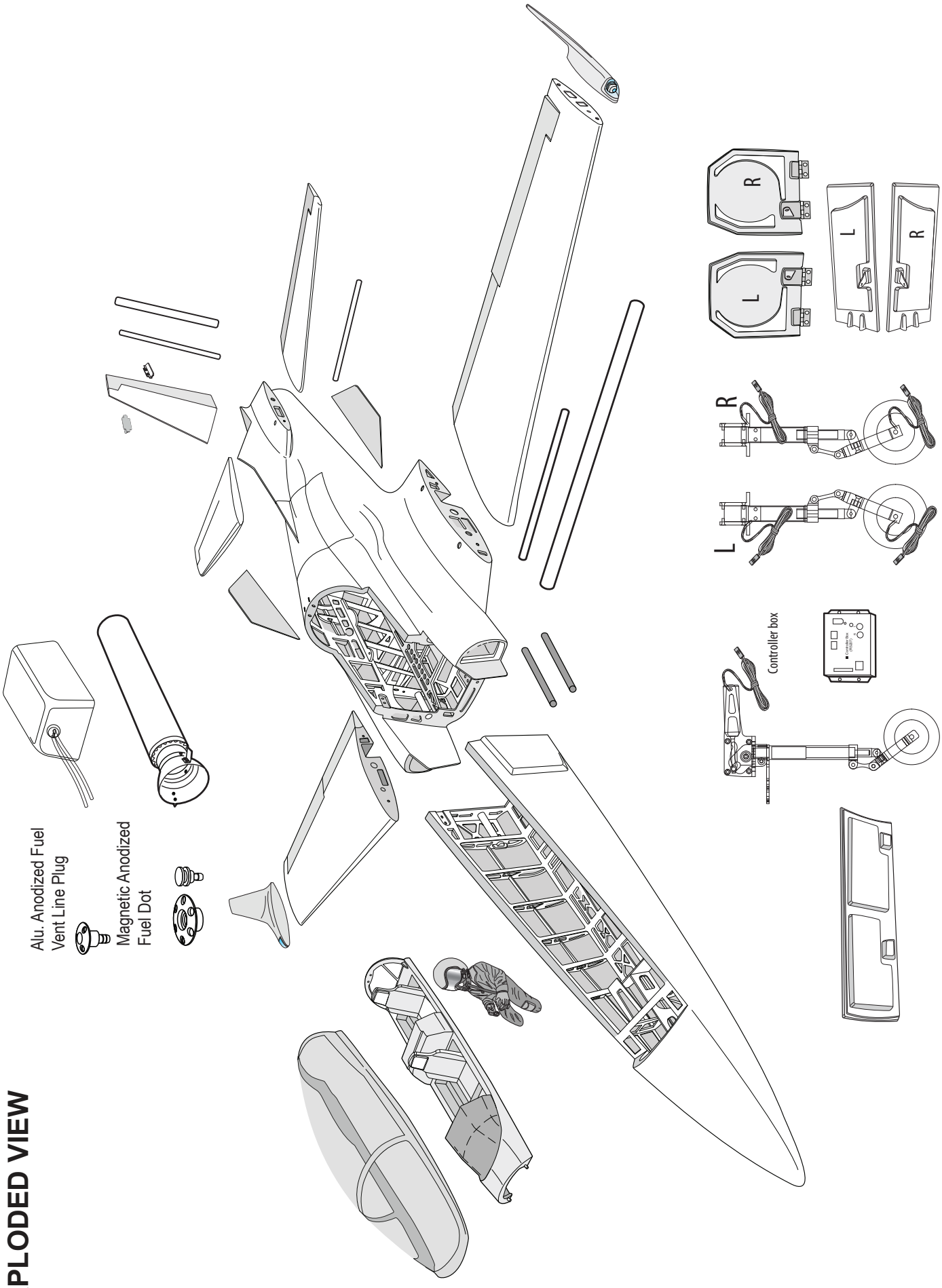


MAIN GEAR DIMENSIONAL DETAIL



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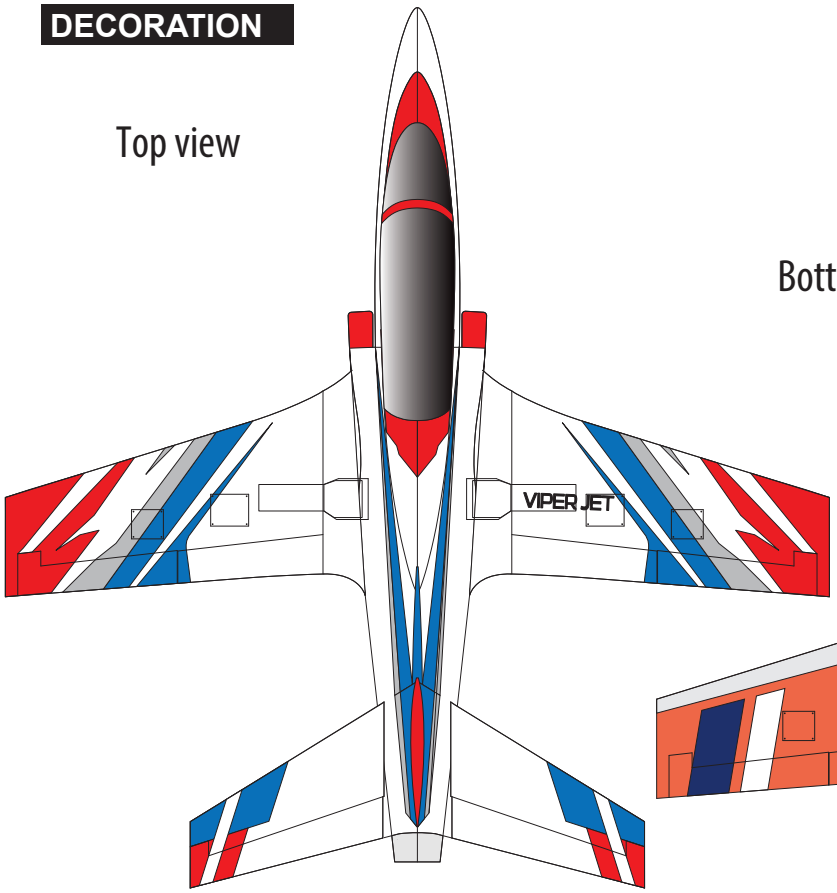
EXPLODED VIEW



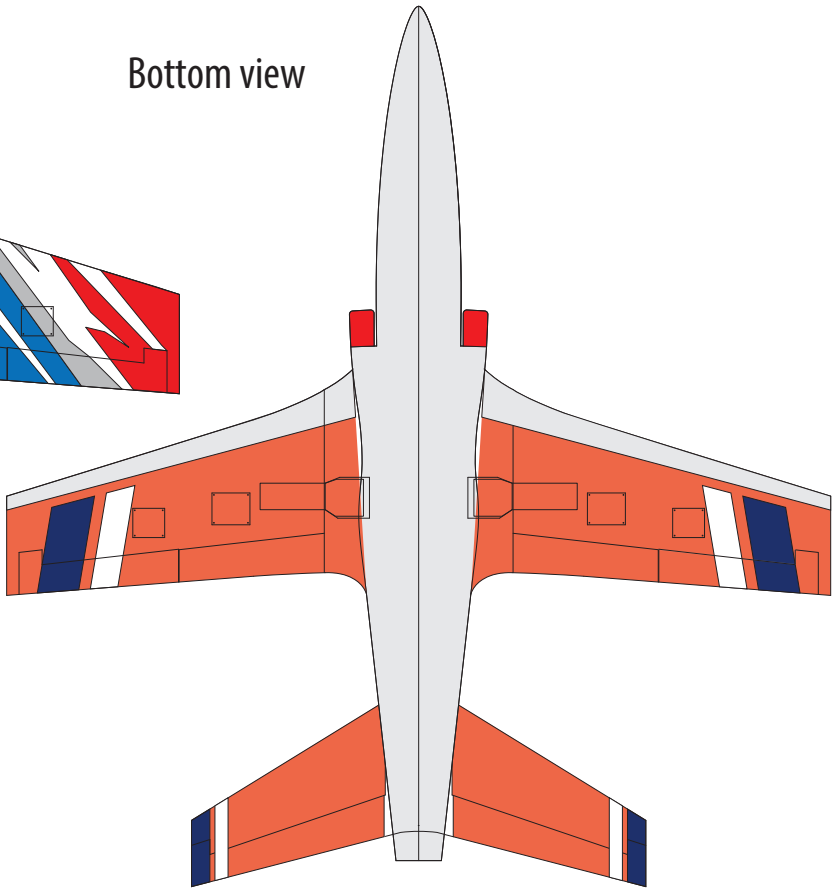
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DECORATION

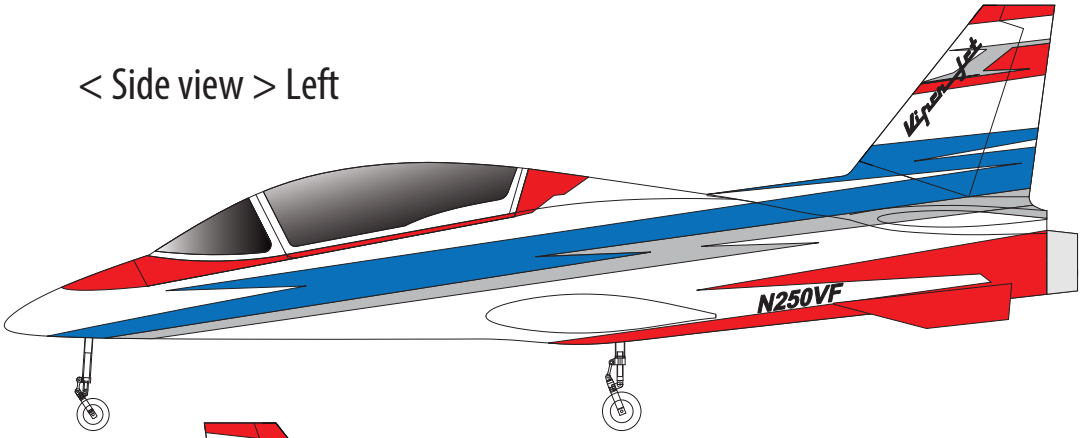
Top view



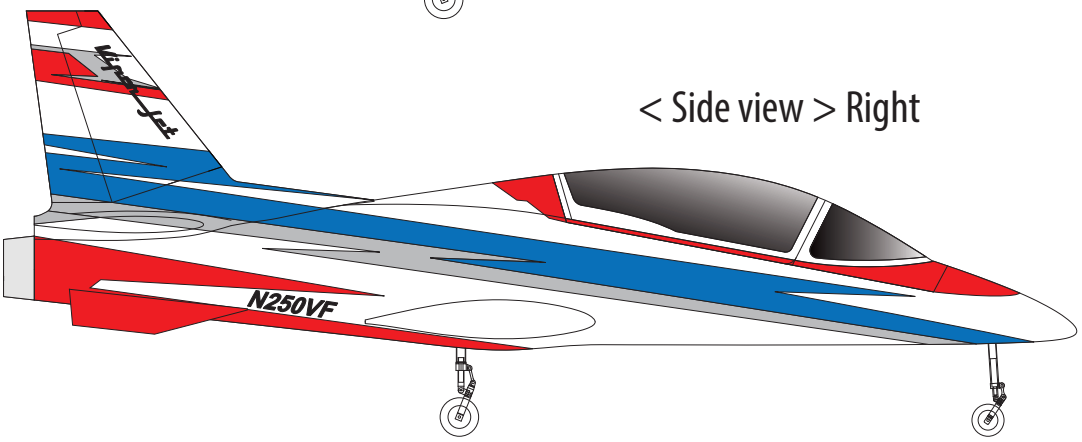
Bottom view



< Side view > Left

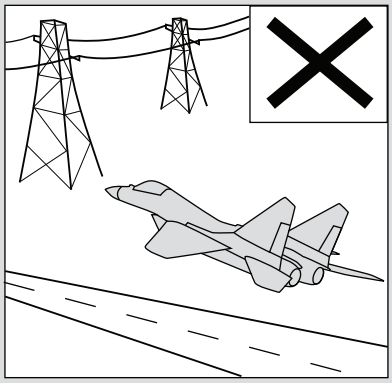


< Side view > Right

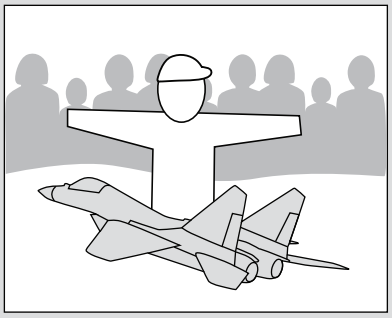


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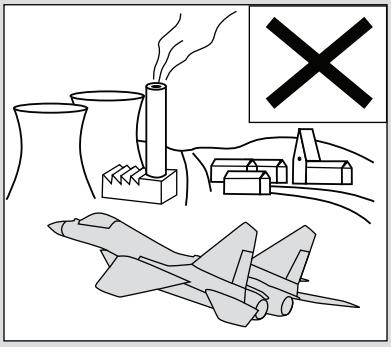
I/C FLINGT WARNINGS



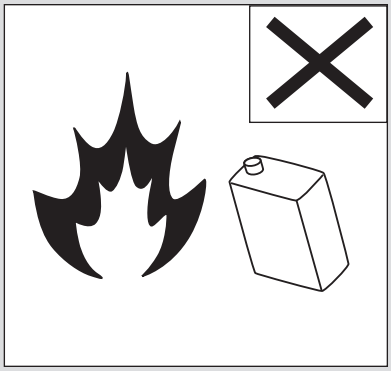
NEVER fly near power lines, aerials or other dangerous areas including airports, motorways etc.



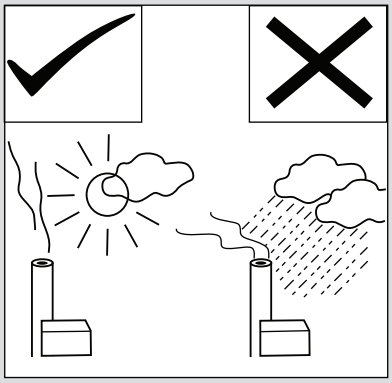
Keep all onlookers (especially small children and animals) well back from the area of operation. This is a flying aircraft, which will cause serious injury in case of impact with a person or animal.



Always operate in open areas, away from factories, hospitals, schools, buildings and houses etc. **NEVER** fly your aircraft close to people or built up areas.



DO NOT dispose of empty fuel containers on a fire, this can lead to an explosion.



NEVER fly in wet conditions or on windy or stormy days.

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