Read through this manual carefully before you begin building and follow it during construction.

BOOMERANG TORUS
ARF KIT.

Aerobatic Sport Jet for 20 to 34 lbs (P80 to P160) thrust turbines.

Specifications:
Span... 83" (2209mm.)
Span with Wingtip Tanks 90" (2286mm.)
Length...87" (2108mm.)
Weight 29 Lbs.(13.15 Kilo)
Radio Required 6 to 11 channels.
Servos.. 9 to 11, from 5 to 12 kilo torque.

Designer Alan Cardash
Boomerang RC Jets, LLC.
Website:www.Boomerang-RC-Jets.com

Safety Precautions

The Torus turbine model is designed for experienced modellers. This model is not recommended for beginners to R/C flying and should not be attempted by those with insufficient building and flying experience. This manual is for guidance only. If you are unsure of any model building techniques, seek help from an experienced model builder or contact Boomerang RC Jets, LLC. for assistance. Jet models are dangerous if construction is carelessly or incorrectly carried out. As the building assembly of this kit is out of our control after point of sale, no liability is accepted by Boomerang RC Jets, LLC. for any accident or loss, however caused. Purchase of this kit implies acceptance of these conditions by the purchaser. To decline these terms, return the unused kit to your supplier for full refund.

Note the Symbols used throughout these instructions.

Assemble left and right sides the same way.

Not supplied

Drill holes to the specified diameter (here: 2mm. shown).

Cut off shaded portion.

Apply epoxy glue.

Pay close attention here!

Ensure smooth non-binding movement while assembling.

Apply instant glue (CA glue, super glue).

Warning! Do not overlook this symbol!

1 Wings

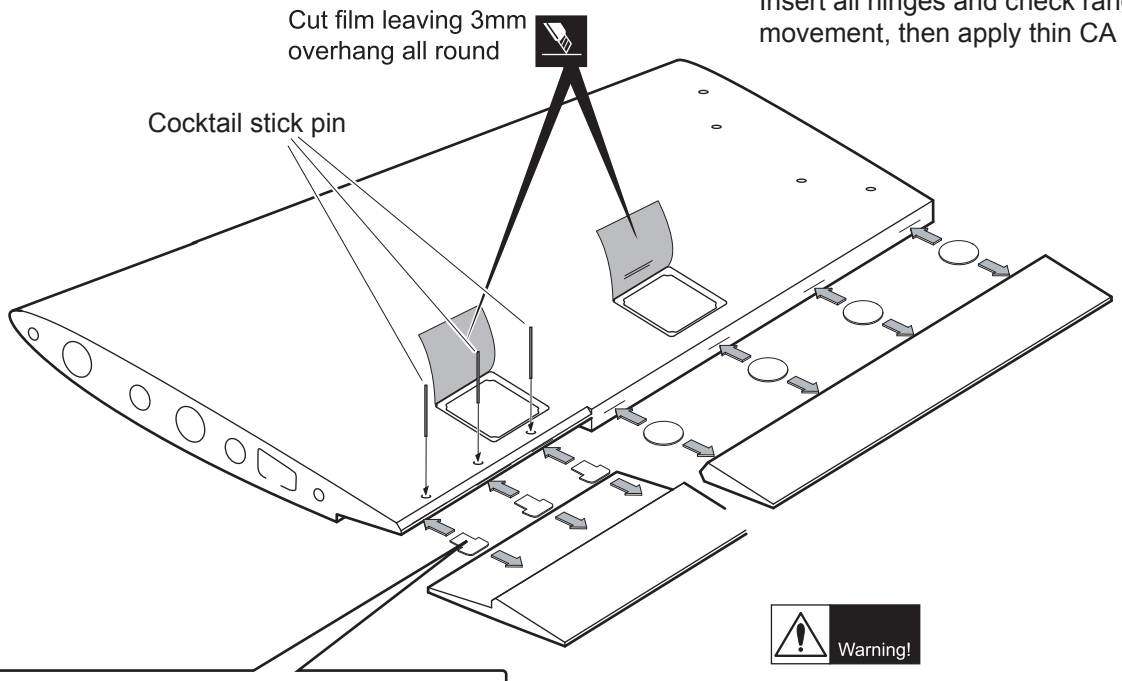
Assemble left and right sides the same way.

NOTES ON HORN POSITIONS

Mount the horns so the clevis holes are 1/4" (6mm) behind the hinge line for the ailerons to give differential and on the hinge line for rudders and elevators.

But on the FLAP horns, move the horn bolt rearwards about 1"(25mm.) from hinge line and re-drill the hole for the clevis back so that the hole in the plastic flag is a full 3/4" back behind the hinge line. This will allow the flap to drop almost to 90 degrees full deflection.

Insert all hinges and check range of movement, then apply thin CA glue.



Warning!

Be sure to apply thin C.A. glue to both sides of each hinge. Then pin each hinge from below using cocktail sticks, fore and aft of the hinge line. Do not pierce the top surface.

Be sure to apply instant type CA glue to both sides of each hinges. (low viscosity type)

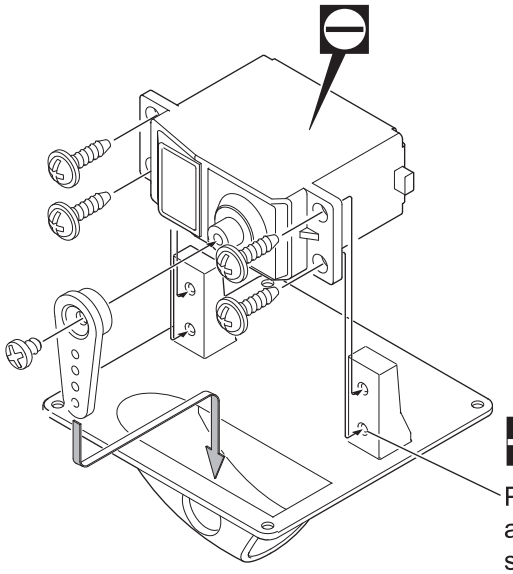
2 Wings

As With all ARF Kits, it is essential to make a thorough check of all glue joints and add epoxy or CA glue if required.

3 Servo Mounts

L R Assemble left and right sides the same way.

Main Wing Installation ---------- 2
Flap Servo Installation ---------- 2
Elevator Servo installation ------- 2
Rudder installation ---------- 2

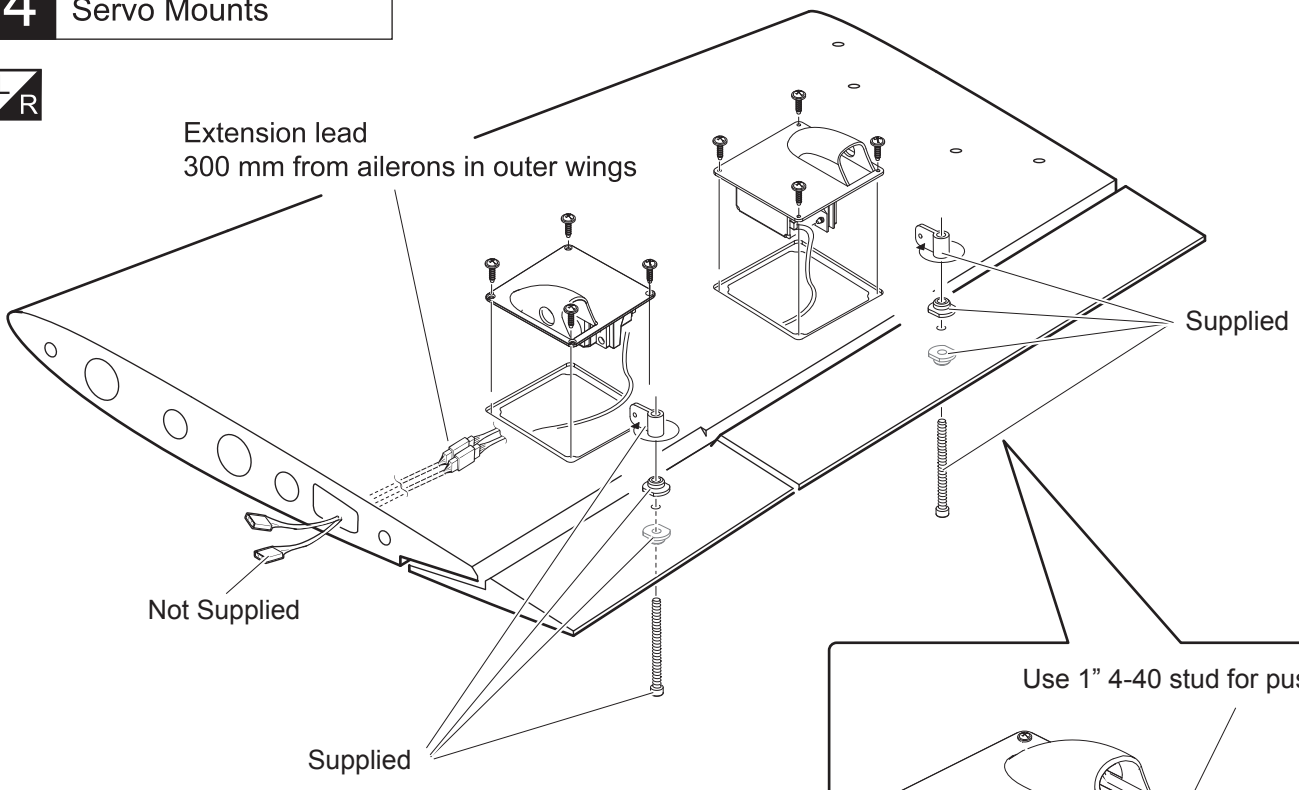


Position of holes may need adjustment depending on servo brand used

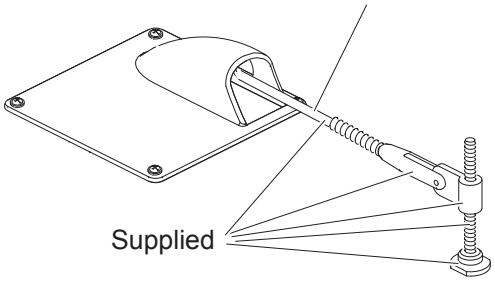
4 Servo Mounts

Follow Sullivan horn instructions.

L R



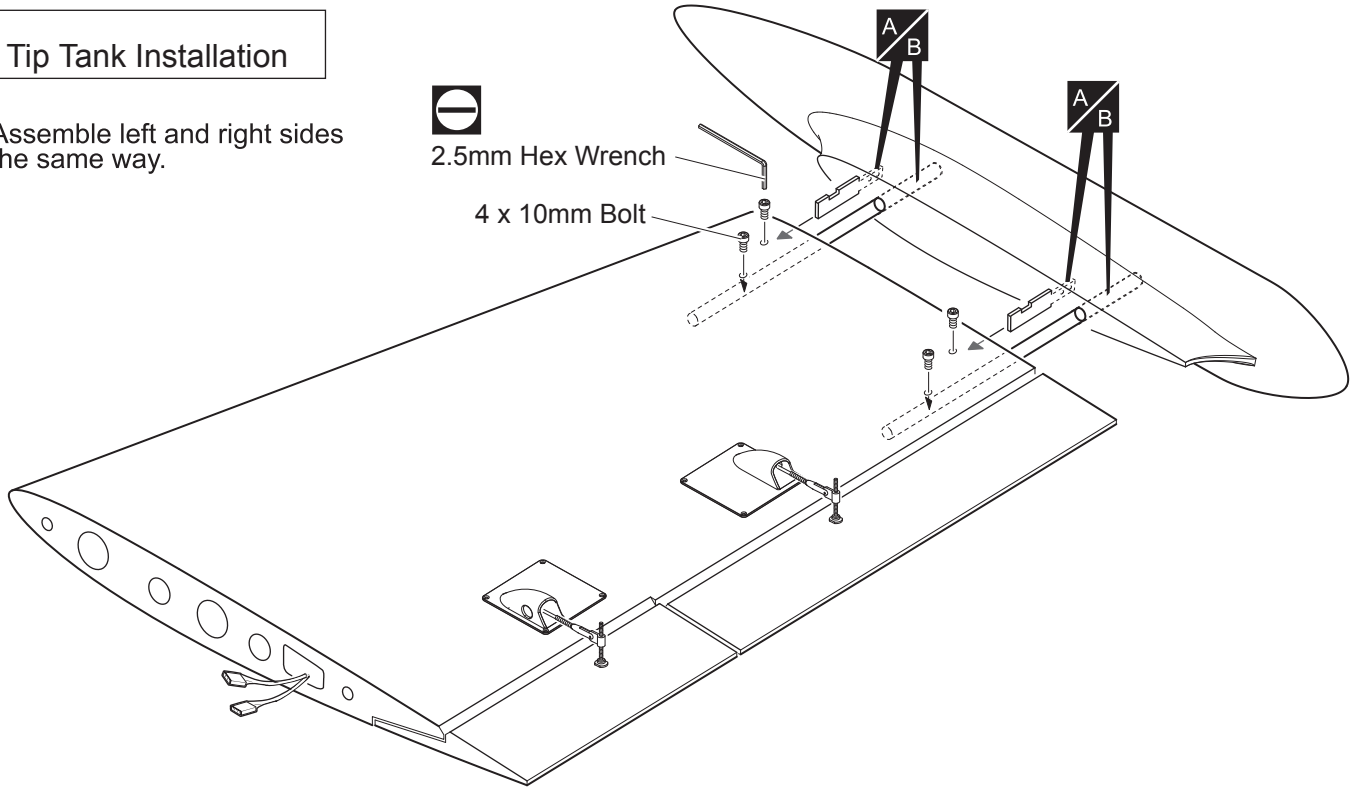
Use 1” 4-40 stud for pushrods

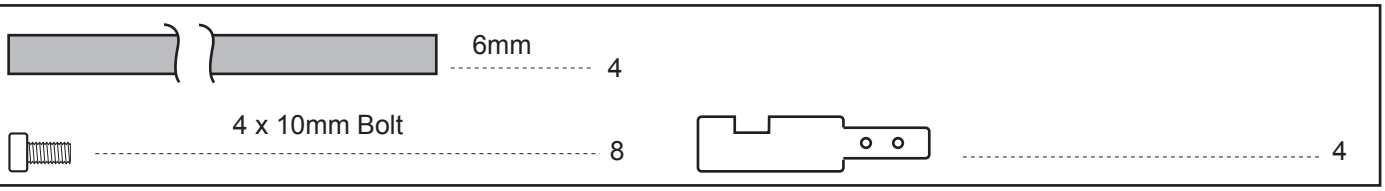


2.6 x 12mm TP Screw ---------- 8

5 Tip Tank Installation

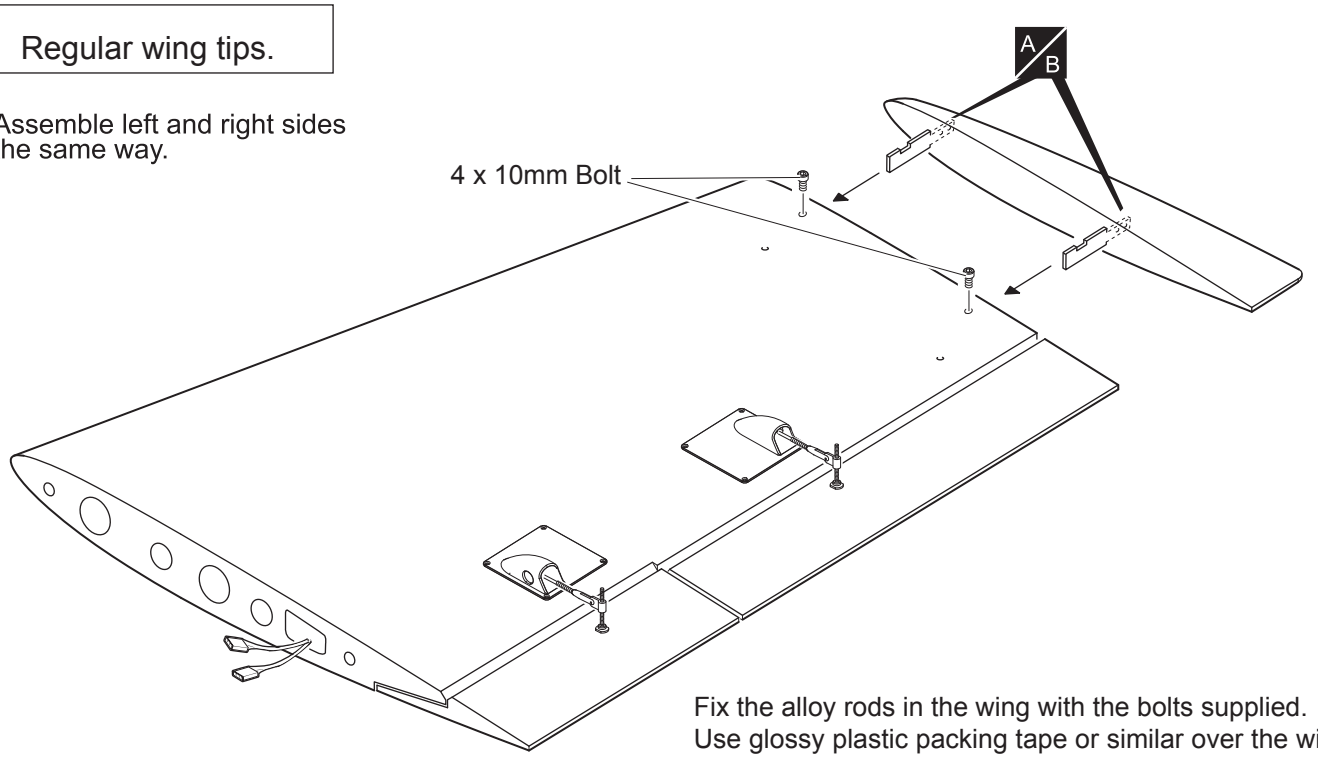
L R Assemble left and right sides the same way.



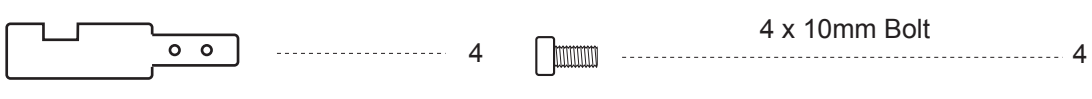


6 Regular wing tips.

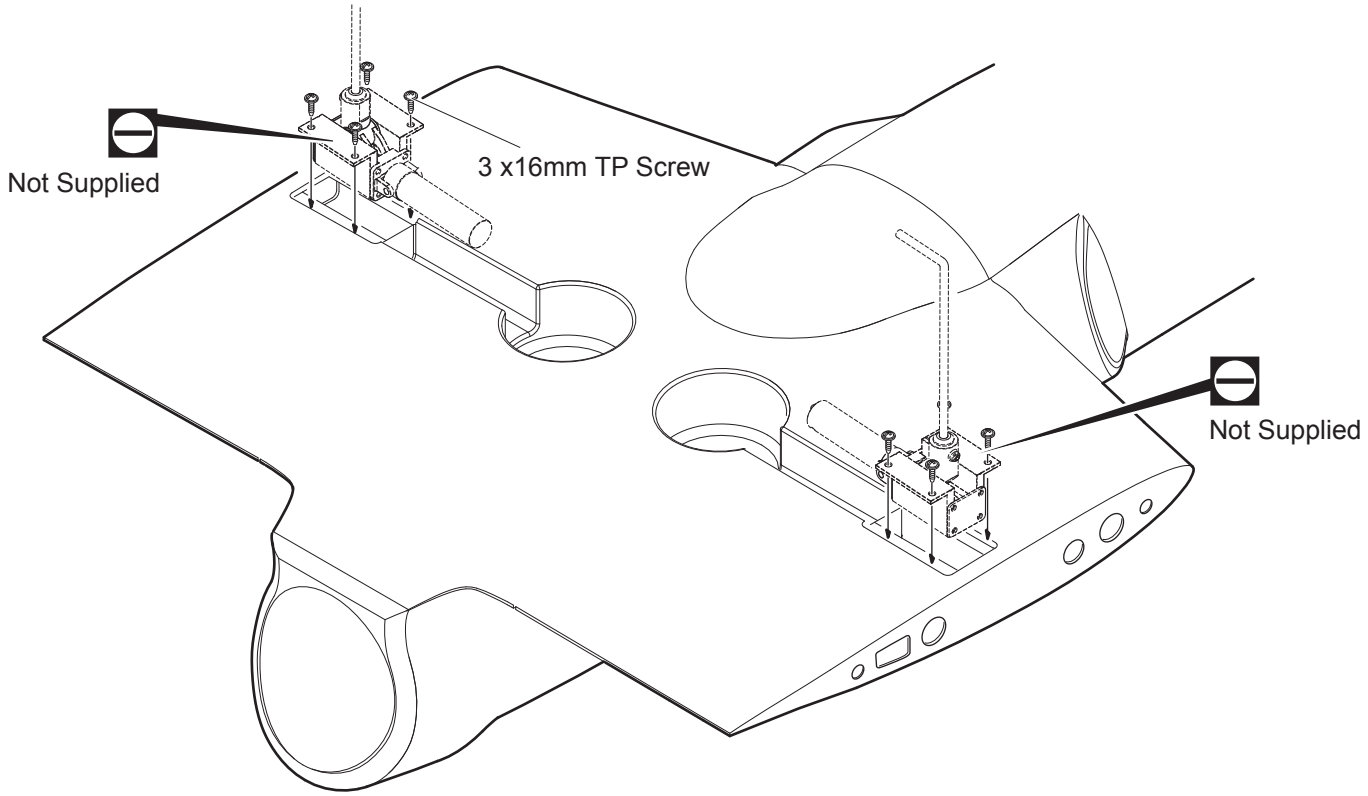
L R Assemble left and right sides the same way.



Fix the alloy rods in the wing with the bolts supplied. Use glossy plastic packing tape or similar over the wing to ensure release, then use 5 minute epoxy glue in the wing tips. Line up and press the tip home while the glue sets. Then slack off the bolts and release the tip with the tabs in place.

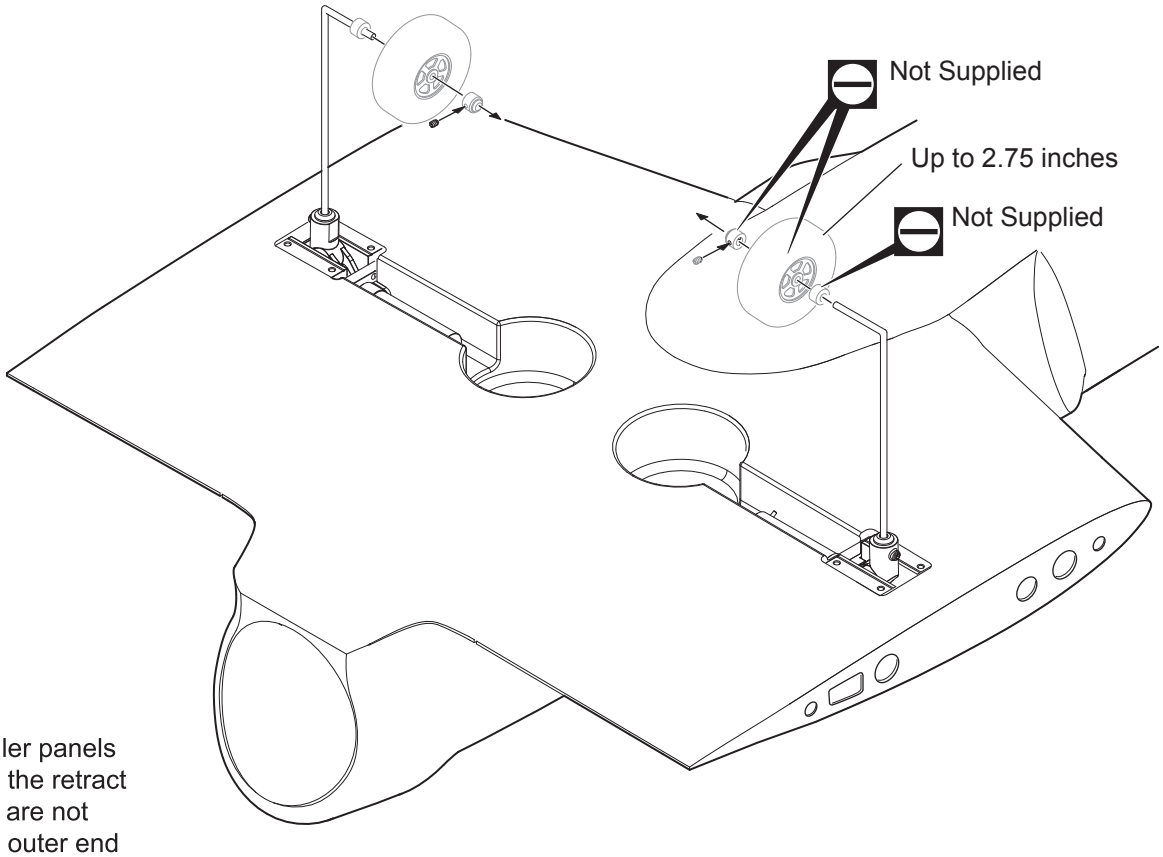


7 Mounting Retracts



3 x16mm TP Screw ---------- 8

8 Mounting Retracts

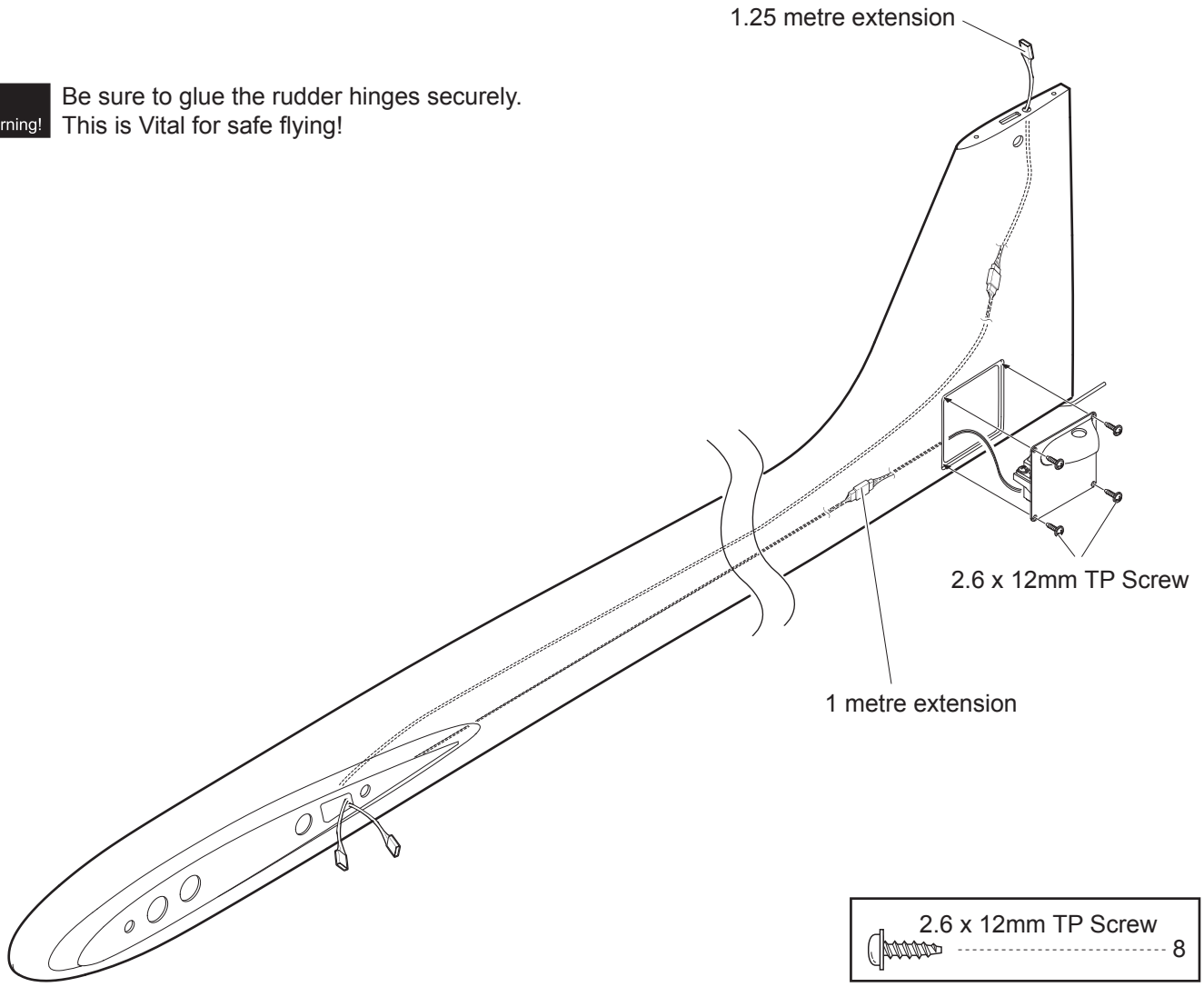


Use plywood filler panels supplied to tidy the retract wells if retracts are not mounted at the outer end of the rails.

9 Rudder Servo

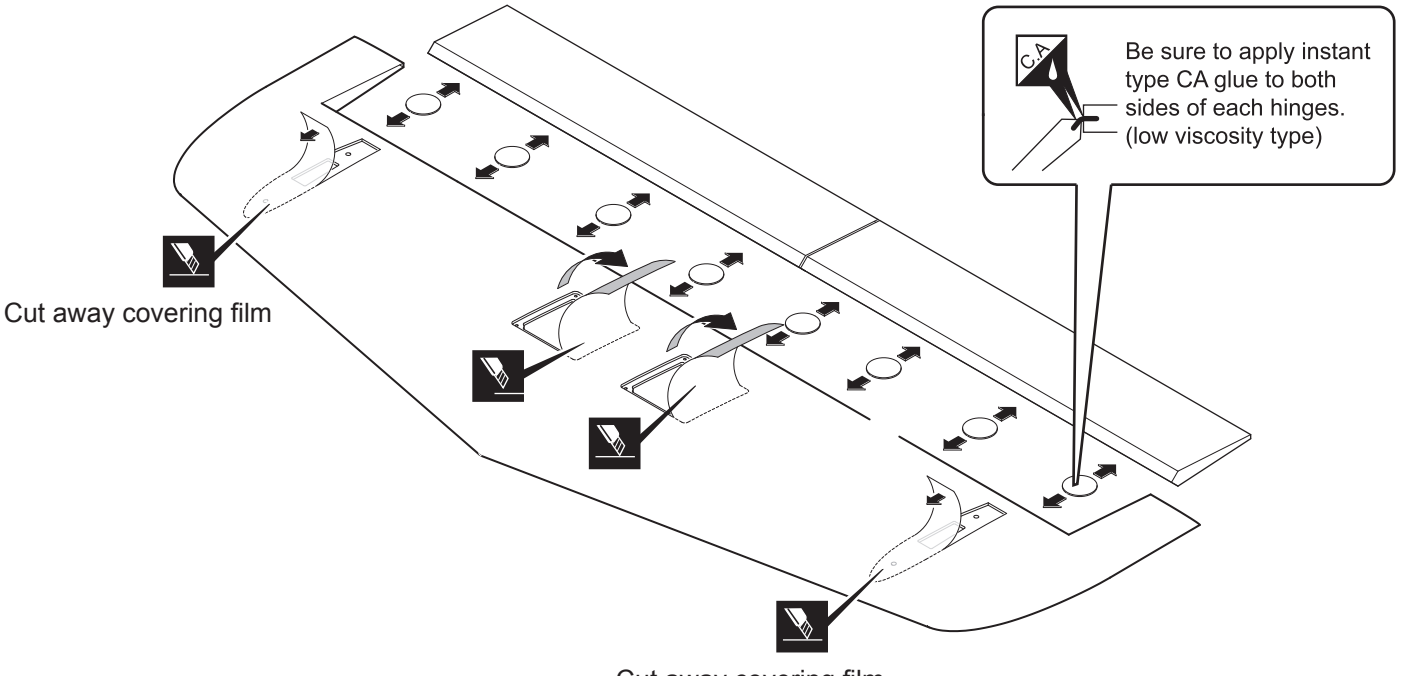
L R

Warning! Be sure to glue the rudder hinges securely.
This is Vital for safe flying!

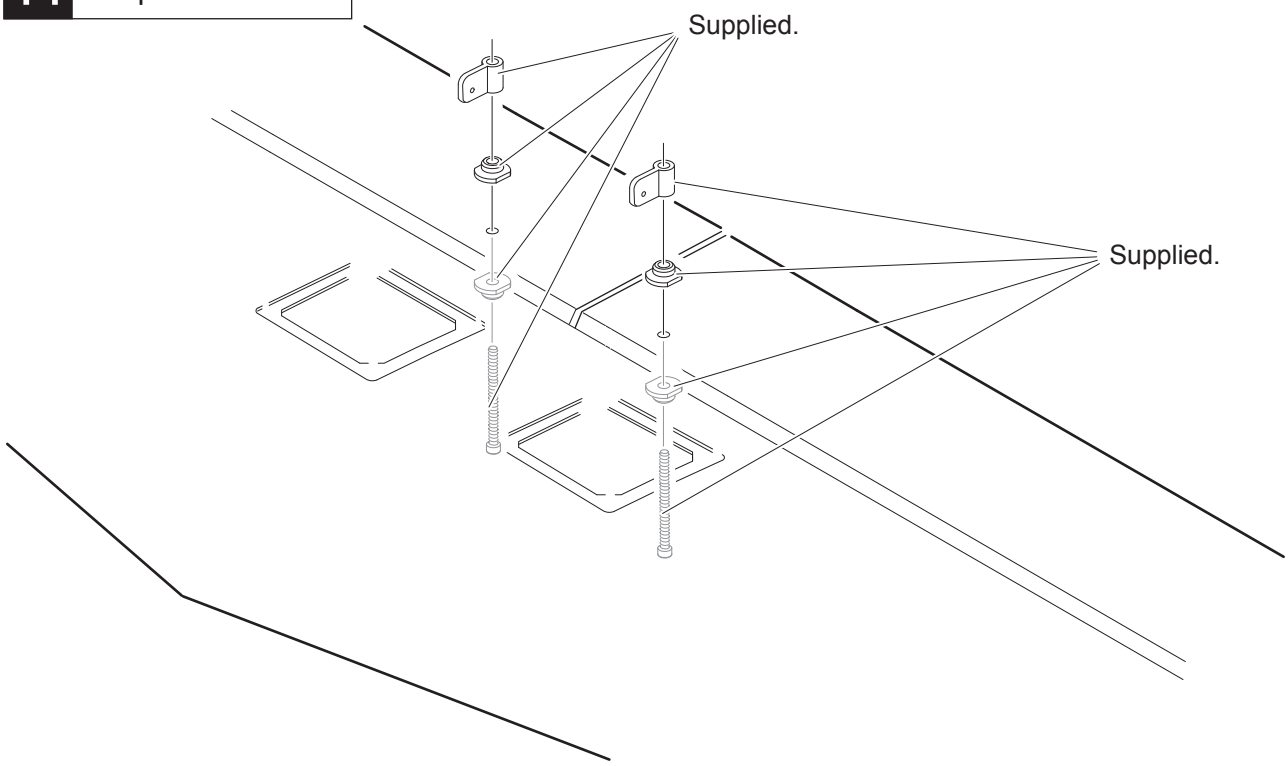


2.6 x 12mm TP Screw ---------- 8

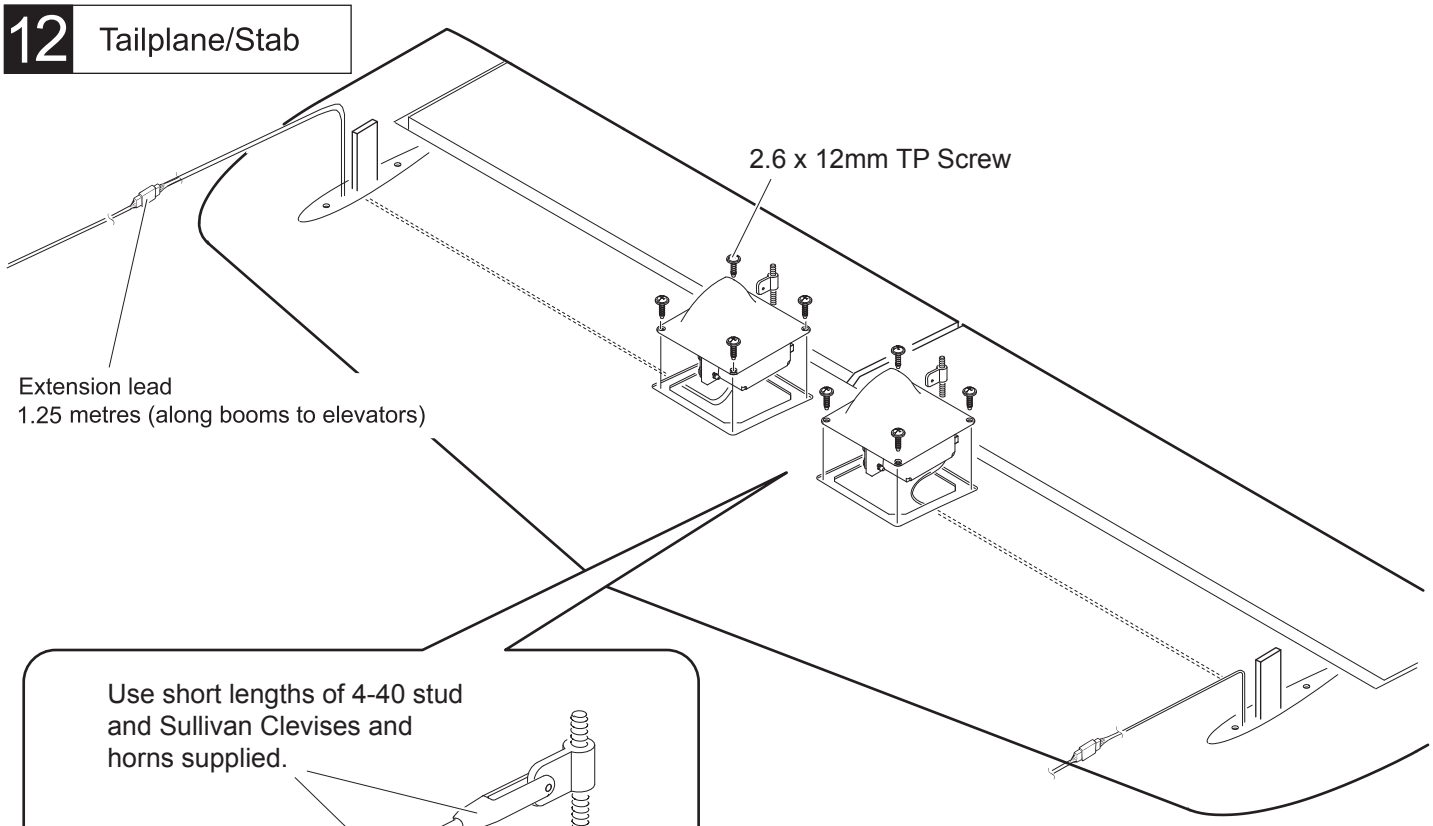
10 Tailplane/Stab



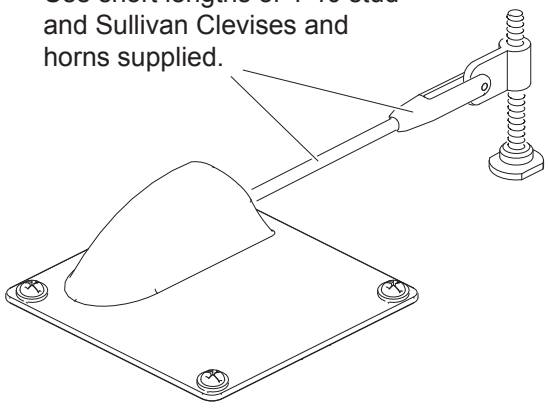
11 Tailplane/Stab



12 Tailplane/Stab



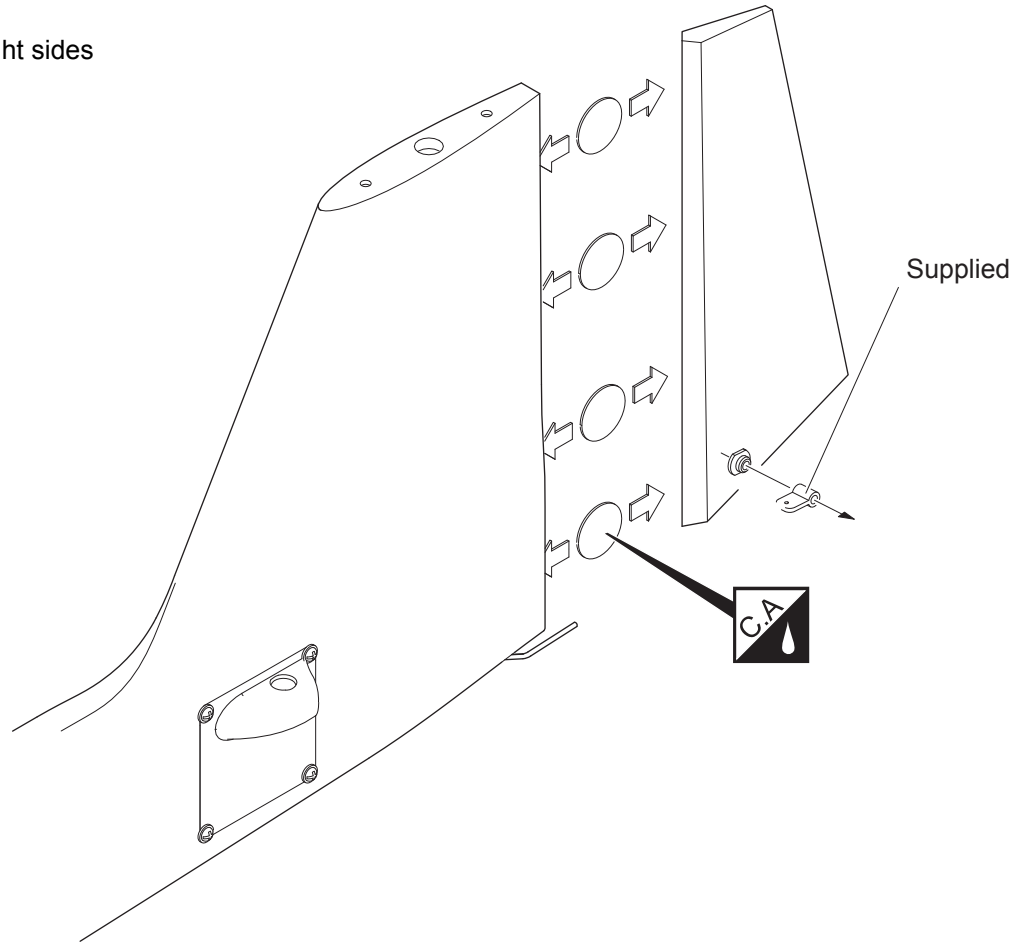
Use short lengths of 4-40 stud and Sullivan Clevises and horns supplied.

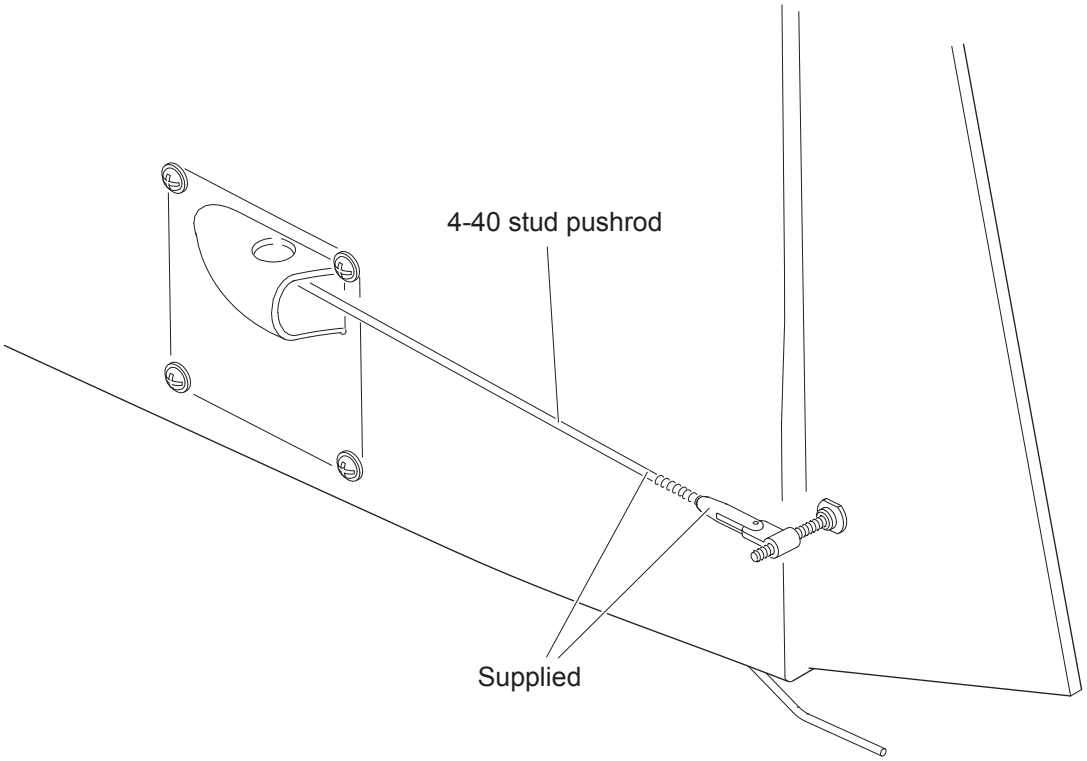


2.6 x 12mm TP Screw ---------- 8

13 Rudders

L R Assemble left and right sides the same way

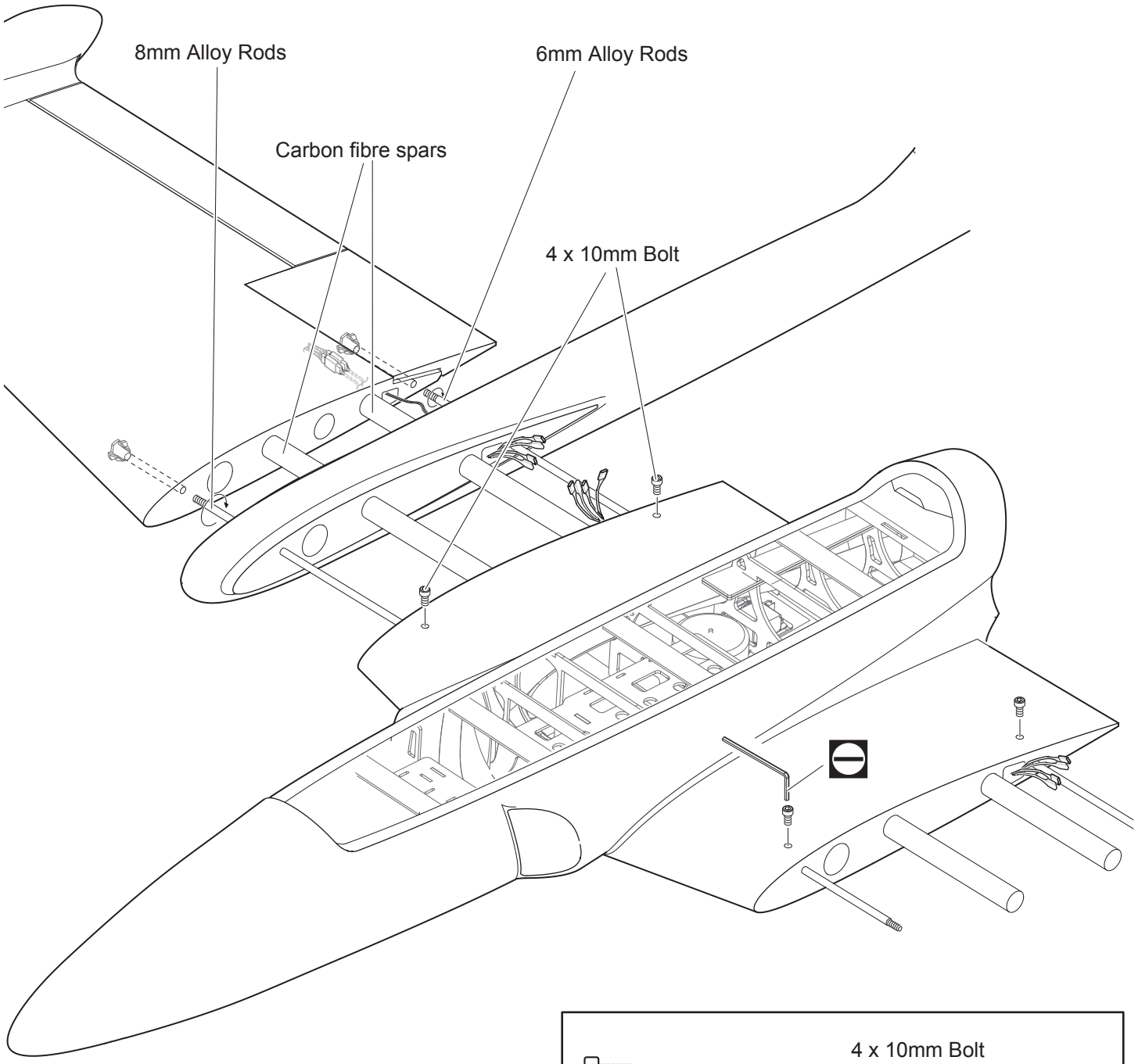


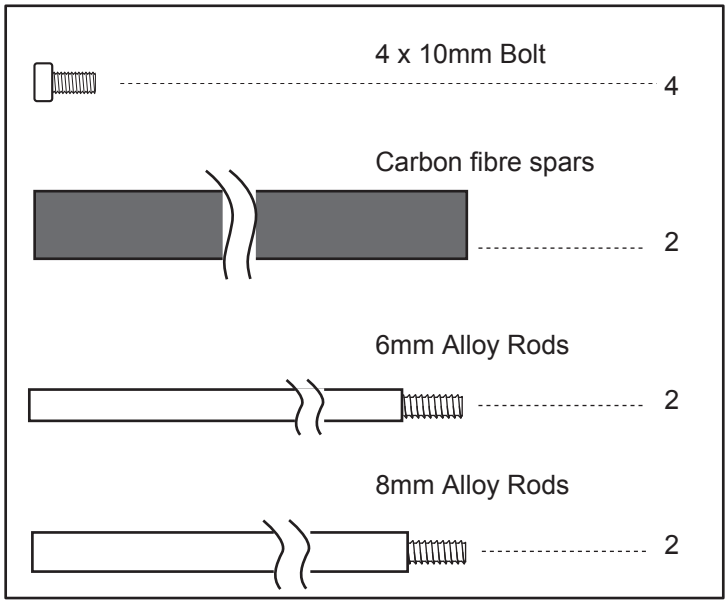


L R Assemble left and right sides the same way

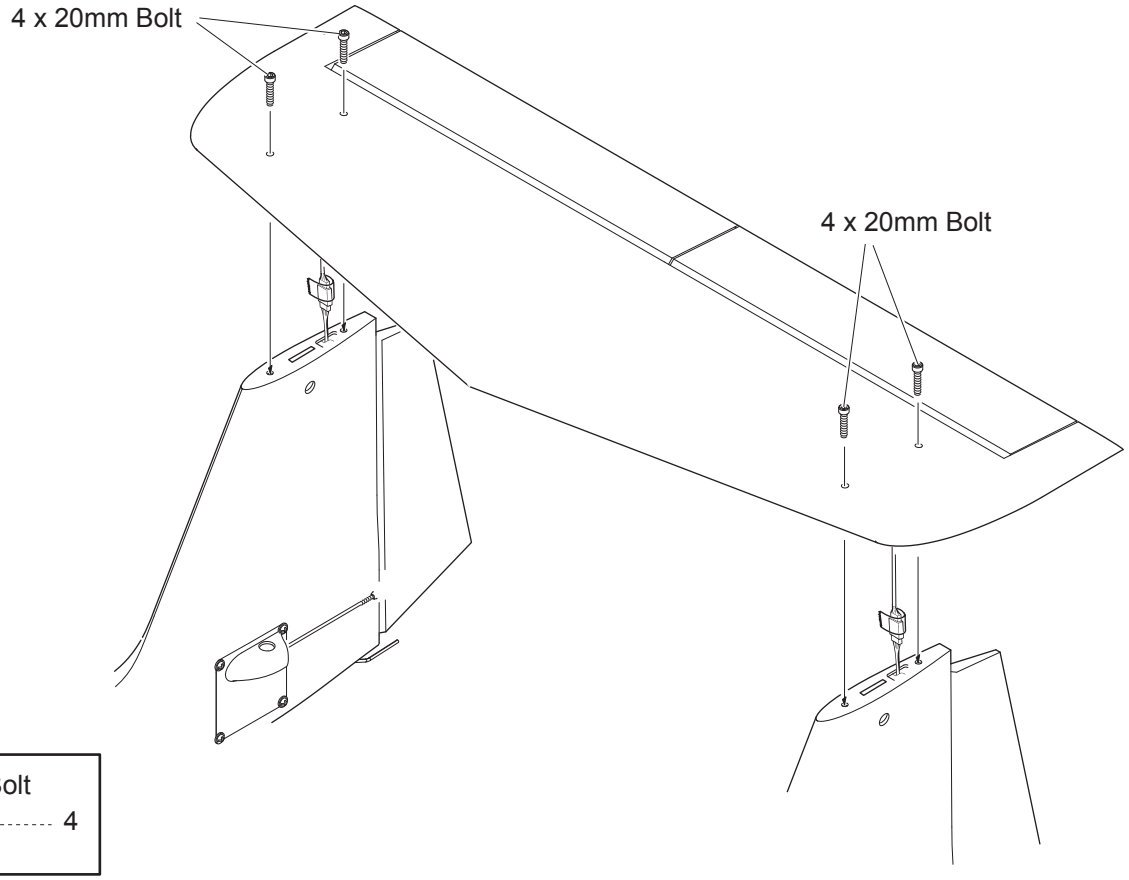
14 Assembly

L/R Assemble left and right sides the same way





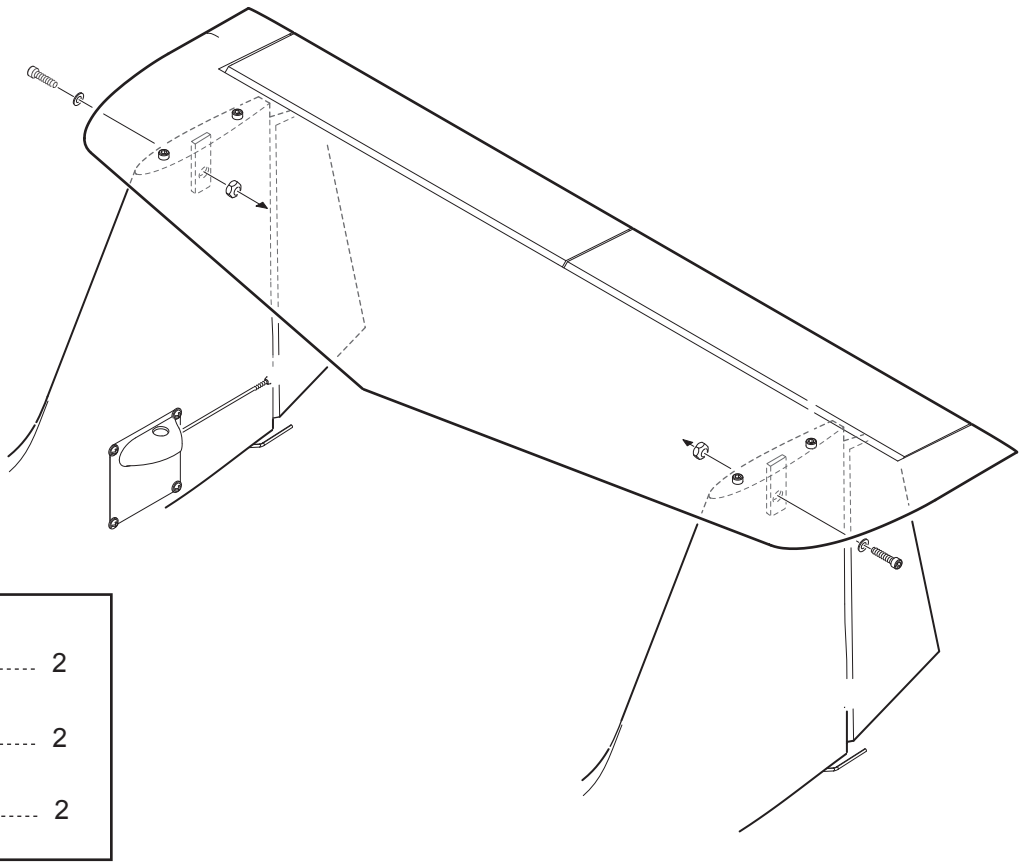
15 Tail Assembly



4 x 20mm Bolt ---------- 4

16 Additional safety fitting to stabilisor

With tailplane (Stab.) firmly screwed down, pass a 3.6mm drill through the holes in the fins and drill a hole through the metal tongue projecting down from the Stab. Remove the Stab and tap the new hole in the tongue out to 4mm thread. Repeat the process through the other fin. During assembly apply the 4mm X16mm bolt through the fins and the tongues and lock in place with the 4mm nylock nuts and washers supplied. If a 4mm tap is not available drill the hole in the tongue out to 4mm and assemble the same way.

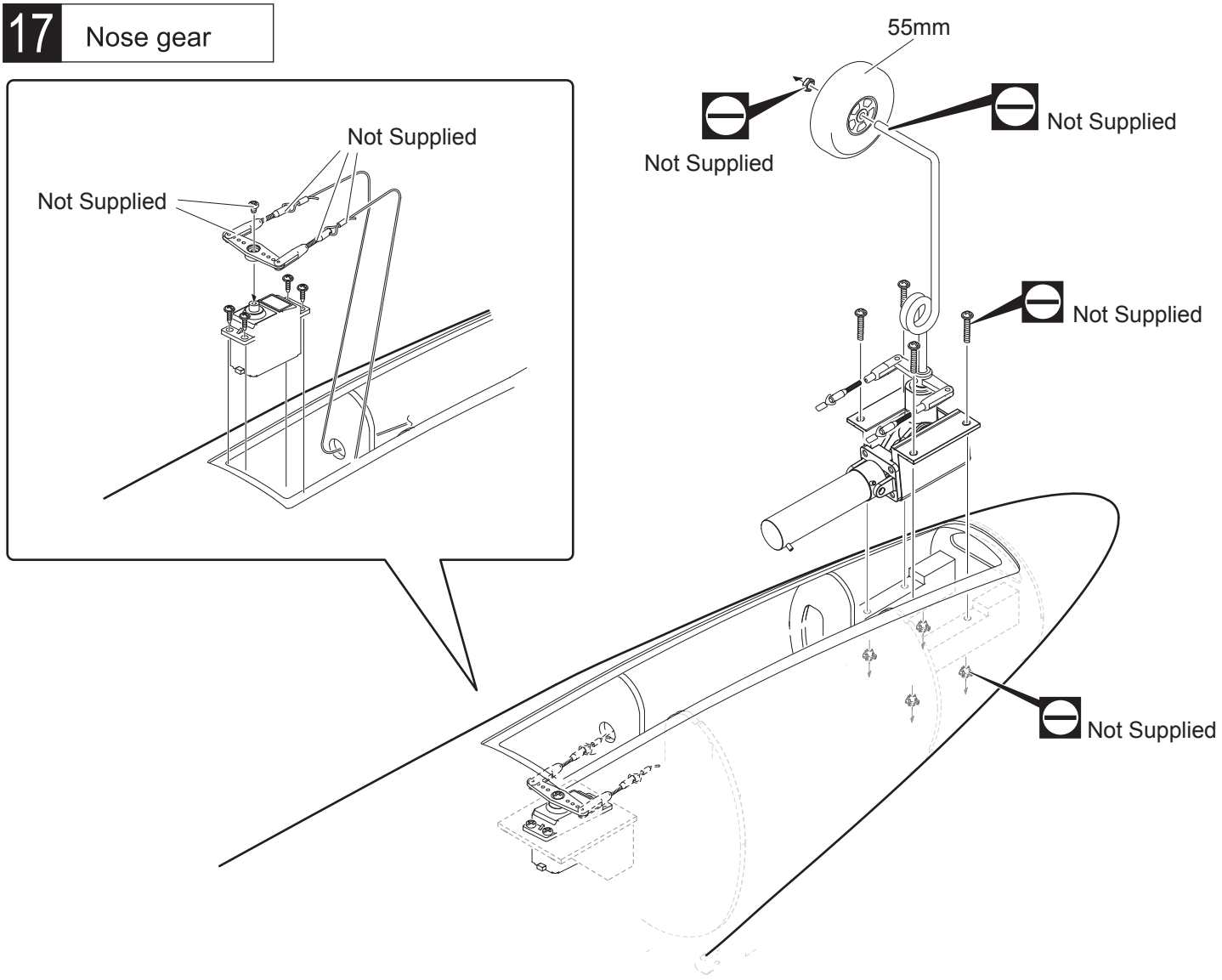


4mm Washer ---------- 2

4mm Lock Nut ---------- 2

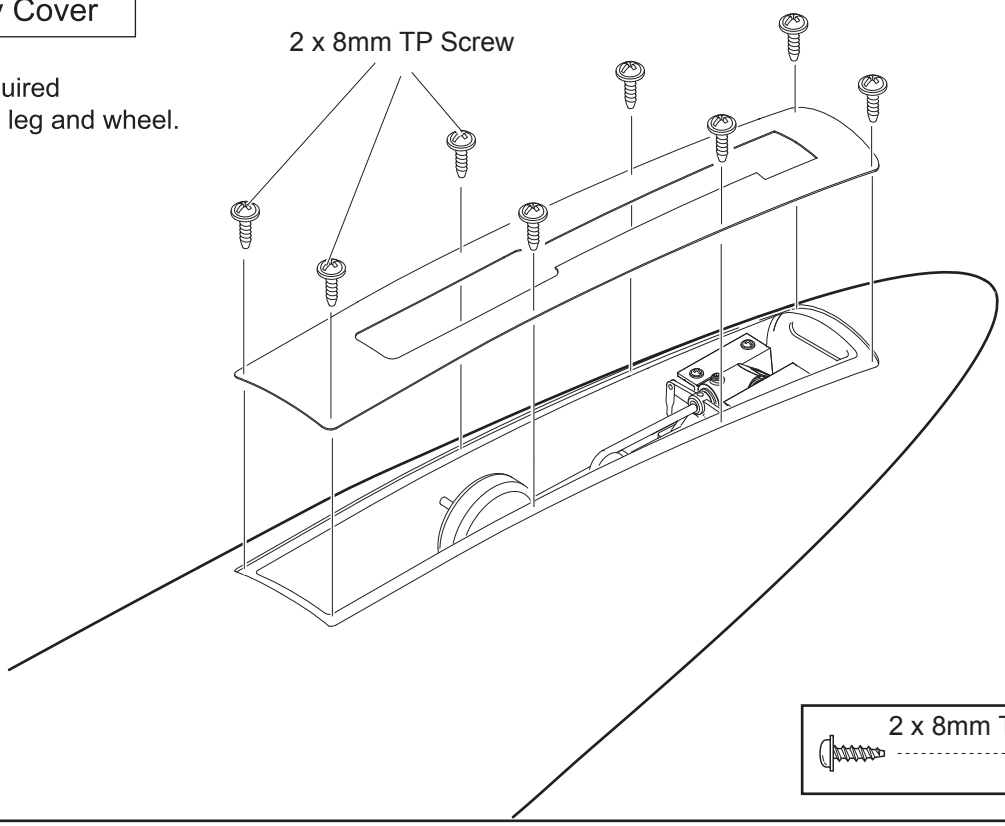
4 x 16mm Screw ---------- 2

17 Nose gear



18 Noseleg Bay Cover

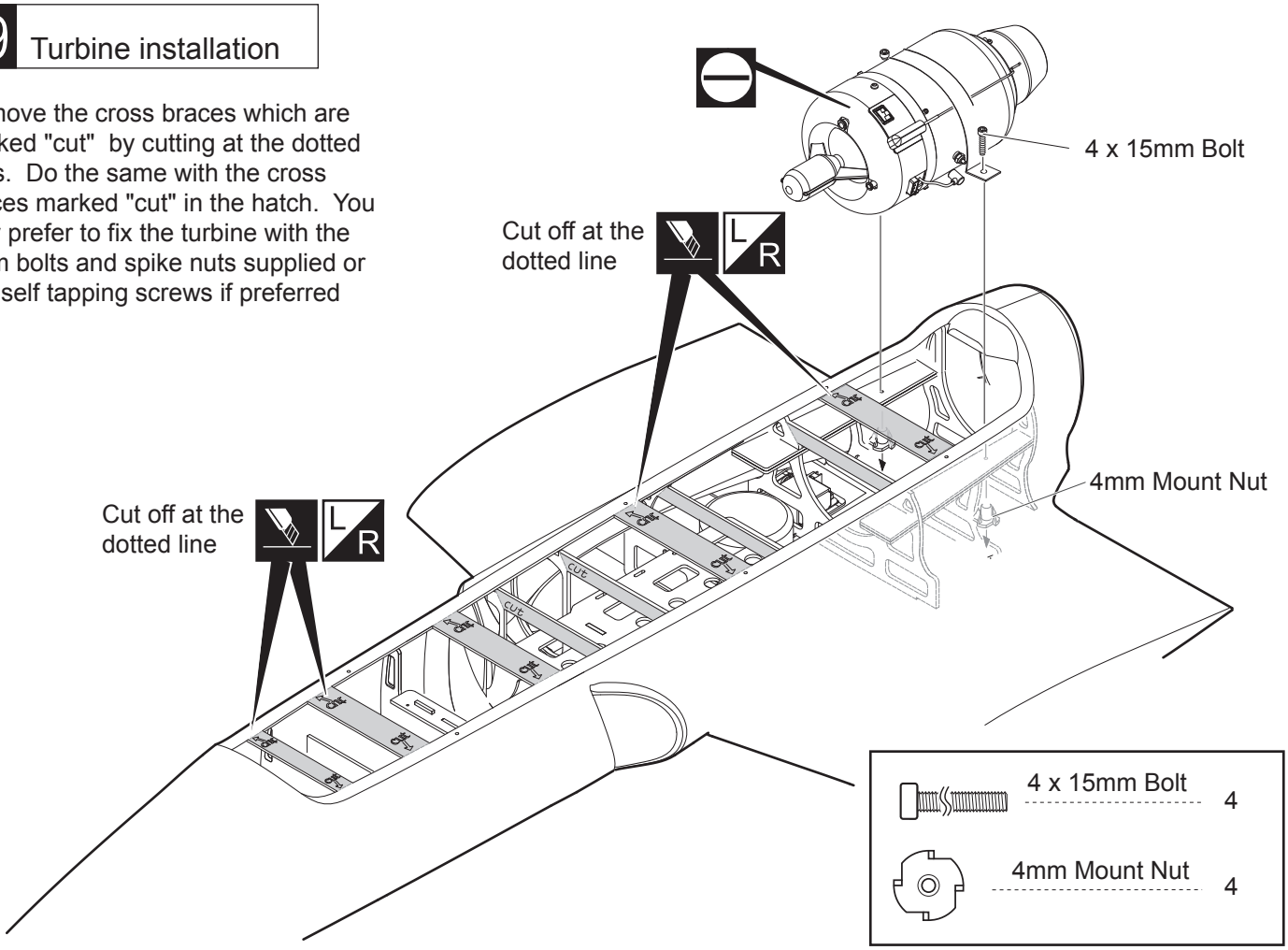
Trim the cover as required
to clear the retracting leg and wheel.



2 x 8mm TP Screw	8

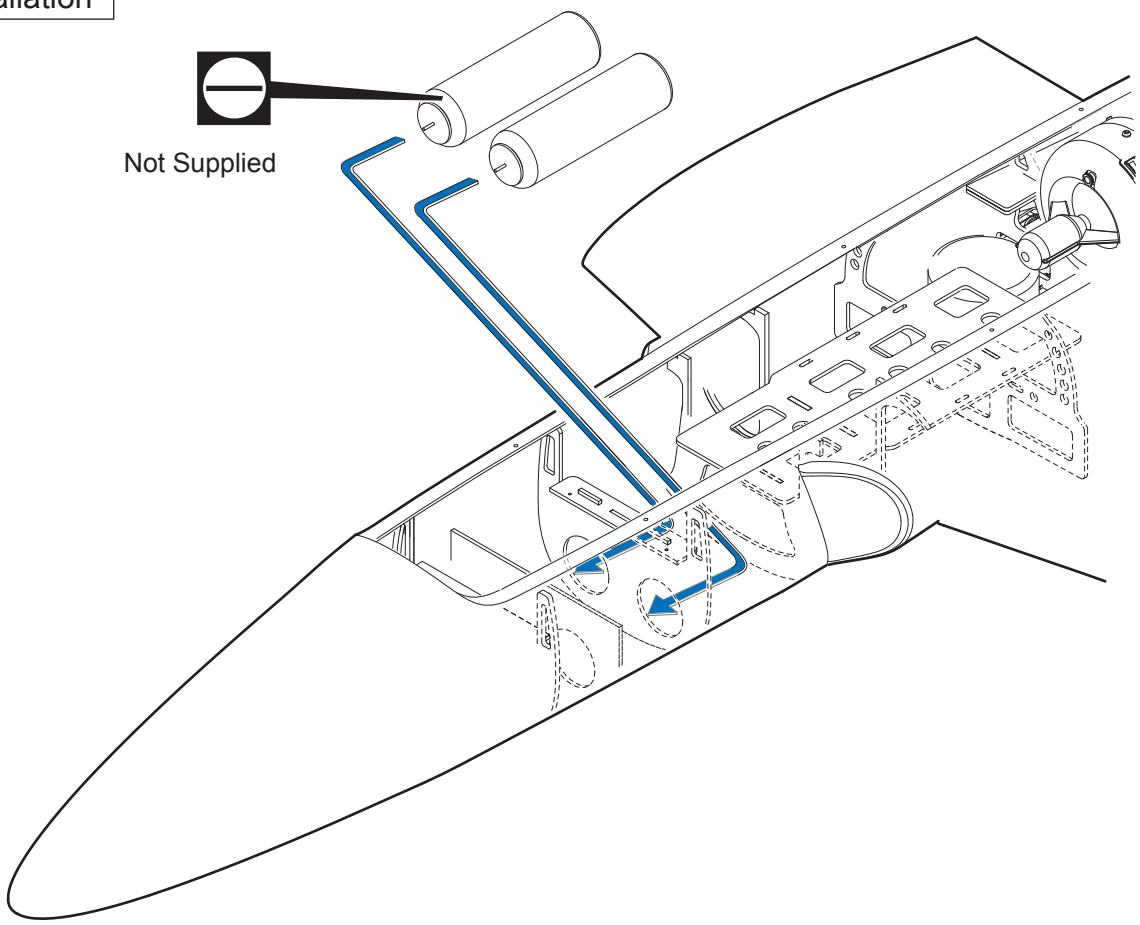
19 Turbine installation

Remove the cross braces which are marked "cut" by cutting at the dotted lines. Do the same with the cross braces marked "cut" in the hatch. You may prefer to fix the turbine with the 4mm bolts and spike nuts supplied or use self tapping screws if preferred

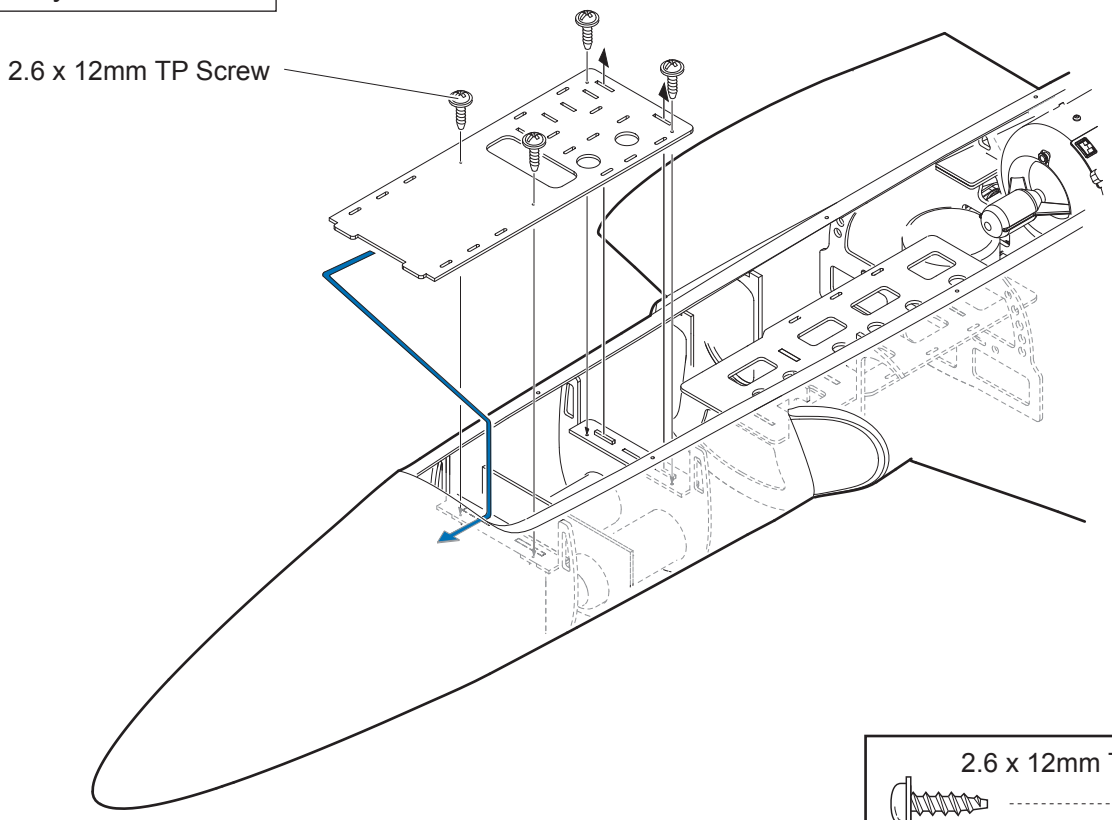


4 x 15mm Bolt	4
4mm Mount Nut	4

20 Air bottle installation

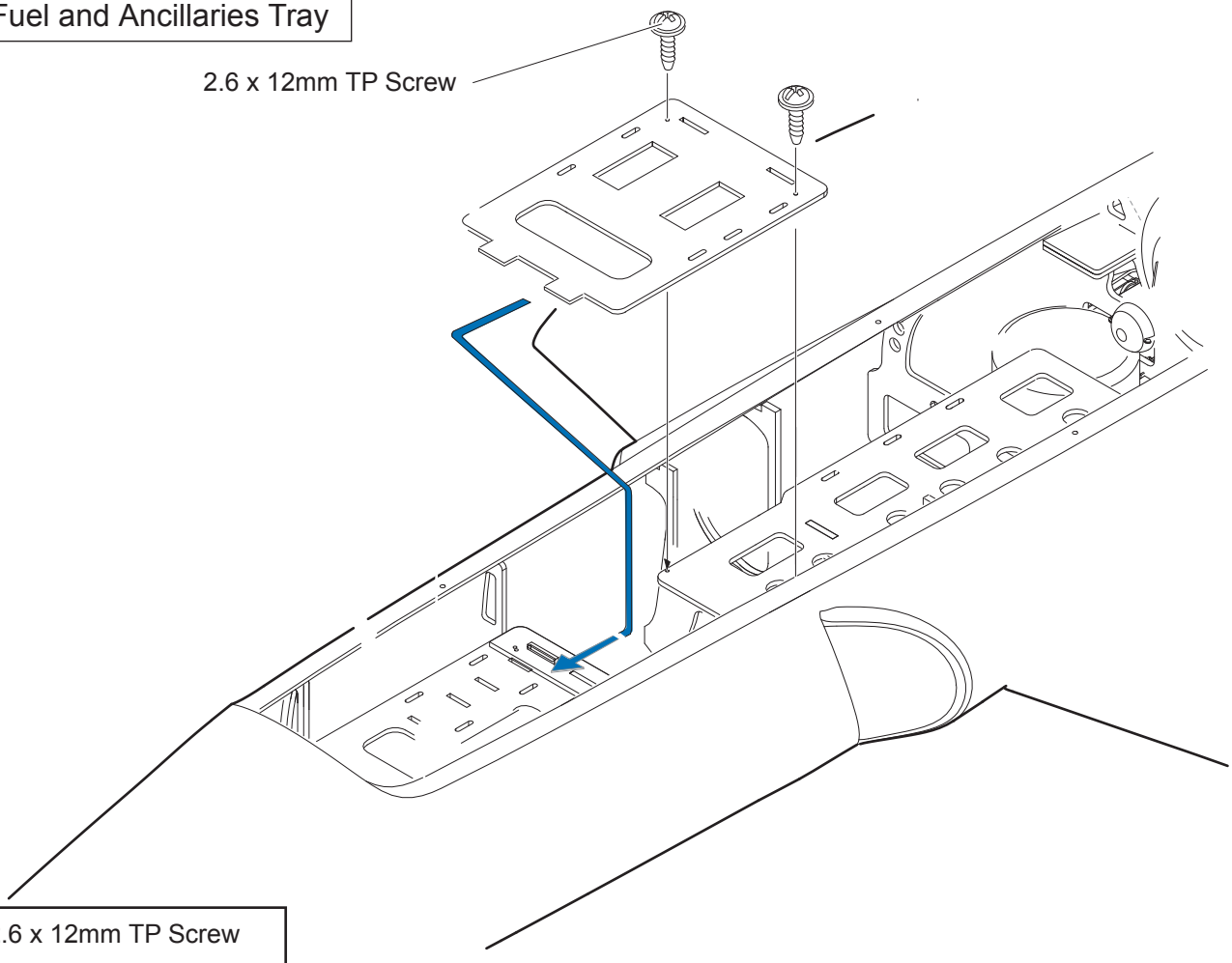


21 Battery and RX



2.6 x 12mm TP Screw ---------- 4

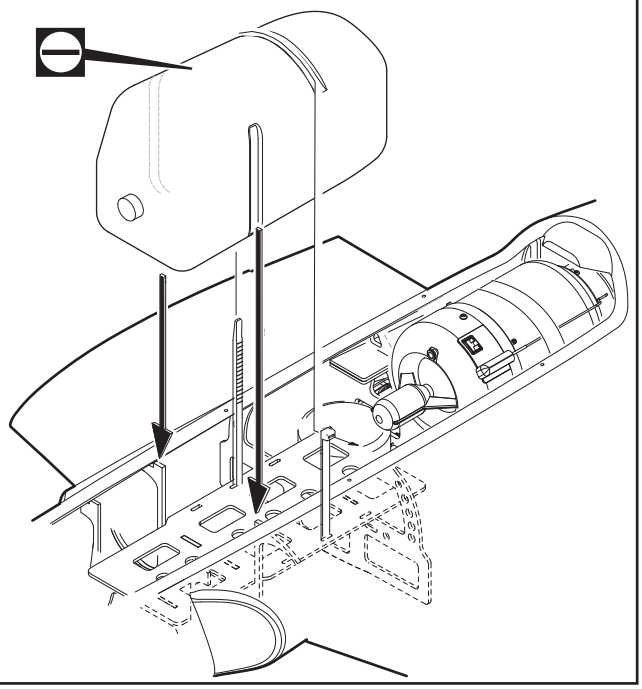
22 Fuel and Ancillaries Tray



2.6 x 12mm TP Screw ---------- 4

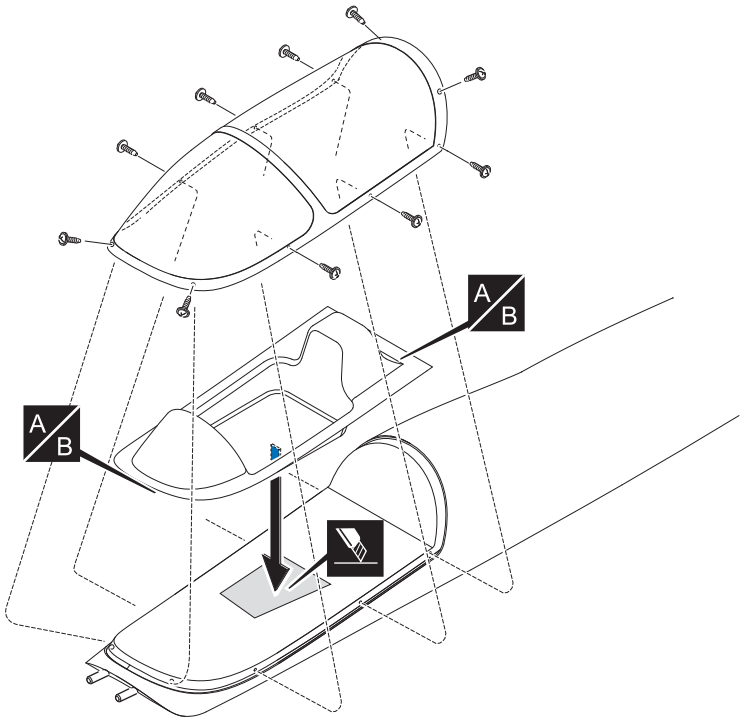
23 Fuel Tank

It is essential to use Velcro double sided Straps or large tie wraps through the vertical parts of the formers to fix the fuel tank.



24 Cockpit/Canopy

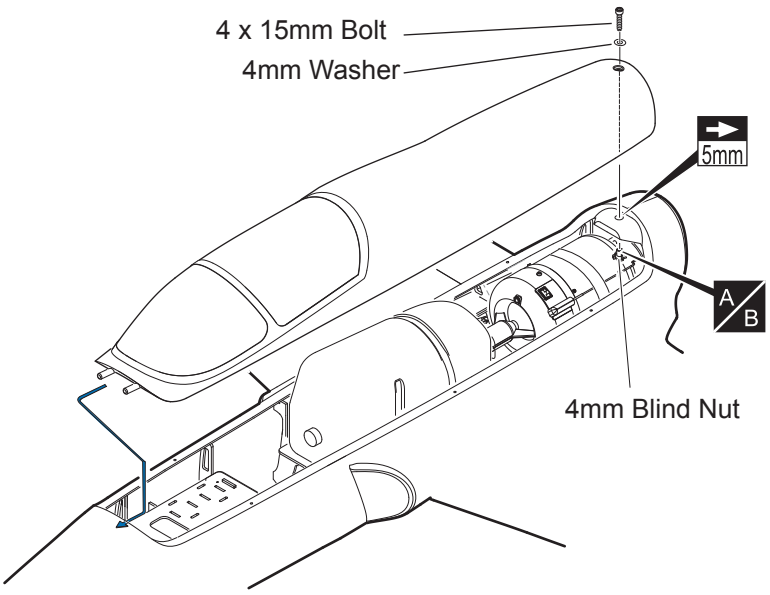
Cut out the cockpit floor to take the pilot seat and glue it in place.



2.6 x 12mm TP Screw ---------- 10

25 Top Hatch

Trim or adjust the dowels if necessary to ensure a good hatch fit. With hatch in place, drill through at rear of hatch and F/G fuselage tab to position the blind nut.Check the fit of 4mm. bolt/hatch, glue blind nut in place under the tab.



4mm Blind Nut ---------- 1

4mm Washer ---------- 1

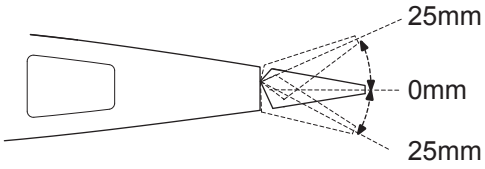
4 x 15mm Bolt ---------- 1

26 Setting Up

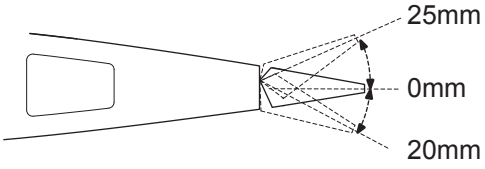
Shift the location of the receiver and battery pack as needed to obtain the specified CG.

Carefully install the receiver and battery pack to ensure that they will not shift during flight.

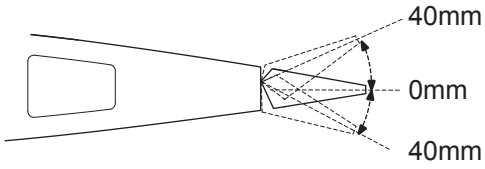
Set the travel to the values show below for the first flights. You can increase these later for aerobatics if desired.



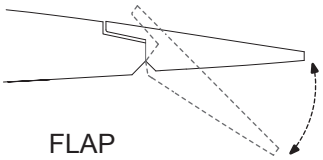
ELEVATOR



AILERON

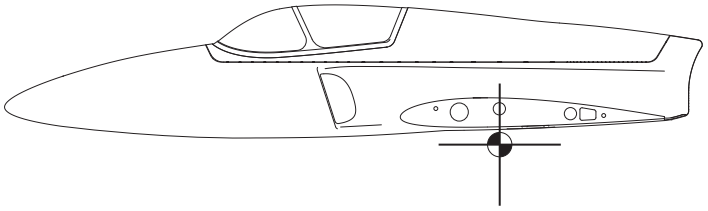


RUDDER

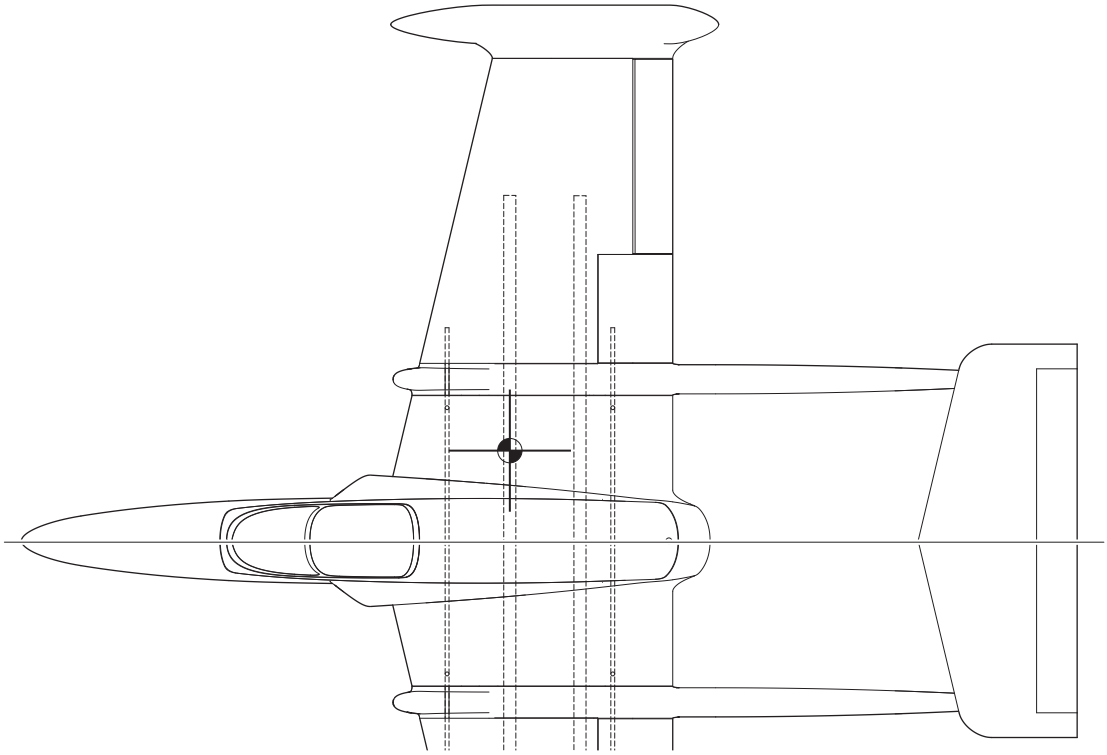


FLAP

The flap should drop as near to 90 degrees as possible



For your first flights, take the CG with the model “dry” all assembled with the retracts down and the hatch removed. If you are using lightweight batteries you will need to add up to 16 ounces of weight in the nose. The CG should be at the centre of the front carbon fibre wing spar.



Supplementary instruction for Torus Wing Bag

Due to a late design change in the wing tip tanks assembly which permanently fixes the alloy rods in place, it is necessary to cut a slit in their protective bags to allow the tanks to be put in.

Make a straight cut, starting from the open end for approximately 18" along the bottom of the bag. Insert the tiptank, pointed end first. Once the tank is in the bag, the opening can be held together using elastic bands or Velcro or similar fixing method.

IMPORTANT WARNING.

READ THROUGH BEFORE ASSEMBLING OR FLYING YOUR KIT.

Just as in any full size aircraft, any R/C model aircraft can be made to fail, be it a wing folding or a fuselage breaking under too high a load. Model R/C aircraft have a maximum safe G limit. Because you are not in the plane it is difficult to judge the G during flight, and it is very easy to exceed the limits of the aircraft. This is particularly important if you install a turbine larger or more powerful than the power band specified for that particular kit. This negates any airframe warranty straight away.

All our designs are thoroughly test flown before the kit is released for sale. Turbine powered R/C model aircraft are not manufactured to withstand unlimited G forces. When flying your Boomerang Jet, be aware of the high loads which can be in excess of the airframes capability to handle. Respect the airframe as you would when flying a full size aircraft. Fit a turbine only up to the specified power.

Understand that if you perform a snap roll, wall, blender, knife edge loop or any similar manoeuvre, or pull hard on the elevator, particularly at high speed, you can over stress the airframe by up to15 G or more. At 15 G, the 27 lbs (12.2 Kilo) model effectively weighs over 400 lbs (184 kilo), and though it may be for only a few seconds, the strain on the airframe is huge. Your model may survive those hard manoeuvres a few times, but eventually the cumulative damage will tell and airframe break up can occur.

It is common practice for any manufacturer not to replace an airframe which breaks in the air or upon landing. Manufacturers may replace airframes when they have noticed many incidences of the same failure and it is determined that there was a design fault or repeated manufacturing error. If you break an airframe, and you are the only one to do so, then it is highly unlikely to be the fault of the manufacturer. Fly safely, and avoid full throttle operation other than at low airspeeds.

R/C model jets are not toys! If misused, they can cause serious bodily harm and property damage. Fly only in open areas, and AMA (Academy of Model Aeronautics) or BMFA (British Model Flying Association) or your country's approved flying sites. Follow all manufacturer instructions included with your plane, radio, servo's, batteries and engine. Each kit is guaranteed to be free from defects in both material and workmanship at the date of purchase. Warranty does not cover any component assembled by the customer. All parts of high stress must be inspected and reinforced if necessary by a competent builder.

Some parts should be examined, and if necessary, glued again. High stress areas such as firewalls, motor mounts, wing mounts, landing gear mounts, etc., are areas of high concern. Seek help if necessary.

In no case shall Boomerang RC Jets, LLC. warranty cover any product which is not manufactured by Boomerang RC Jets, LLC. The liability to the manufacturer cannot exceed the original cost of the purchased item.

Further, Boomerang RC Jets, LLC. reserves the right to change or modify this warranty without notice. In that Boomerang RC Jets, LLC. has no control over the assembly or materials used by the builder of the model during final assembly, no liability shall be assumed nor accepted for any damage resulting from the use of the final user-assembled product. By using the user assembled product, the user accepts all resulting liability. The kits manufacturers have provided you with a top quality, thoroughly tested kit and instructions, but ultimately the quality and flying ability of your finished model depends on how you build it. Therefore, we cannot in any way guarantee the performance of your completed model, and no representations are expressed or implied as to the performance or safety of your completed model. It is the user's responsibility to inspect each component for airworthiness.