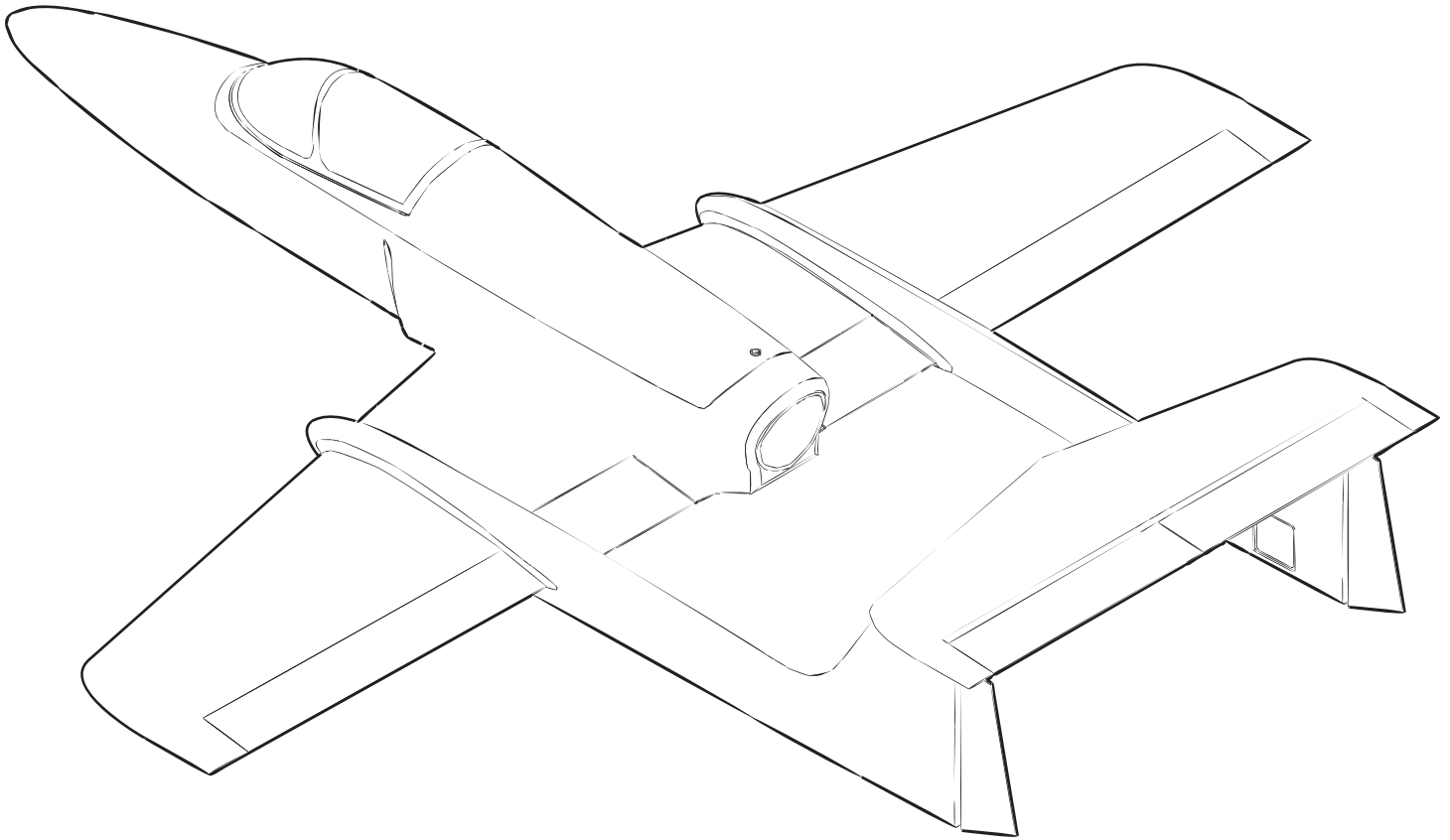


Read through this manual carefully before you begin building and follow it during construction.

BOOMERANG ELAN ARF KIT.

**Aerobatic Sport Jet for 12 to 20 lb. thrust turbines.
Speed Range from 20 to 185 MPH.(32 to 296 KPH).**



Specifications

Span..... 82.5"

Length..... 80"

Weight 20 lbs.(9 Kilos.)

Radio required 5 to 9 Channels.

Servos 9 to 11.

Designer Alan Cardash
Boomerang RC Jets, LLC.

Website: www.Boomerang-RC-Jets.com

Safety Precautions

THE ELAN TURBINE MODEL IS DESIGNED FOR EXPERIENCED MODELLERS. THIS MODEL IS NOT RECOMMENDED FOR BEGINNERS. TURBINE MODELS ARE FOR ADVANCED FLYERS AND SHOULD NOT BE ATTEMPTED BY THOSE WITH INSUFFICIENT BUILDING & FLYING EXPERIENCE. THIS INSTRUCTION MANUAL IS FOR GUIDANCE ONLY. IF YOU ARE UNSURE OF ANY MODEL BUILDING TECHNIQUES, SEEK HELP FROM AN EXPERIENCED MODELLER OR CONTACT Boomerang RC Jets, LLC. FOR ASSISTANCE. JET MODELS ARE DANGEROUS IF CONSTRUCTION IS CARELESSLY OR INCORRECTLY CARRIED OUT. AS THE BUILDING AND FLYING 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 UNUSED KIT TO YOUR SUPPLIER FOR A 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.

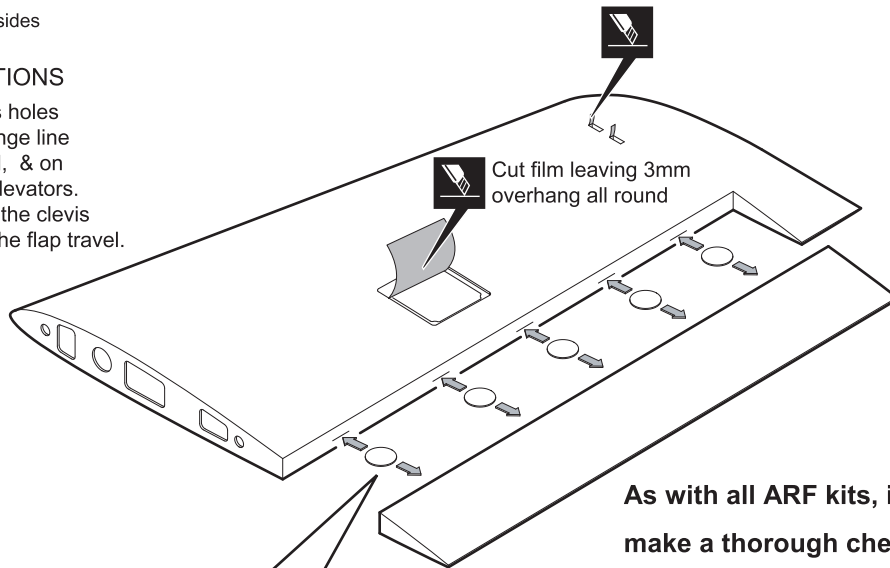
NOTES ON HORN POSITIONS

Mount the horns so the clevis holes are some 5mm behind the hinge line on ailerons to give differential, & on the hinge line for rudders & elevators. Flap horns are mounted with the clevis holes rearward to maximise the flap travel.



Warning!

Be sure to glue securely. This is Vital for safe flying!



Cut film leaving 3mm overhang all round



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

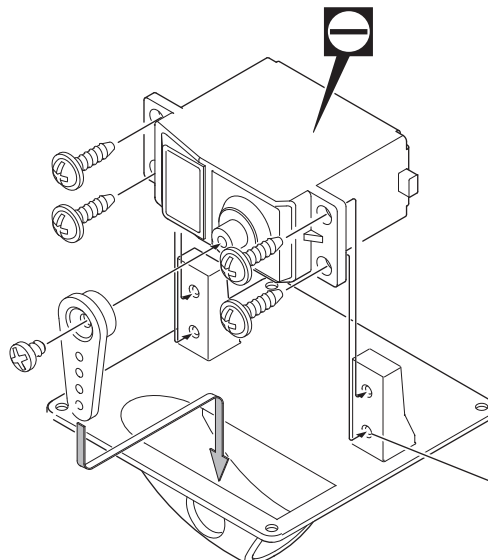
As with all ARF kits, it is essential to make a thorough check of all glue joints and add epoxy or CA glue if required. Also, pass a hot iron over all the Profilm covering edges, especially leading edges of the covering to ensure adhesion, and then seal these with a clear dope or clear coat using a very small brush.

2 Servo Mounts



Assemble left and right sides the same way.

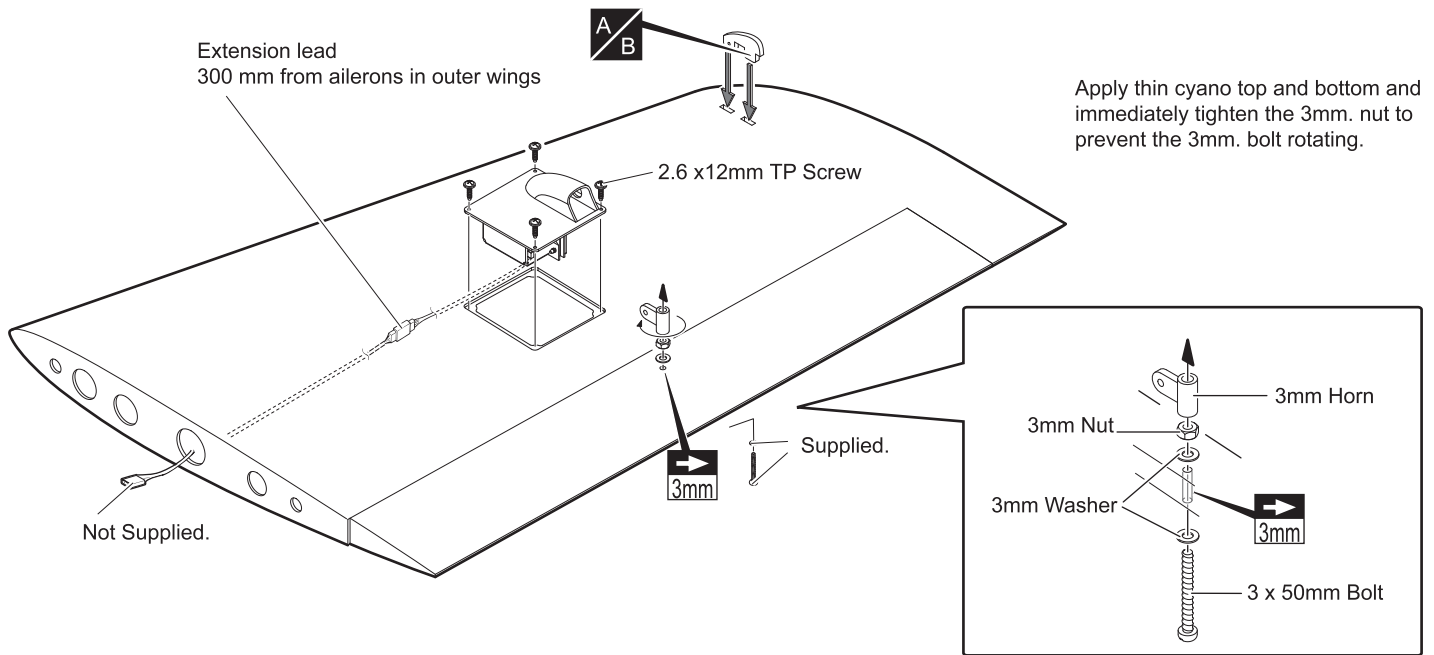
Main Wing Installation	2
Flap Servo Installation	2
Elevator Servo installation	2
Rudder installation	2



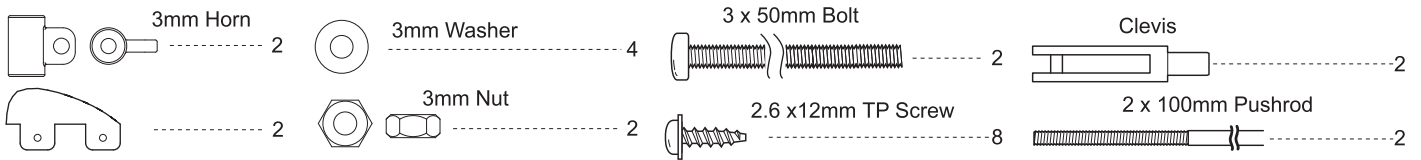
Position of holes may need adjustment depending on servo brand used

3 Servo Mounts

Roughen gluing areas on tip skid, then fix using epoxy glue.



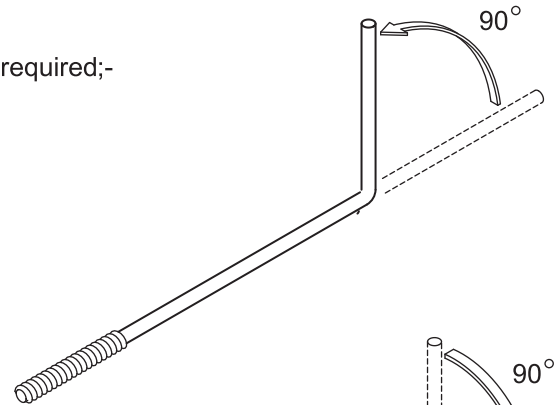
Apply thin cyano top and bottom and immediately tighten the 3mm. nut to prevent the 3mm. bolt rotating.



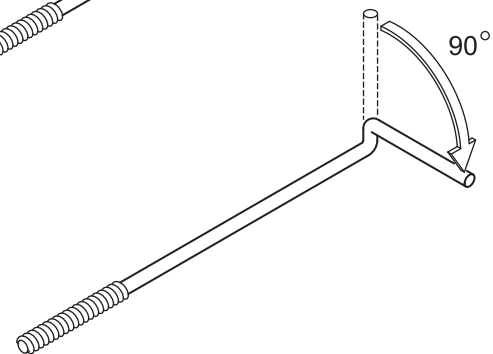
4 Pushrods

To Make the Pushrods to the length required;-

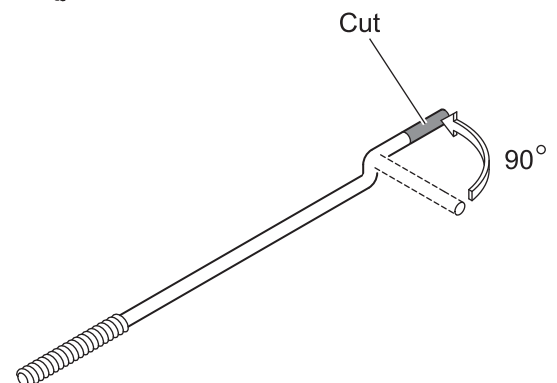
(1) Make a 90 degree bend in the wire at the length required to meet the output hole in the servo arm with the servo centred.



(2) Now make a second bend off at 90 degrees to the first one, left or right, in the wire at approx. 3mm away from the first bend.



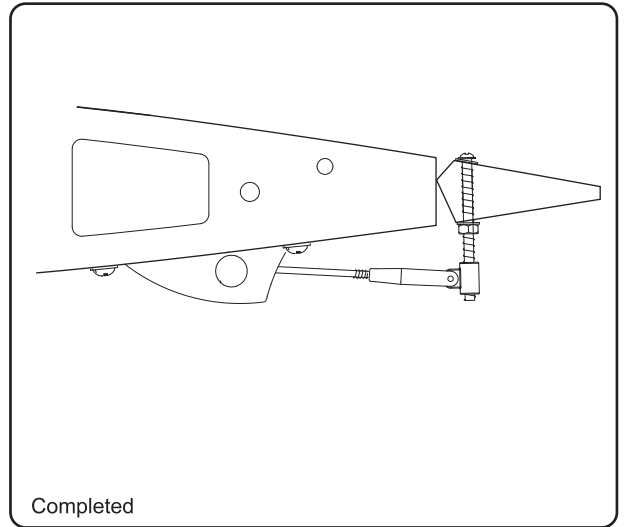
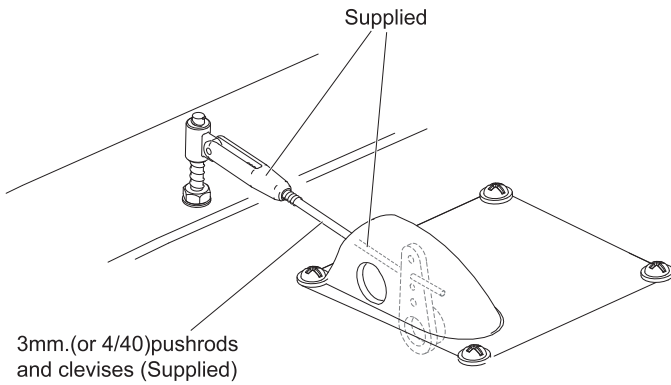
(3) Straighten the wire by gripping each side of the "Z" bend with pliers and slowly turning until the ends are in line. Now cut off the excess wire. The output hole in the servo arm may have to be drilled out to accommodate the "Z" bend wire passing through it. Adjustment of the pushrod length is carried out by adjusting the clevis along the threaded part of the pushrod.



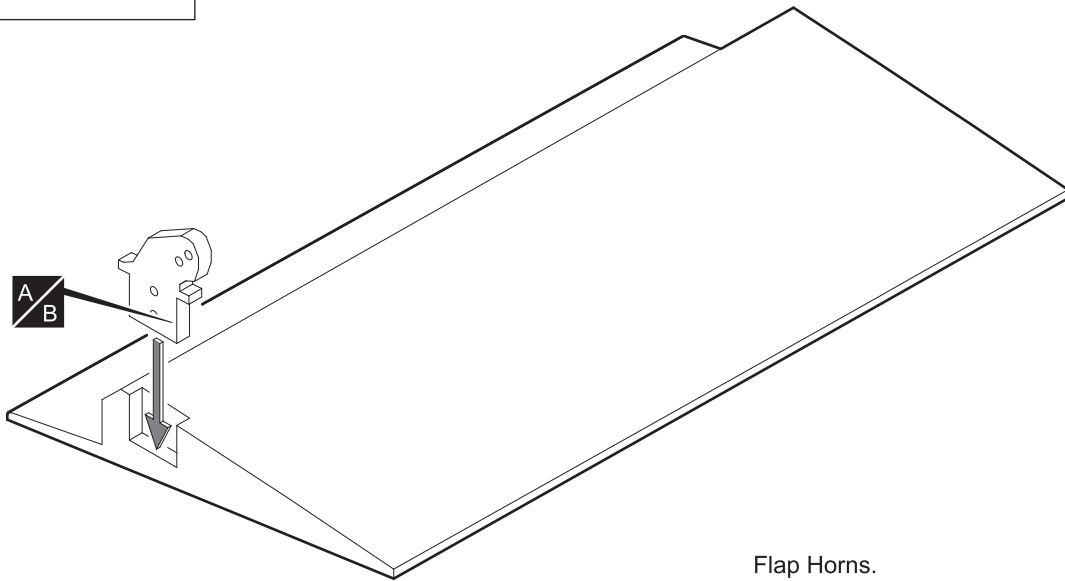
An extra pushrod is supplied to allow for possible error.

5 Aileron Servo installation

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



6 Flap



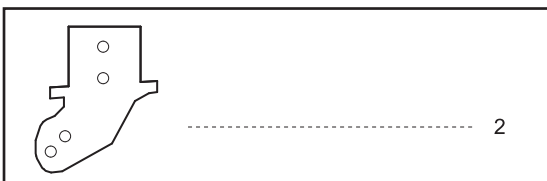
Flap Horns.
Roughen the gluing areas on the flap horns and on the flap itself. Before gluing with epoxy, drill small pilot holes in the flap, then glue and insert pins or small screws(not supplied) to hold the horn and ensure a strong joint.

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

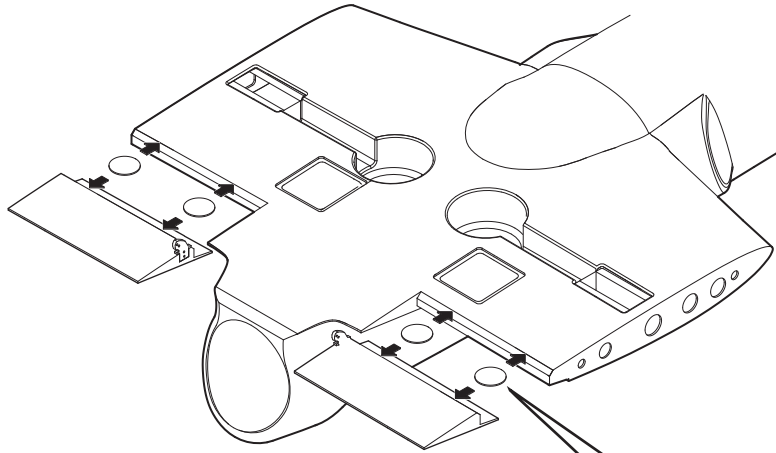


Warning!

Be sure to glue securely. This is Vital for safe flying!

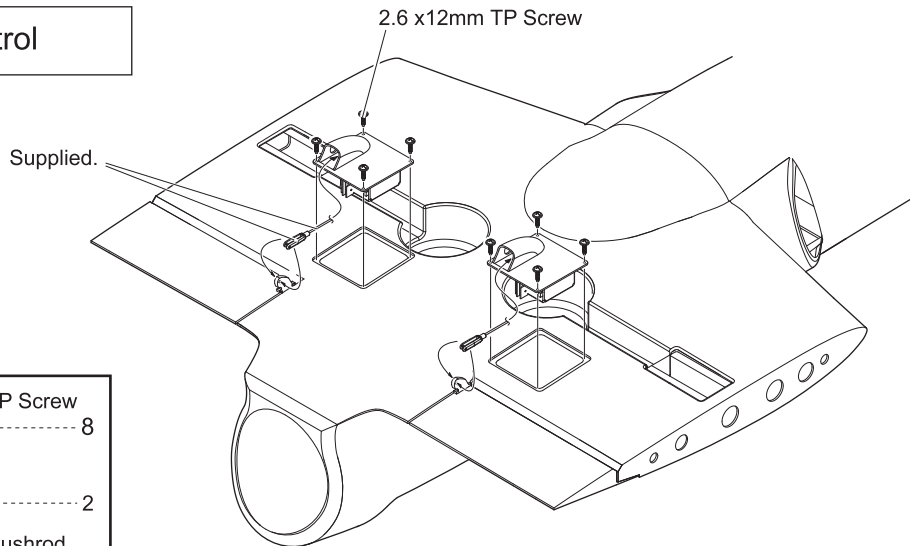



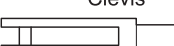
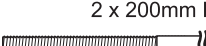
7 Flap Control



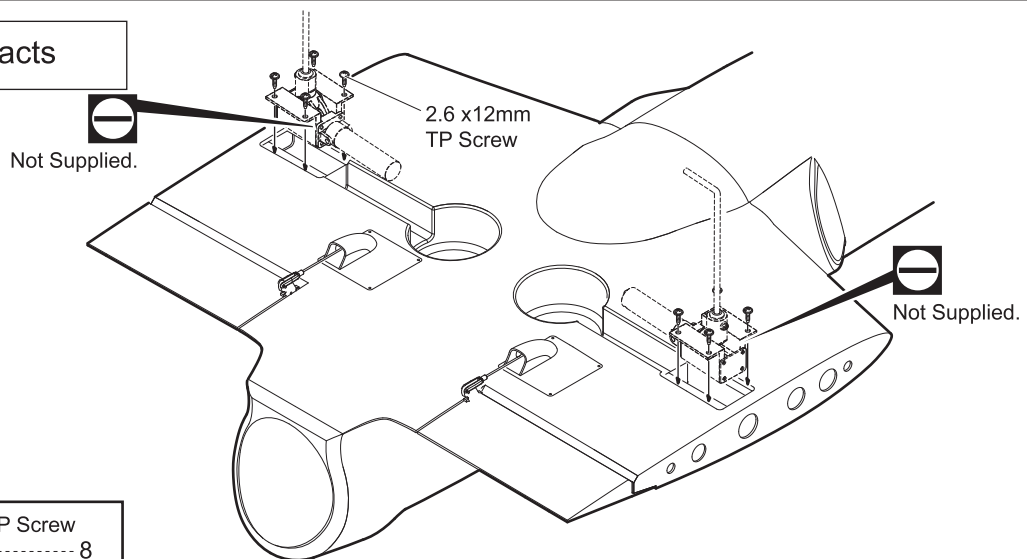
Be sure to apply instant type CA glue to both sides of each hinges. (low viscosity type)


8 Flap Control



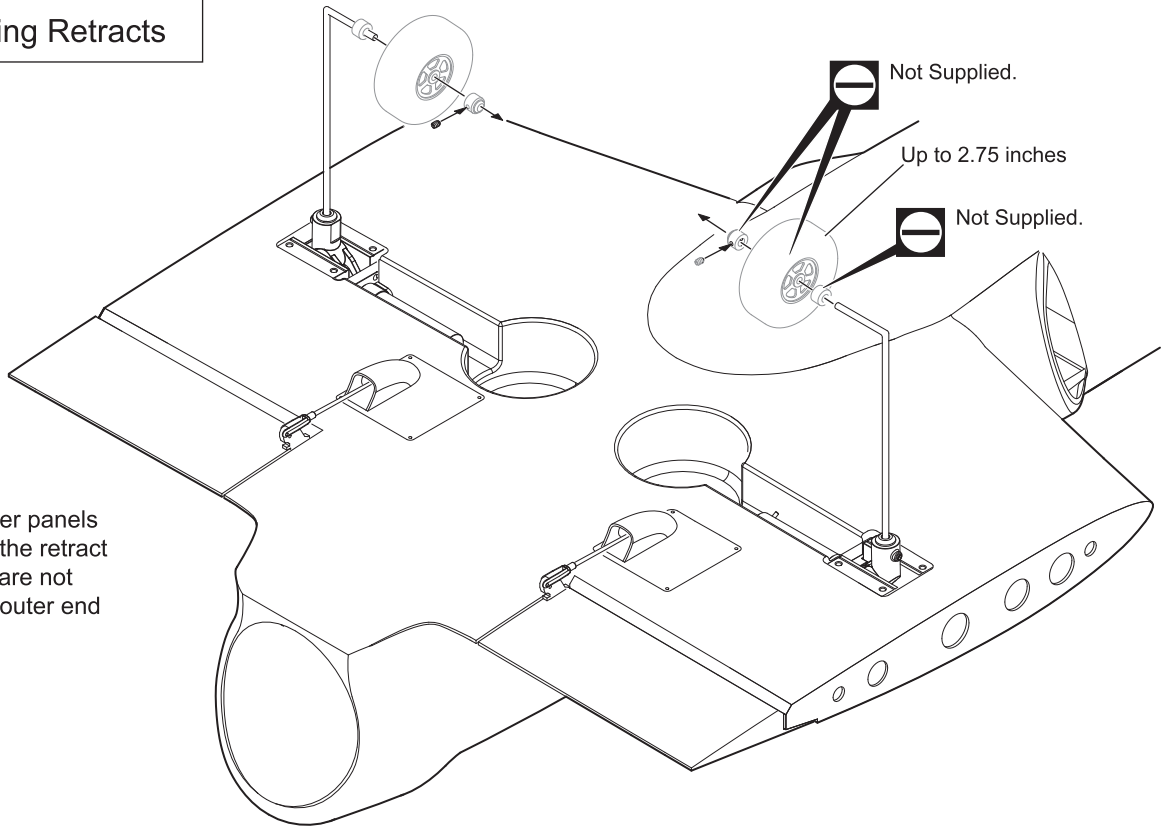
-  2.6 x12mm TP Screw 8
-  Clevis 2
-  2 x 200mm Pushrod 2

9 Main Retracts



-  2.6 x12mm TP Screw 8

10 Mounting Retracts

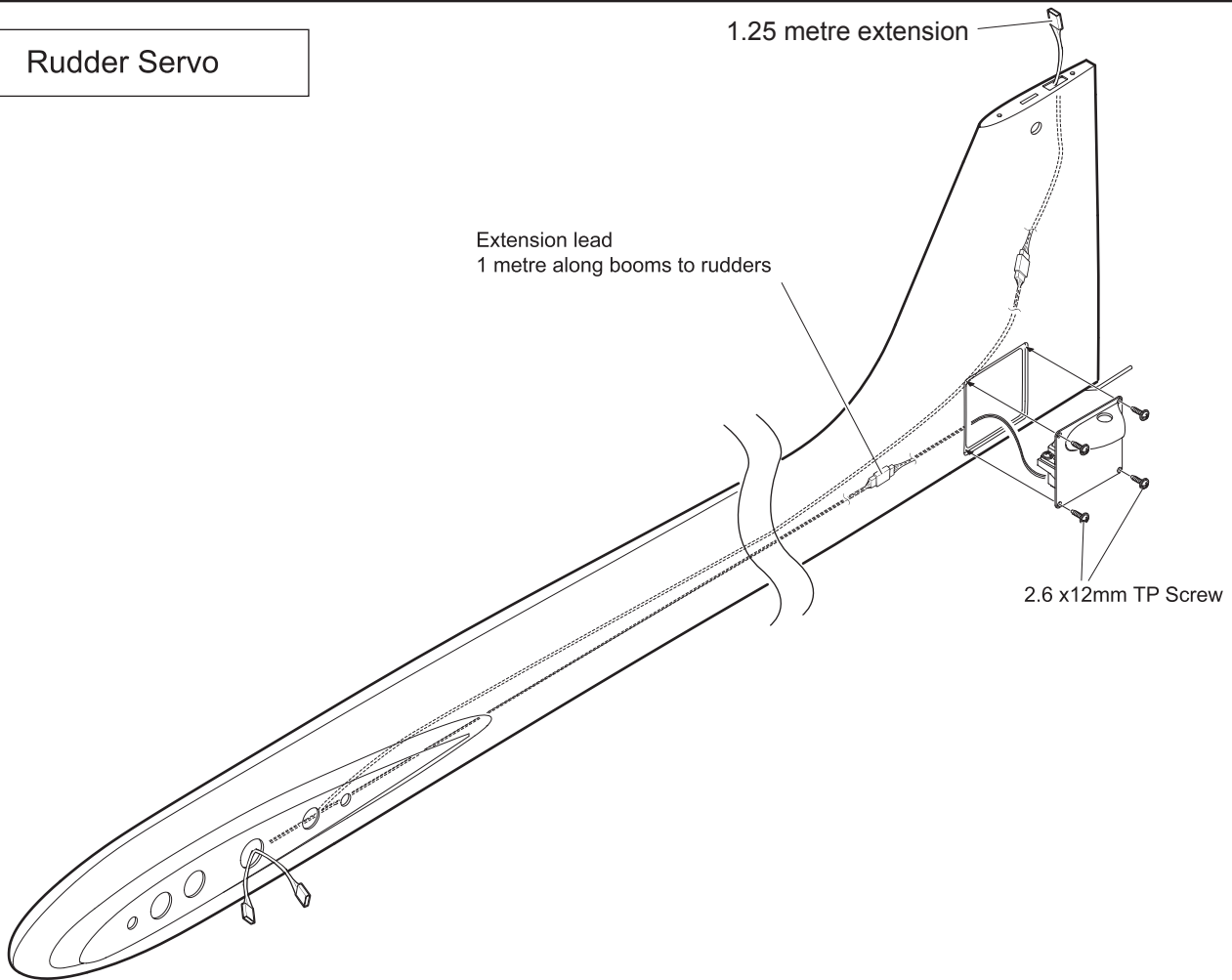


Use plywood filler panels supplied to tidy the retract wells if retracts are not mounted at the outer end of the rails.

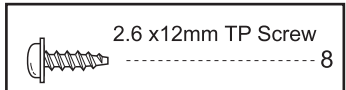
11 Rudder Servo



Rudder Servo






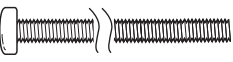
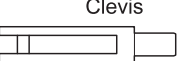
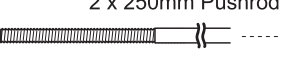
Warning! Be sure to glue securely. This is Vital for safe flying!

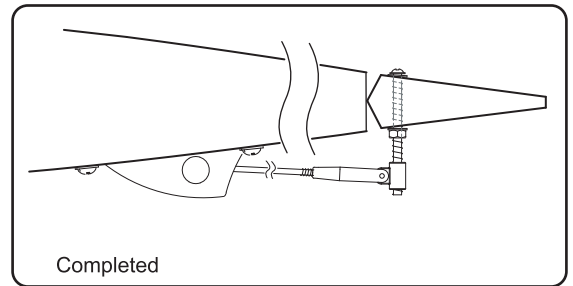
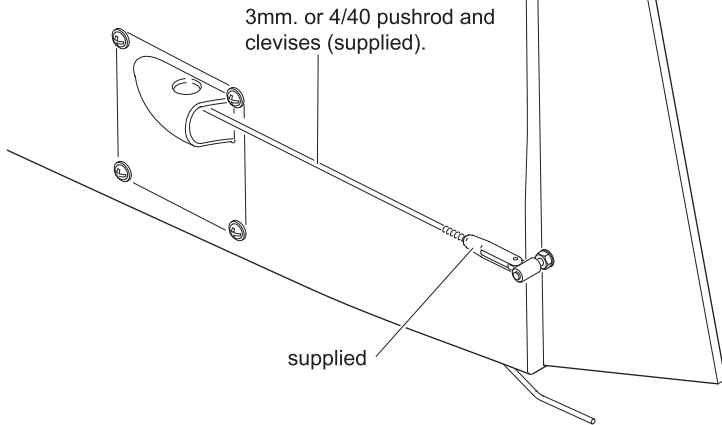
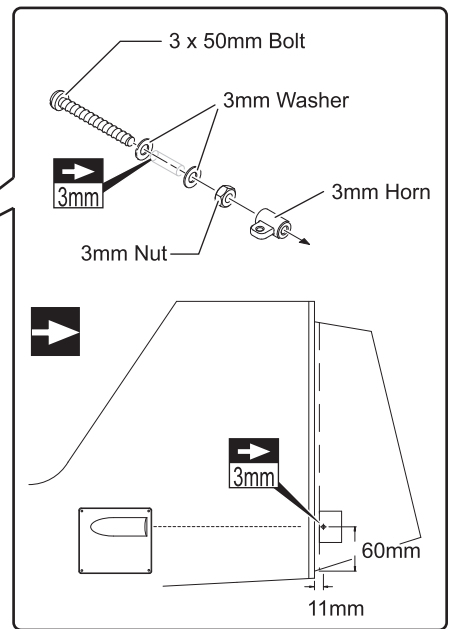
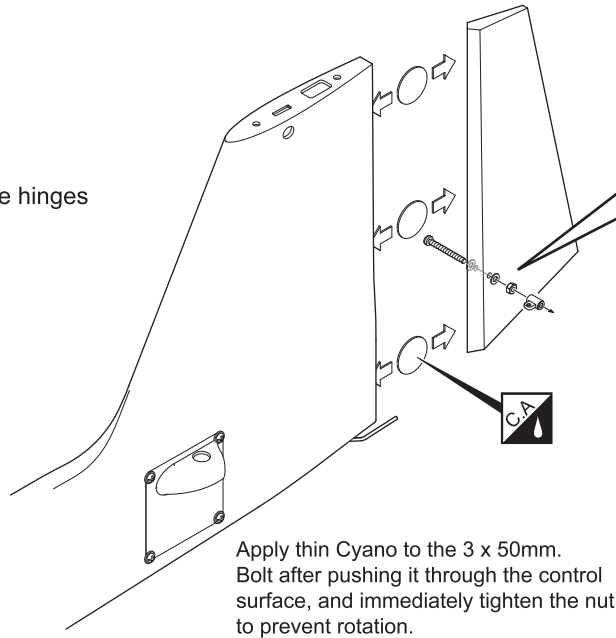


12 Rudders

L R Assemble left and right sides the same way.

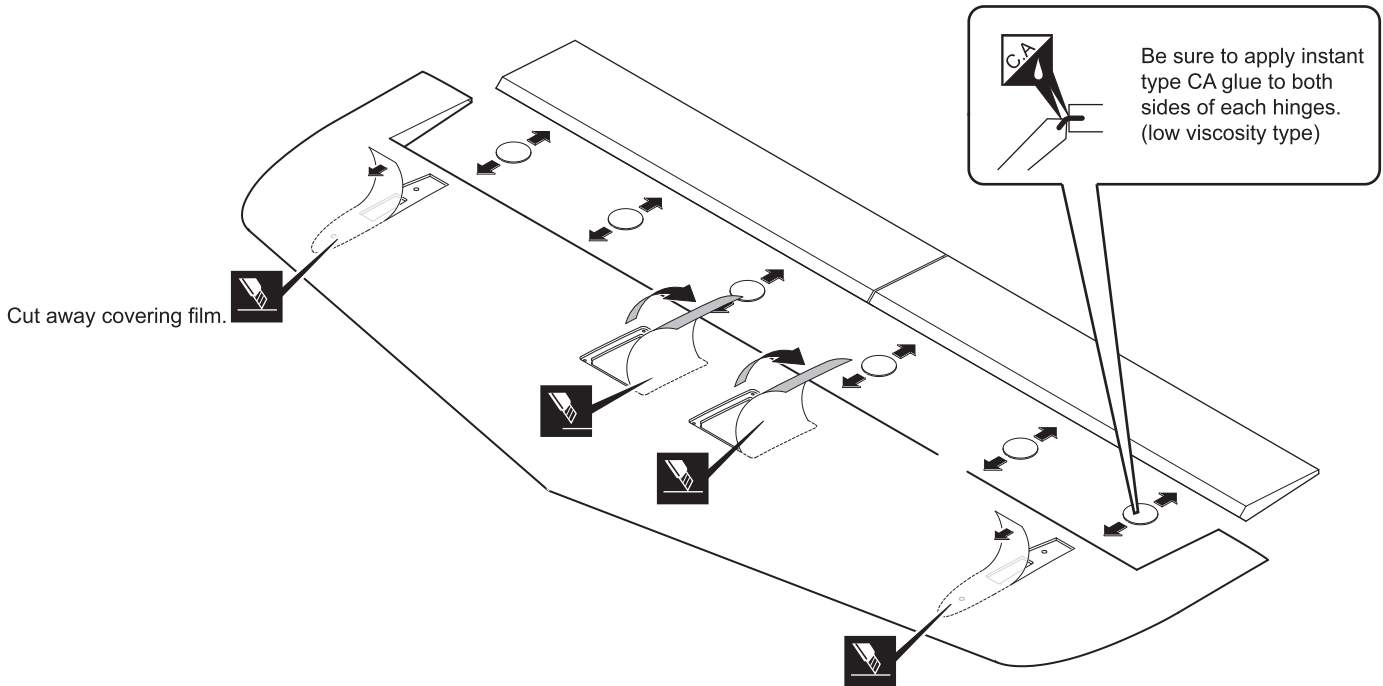
Use thin CA glue both sides of the hinges

-  3mm Horn 2
-  3mm Washer 4
-  3mm Nut 2
-  3 x 50mm Bolt 2
-  Clevis 2
-  2 x 250mm Pushrod 2

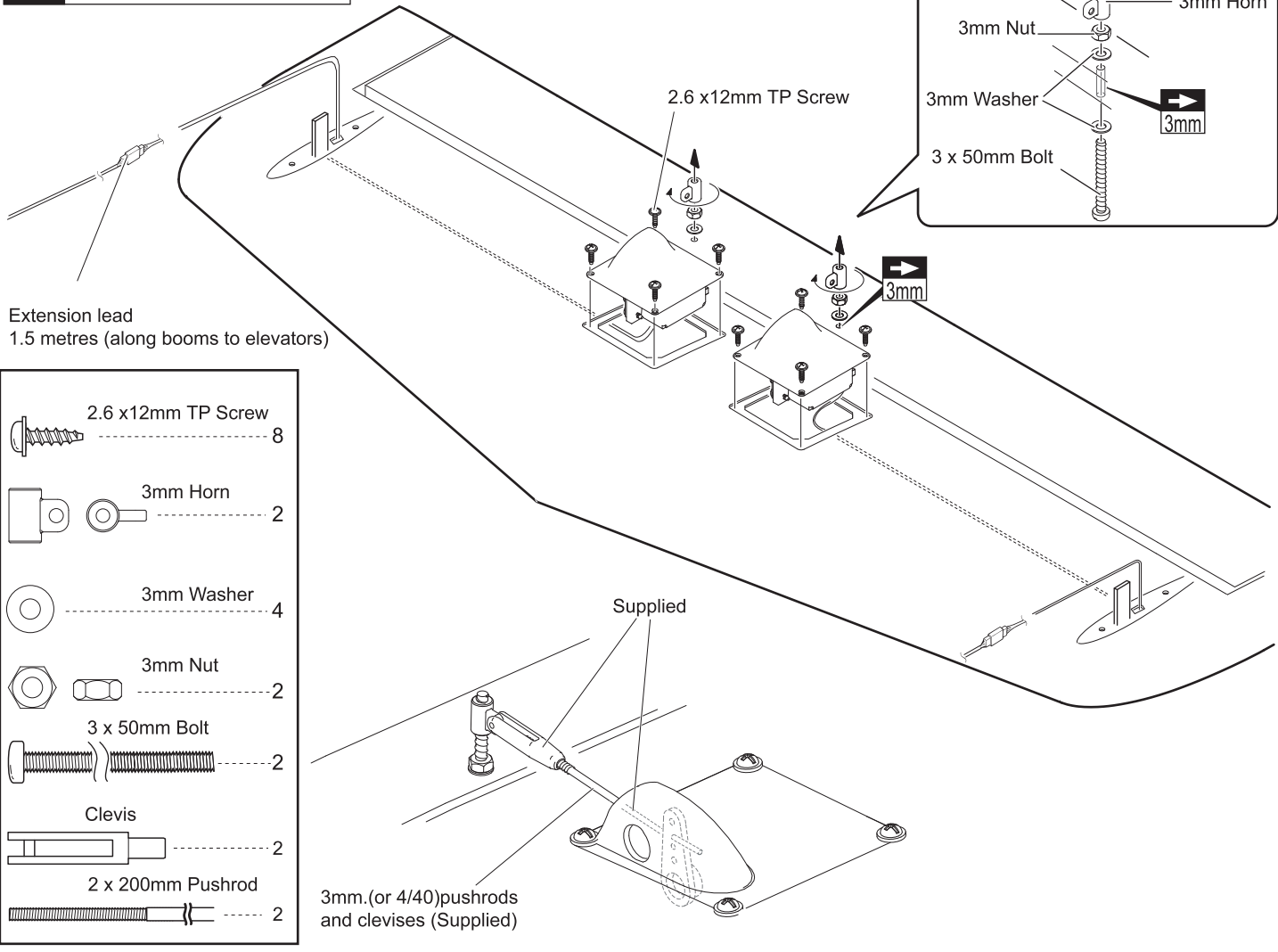


13 Tailplane/Stab




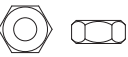

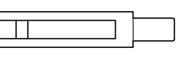

Lightly iron covering through a cloth with warm iron before cutting away covering film, (leaving 3 mm. overhang all round the servo mounts as per the wings).



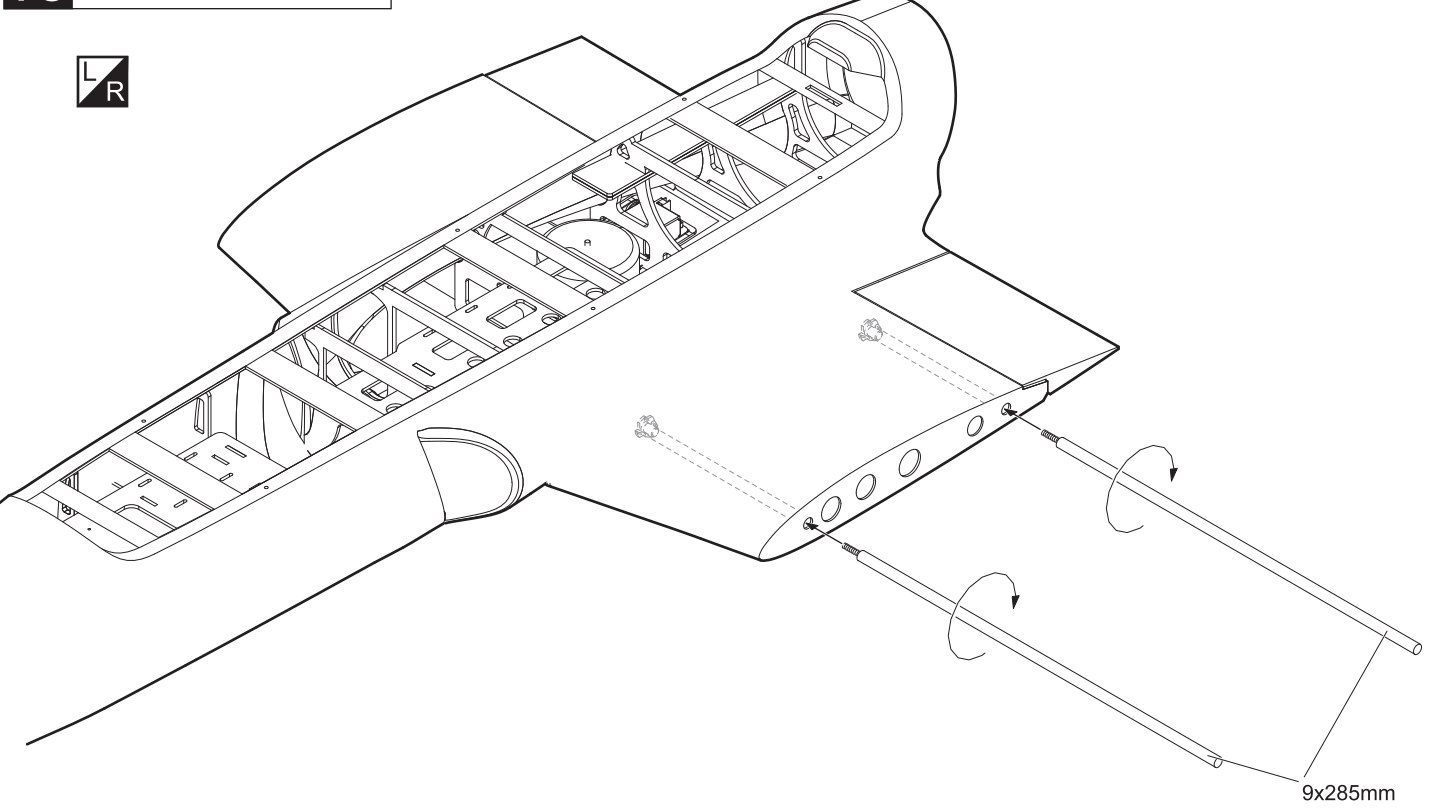
14 Tailplane/Stab



Extension lead
1.5 metres (along booms to elevators)


-  2.6 x12mm TP Screw 8
-  3mm Horn 2
-  3mm Washer 4
-  3mm Nut 2
-  3 x 50mm Bolt 2
-  Clevis 2
-  2 x 200mm Pushrod 2

15 Alloy dowels



9x285mm

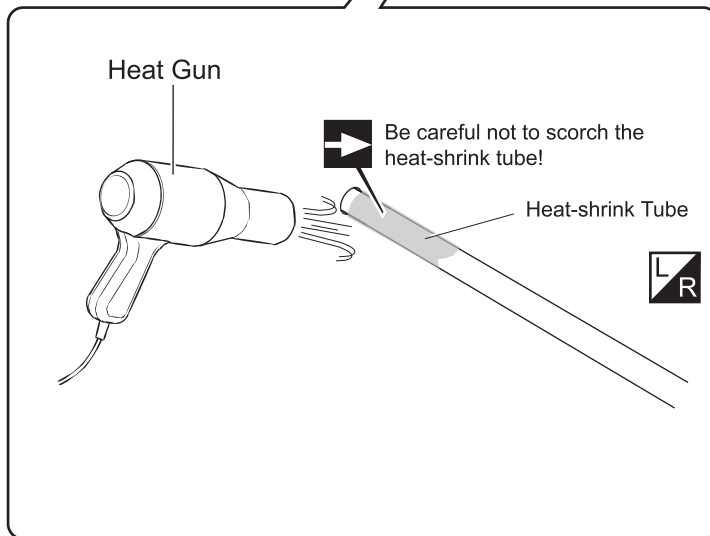
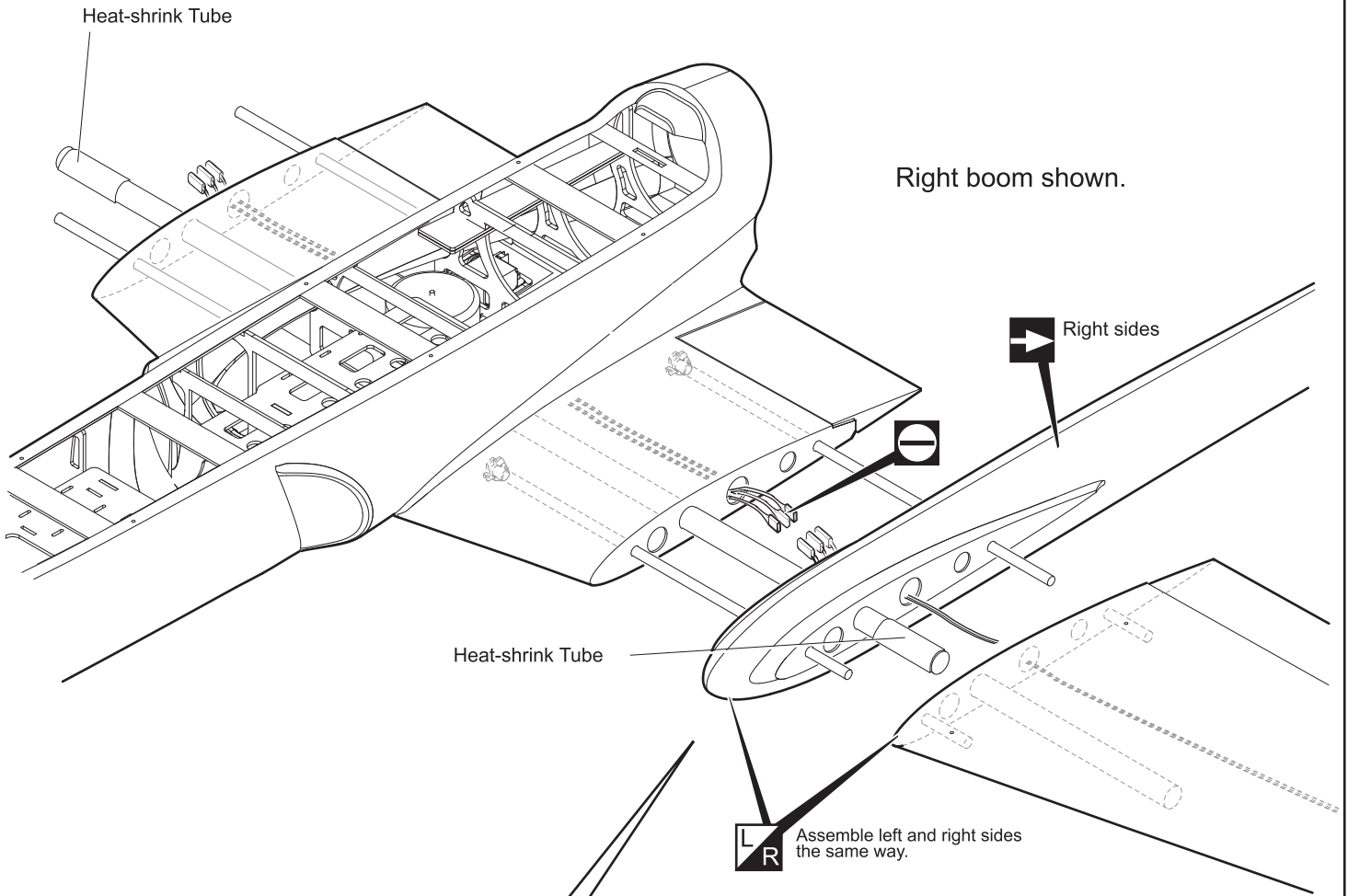
16 Assembly

 Assemble left and right sides the same way.




Adjusting the Carbon Fibre Spars.

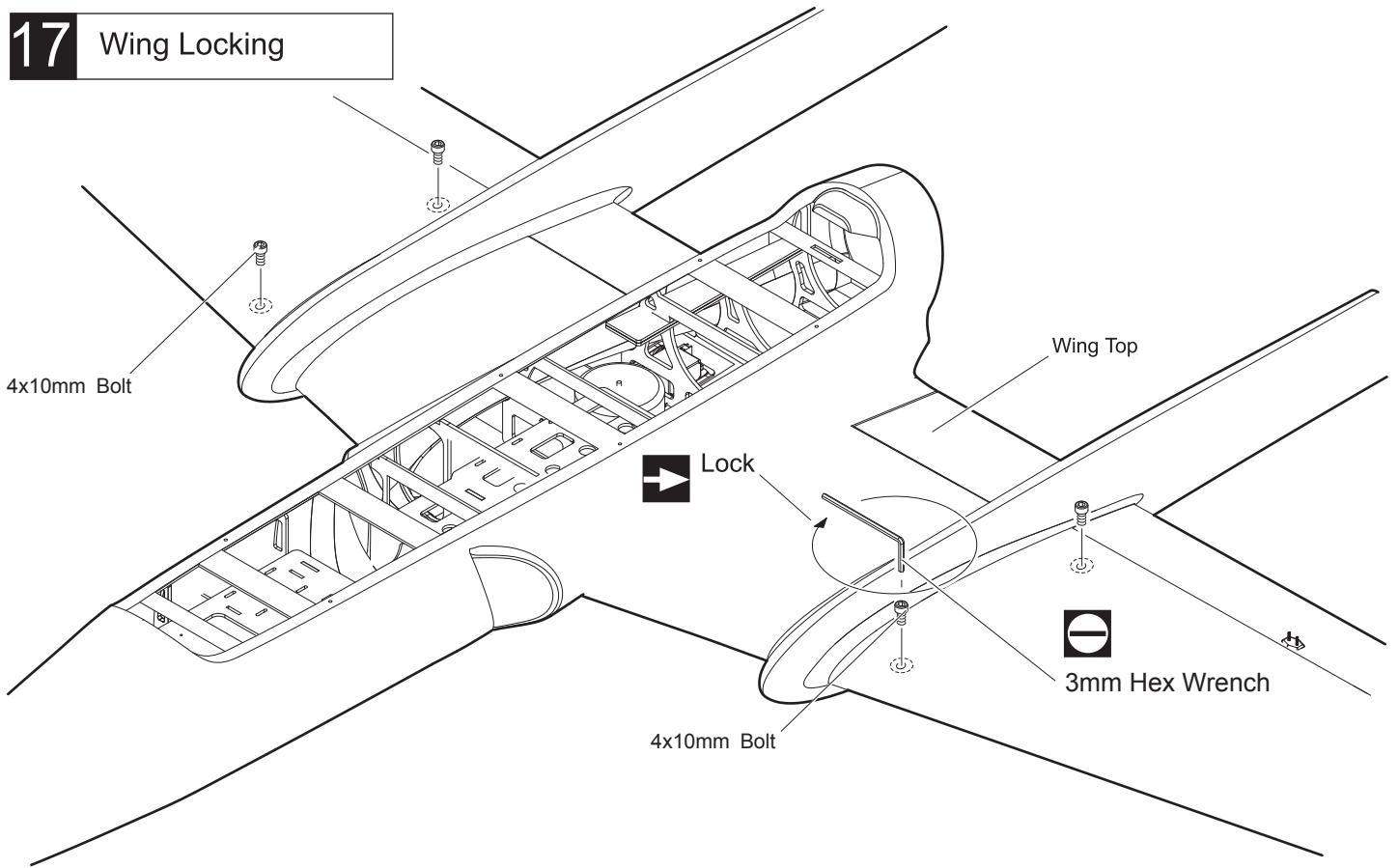
If it is necessary to adjust the fit of the C/F spars within the wings, apply the Heatshrink supplied to the spars as shown. The spars should be “snug”, but not tight.



Cut away the plywood stays across the fuselage and the hatch where they are marked. These are for packing only, not structural to the airframe.

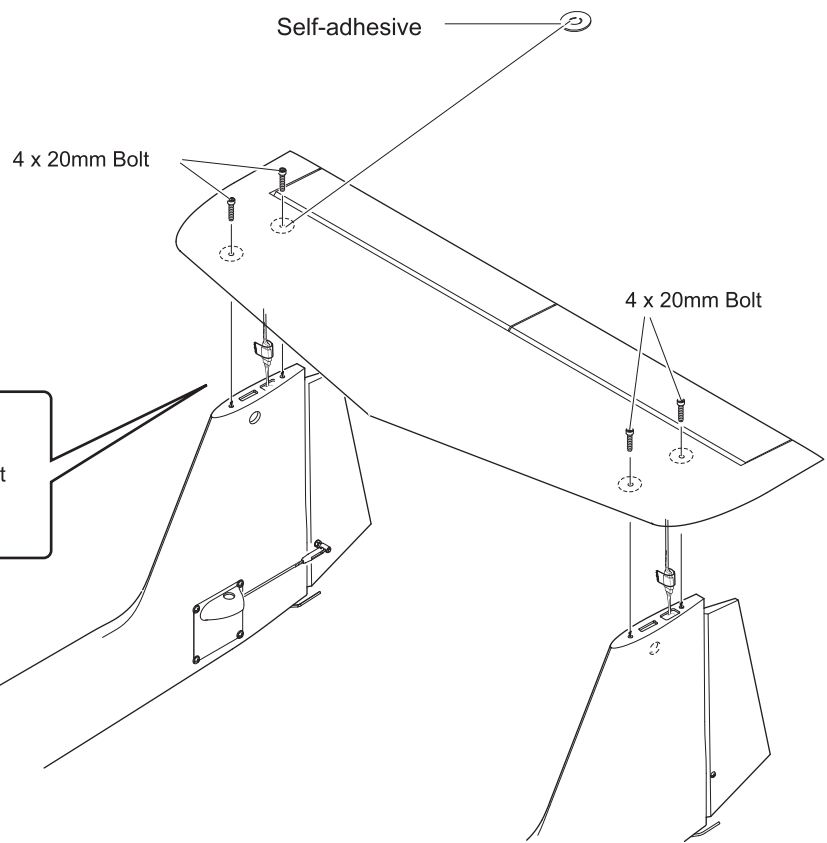
	1m x 40mm Heat-shrink Tube	----- 1
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17 Wing Locking



4x10mm Bolt 4

18 Tail Assembly



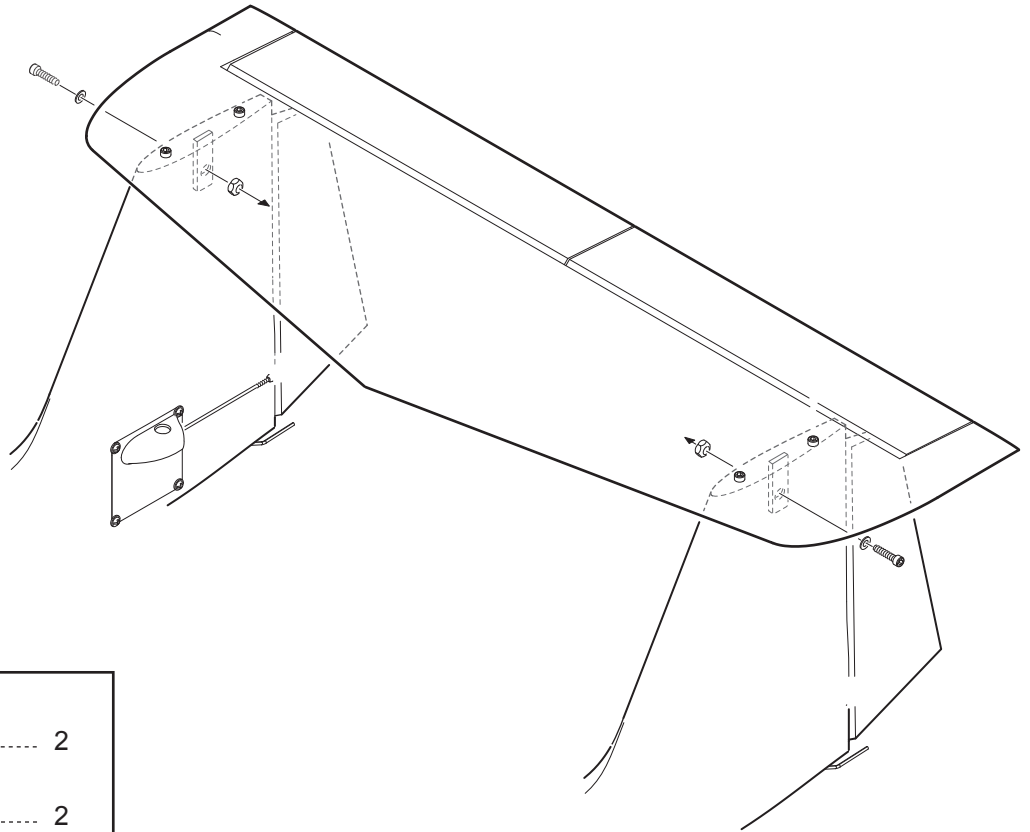
Decrease size of top exit hole after wires are through to prevent the connector falling inside the fin.




Self-adhesive 4

4 x 20mm Bolt 4

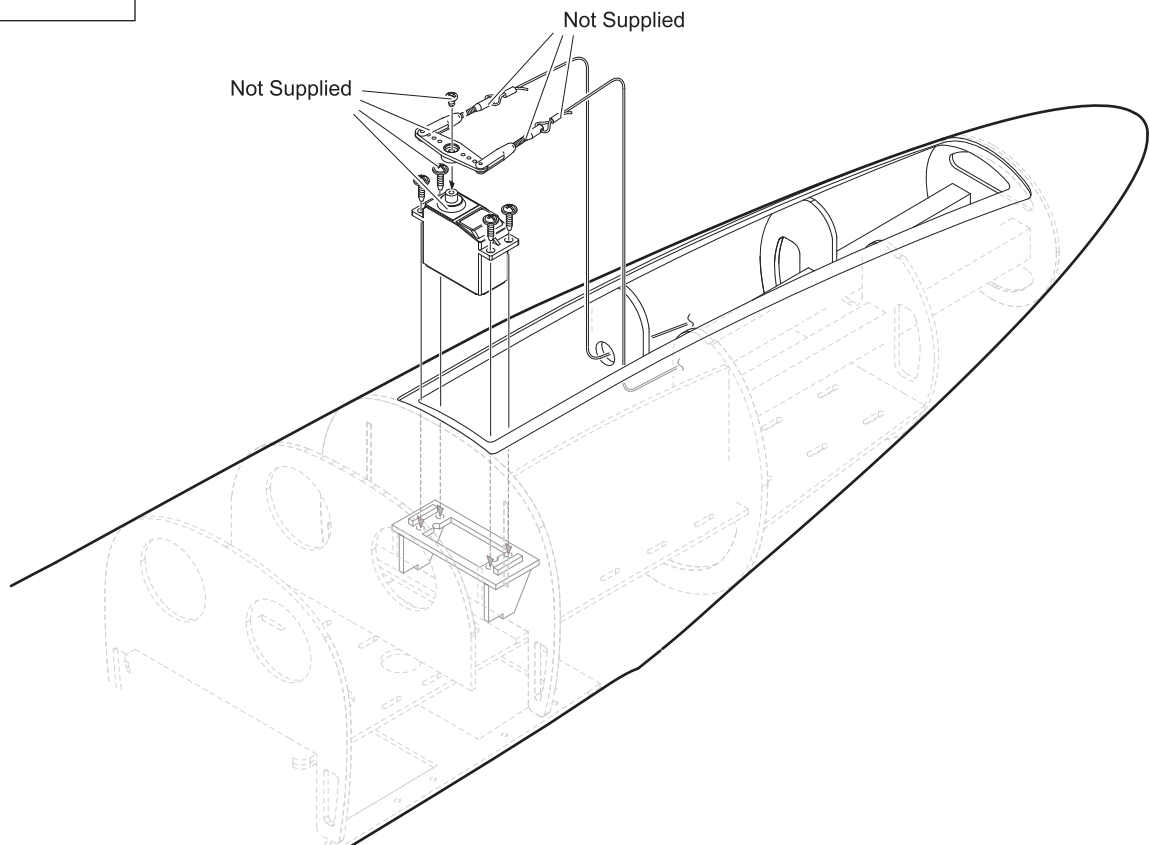
19 Additional safety fitting to stabiliser

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 X15mm 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.

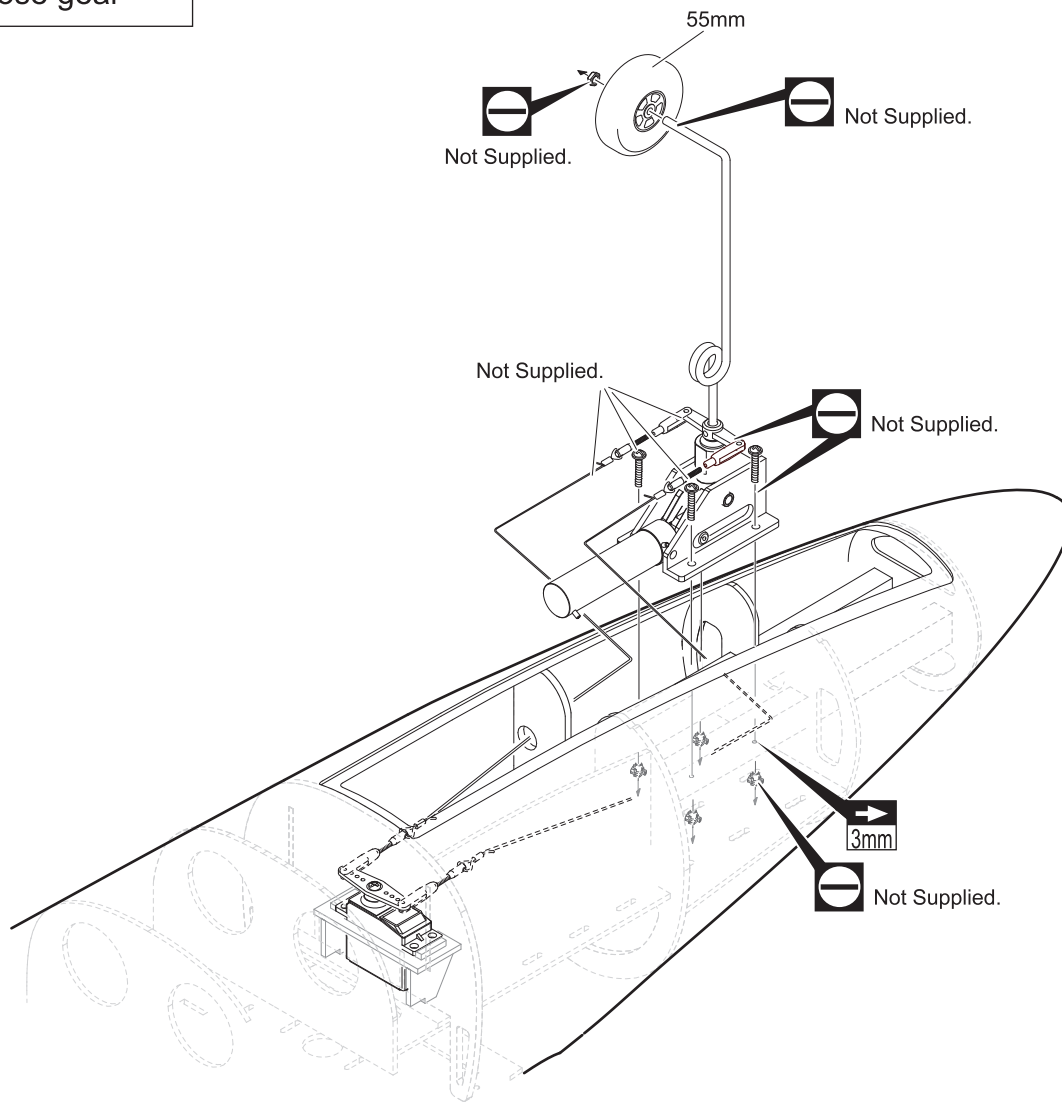


	4mm Washer	2
	4mm Lock Nut	2
	4 x 15mm Screw	2

20 Nose Servo

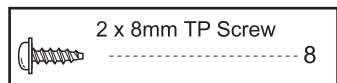
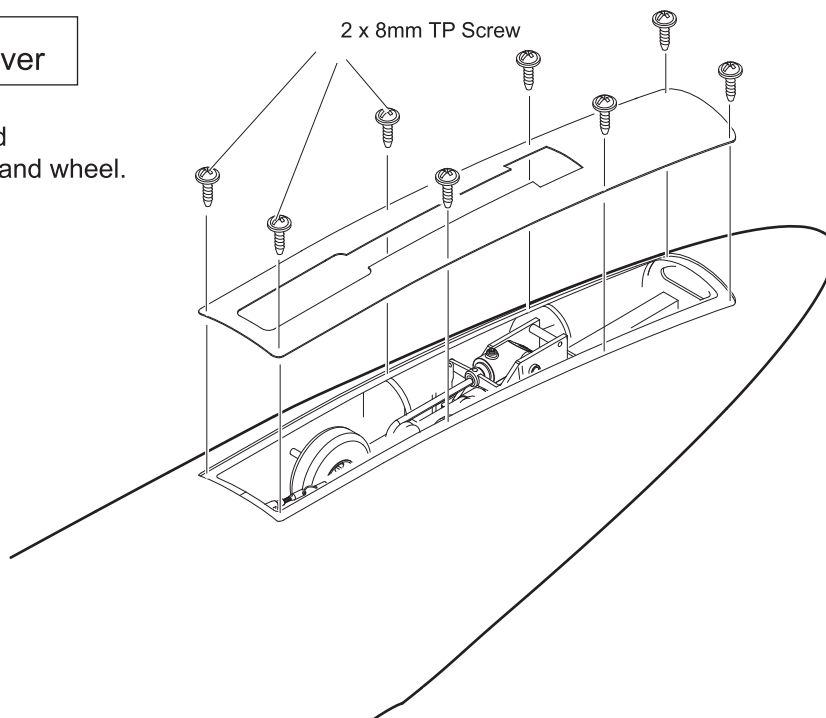


21 Nose gear

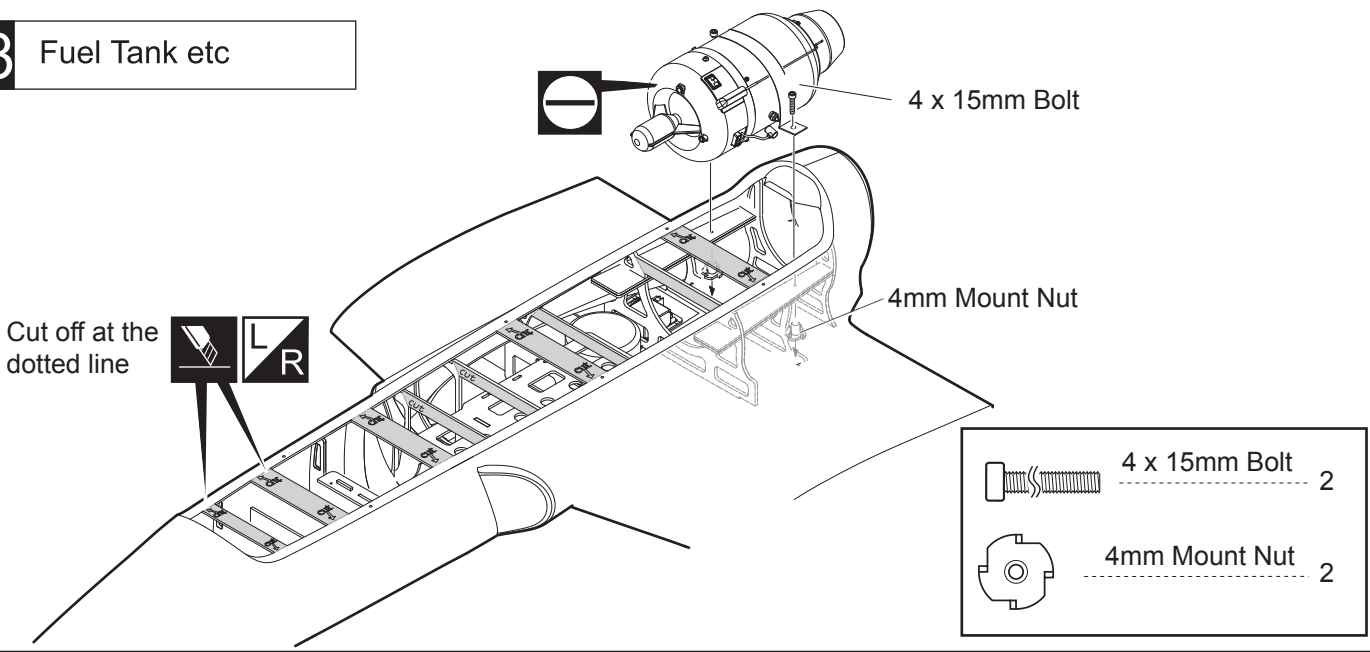


22 Noseleg Bay Cover

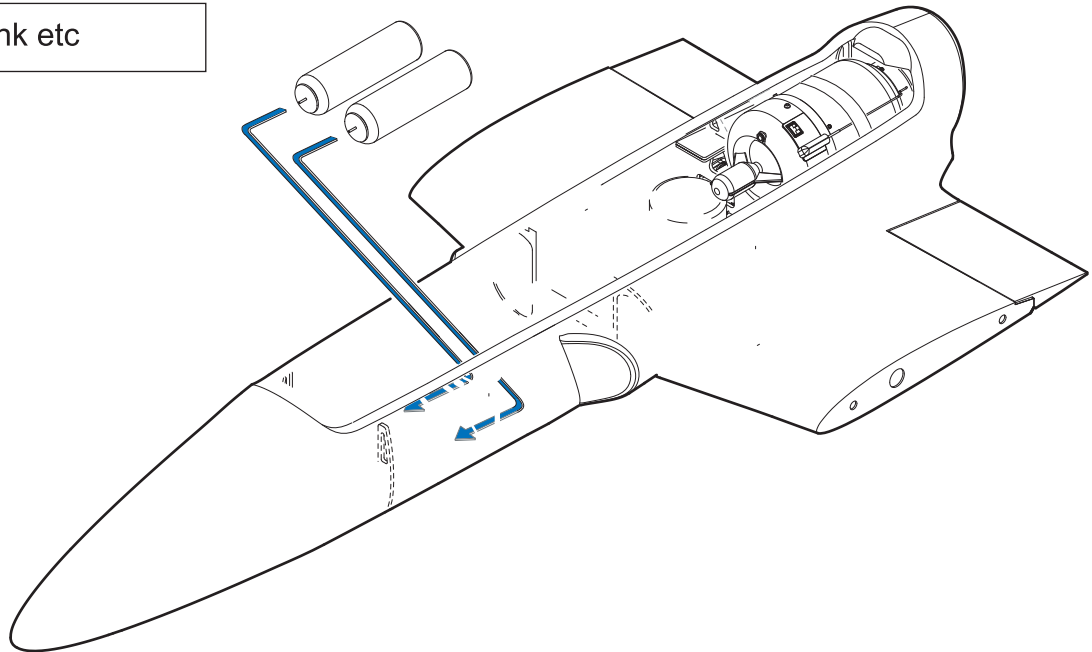
Trim the cover as required to clear the retracting leg and wheel.



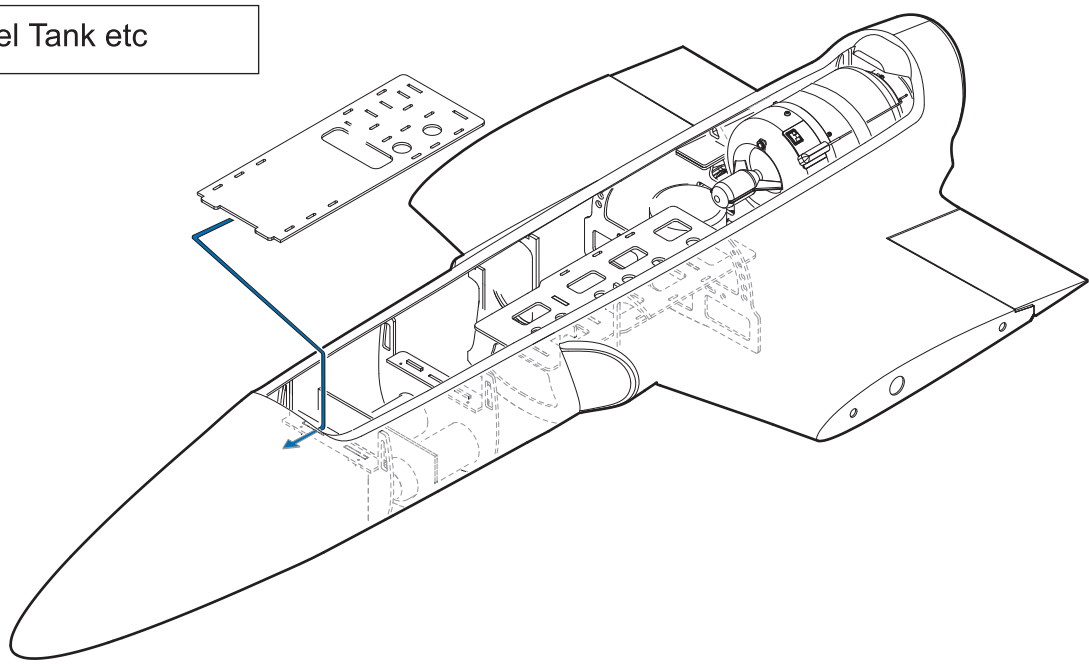
23 Fuel Tank etc



24 Fuel Tank etc

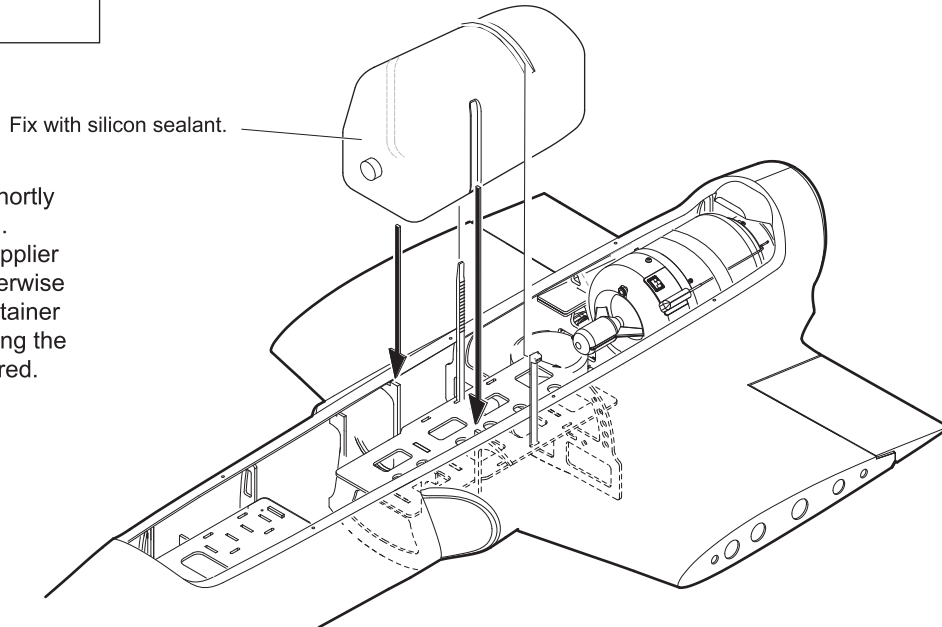


25 Fuel Tank etc



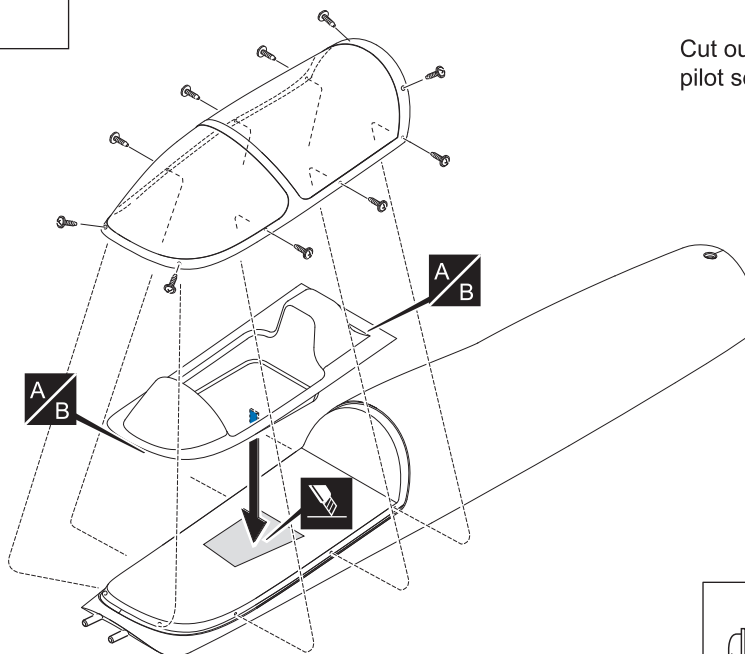
26 Fuel Tank

A moulded fuel tank will shortly be available to fit the Elan. Please contact your kit supplier regarding availability. Otherwise it is possible to fit any container from 2 litres up by modifying the fuselage formers as required.



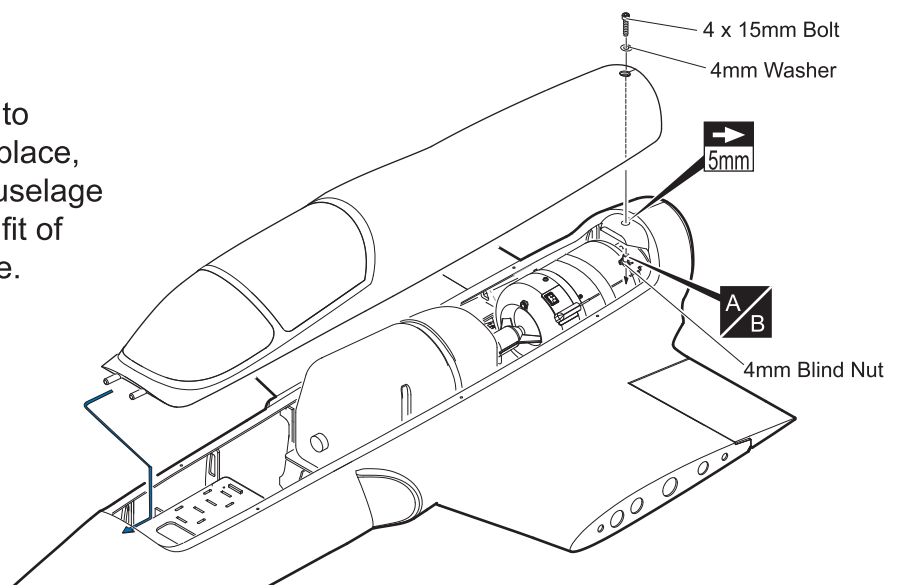
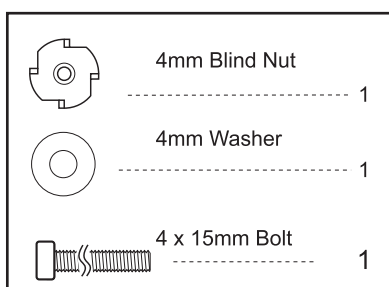
27 Cockpit/Canopy

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



28 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.



29 Setting Up

The CG for the first trimming flights should be as shown. Later you can move the CG back a small amount at a time to increase sensitivity for aerobatics. Set the travel to the values shown below. These can be adjusted later to suit your flying style. Mount the control horns so that the hole for the clevis is at 5 mm. behind the hinge line on the ailetons to provide differential, 10 mm. behind the hinge line for the flaps to maximise movement, and close to the hinge line for the rudders and elevators.



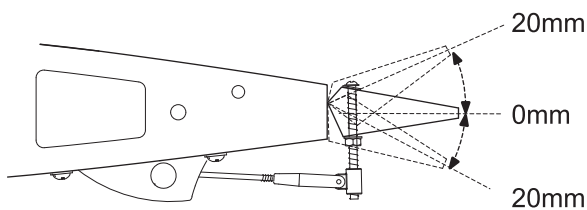
Set the travel to the values show below for the first flights. You can increase these later for aerobatics if desired.



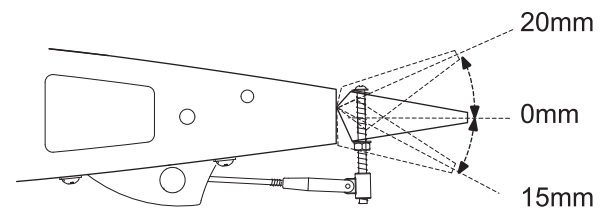
Carefully install the receiver and battery pack to ensure that they will not shift during flight.



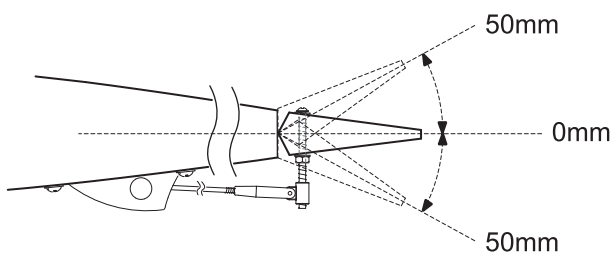
Shift the location of the receiver and battery pack as needed to obtain the specified CG.



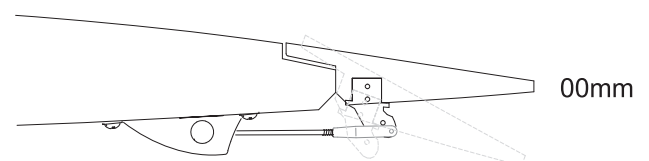
ELEVATOR



AILERON



RUDDER



FLAP



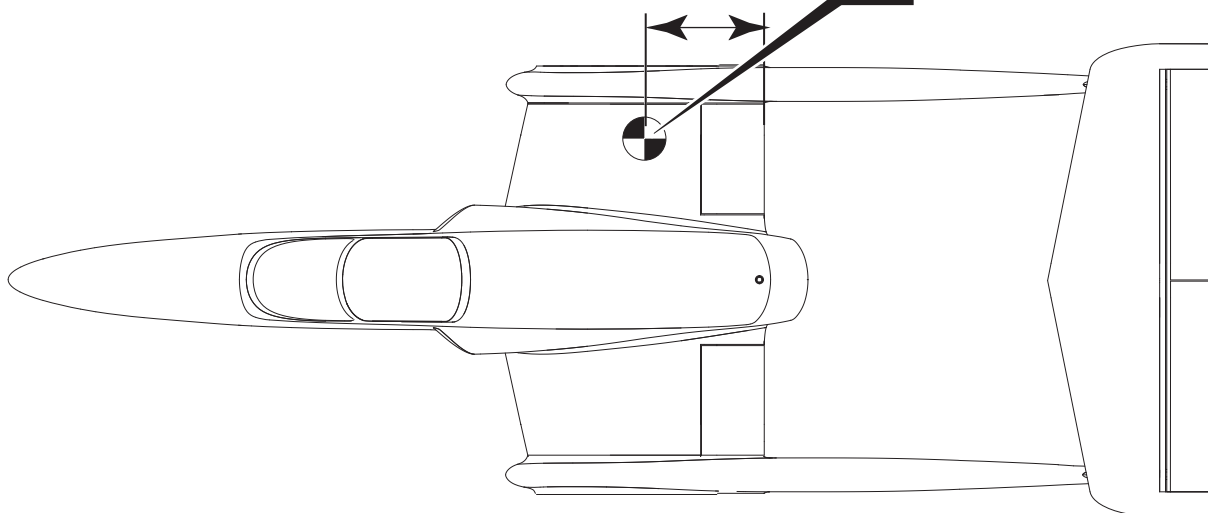
For first trimming flights CG should be as shown. Later you can move the CG back a small amount at a time to increase sensitivity for aerobatics.

Flap should drop as near to 90 degrees as possible.

250 mm. from Trailing Edge.
Dry, with wheels down.



CG



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 to 15 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.