



Instruction Manual PC 21



Before you get start building and setting up your aircraft, please make sure you have read this manual and understood it.

If you have any question, please don't hesitate to contact your dealer. Below are the contact list

Email: kingtechturbine@gmail.com

Liability Exclusion and Damages

You have acquired a kit, which can be assembly into a fully working R/C model when fitted out with suitable accessories, as described in the instruction manual with the kit

However, as manufacturers, we are not in a position to influence the way you build and operate your model, and we have no control over the methods you use to install, operate and maintain the radio control system components. For this reason we are obliged to deny all liability's for loss, damage or cost which are incurred due to the incompetent or incorrect application and operation of our products, or which are connected with such operation in any way.

This applies to personal injury, death, damage to buildings, loss of turnover and business, interruption of business or other direct and indirect consequent damages. In all circumstances our total liability is limited to the amount which you actually paid for this model.

BY OPERATING THIS MODEL YOU ASSUME FULL RESPONISBILITY FOR YOU ACTIONS.

It is important to understand that JMB is unable to monitor whether you follow the instructions contained in this instruction manual regarding the construction, operating and maintenance of the aircraft , nor whether you install and use the radio control system correctly .For this reason we are unable to guarantee, or provide, a contractual agreement with any individual or company that the model you have made full function correctly and safely. You, as operator of the model, must rely upon your own expertise and judgment in acquiring and operating this model.

Attention !

This aircraft is a high end product and can create an enormous risk for both pilot and spectators .

If not handled with care& used according to the instructions.

Make sure that you operate your PC21 according to the laws and regulations from the governing model flying in the country of use. The engine, landing gear, servo, linkages and control surfaces have to be attached properly. Please use only the recommended servos and accessories. Make sure that the Centre of Gravity's is located in the recommended place. Use the nose heavy end of the CG range for your first flights. A tail heavy plane can be an enormous danger for you and all spectators. Fix any weights and heavy items like batteries , very securely into the plane. Make sure that the plane is secured properly when you start the engine. Have a helper hold your plane from the nose before you start the engine. Make sure all spectators are far behind, or far in front of the aircraft when running up the engine. Make sure that you range check your R/C system thoroughly before the 1st flight. It is absolutely necessary to range check your complete R/C installation first WITHOUT the engine running. Leave the transmitter antenna retracted or incase of 2.4ghz depress the range check button and check the distance you can walk before FAILSAVE occurs. Then start the engine, run at about half a throttle and repeat the range check. Make sure that there is no range reduction before FAILSAVE occurs. If the range with engine running is less then with the engine off, please don't fly at that time. Check that the wing and stab retaining bolts are tight and that all linkages are secured. Please don't ignore our warnings, or those provided by other manufactures. They refer to things and processes which, if ignored could result in permanent damage or fatal injury.

Important/General Notes

Servo Choice

We strongly advise that you use the recommended servos and equipment listed in the manual.

Building Sequence

The actual building sequence is your choice but it is usually most efficient to start at the back of the fuselage and work forwards.

Did you read the hints and warnings above and the instruction carefully? Did you understood everything in this manual completely ?

Then and only then, let's start assembling your JMB PC 21, If not please read it again before you continue.

Accessories

This list will help you chose the main additional items needed to finish your PC21.

1. Servos 7 high quality Servos all the main control surfaces require a minimum of 15 kg torque
2. Aluminum servo horns or CFK . I use the one from Gabriel-stahlformenbau.de
7 x 992904 Servohorn
7 x CFK Horn 5/20 992710 with 3 mm ballink
1. A receiver power supply such a Powerbox Evolution or Cockpit
2. Turboprop such as Kingtech K45/60 or SPT5 Jetcat

There will be a set of 3D printed parts available such as Linkage fairing, Connector holder, Tube guiding, scale parts. Please contact your dealer regarding order.

How to Glue the Plastic Hinge in



My Personal favorite
are the UHU Endfest 300,
I do not recommend to use
any 5 min Epoxi for this work step.



Fill the Hole on one side with the
mixed glue, you can use a Siring
or just a small Wood to fill it up a bit,
if the glue goes around 5mm in to the
hole is enough.



Apply on the Plastic hinge until half
way around also Glue and push the hinge in .

How to Glue the Plastic Hinge in



Repeat this Work until all hinges are in, Make sure the Orientation of the hinge is 90 degree to the hinge line.



Apply on the plastic hinge until half way around also Glue same you did already on the opposite side.

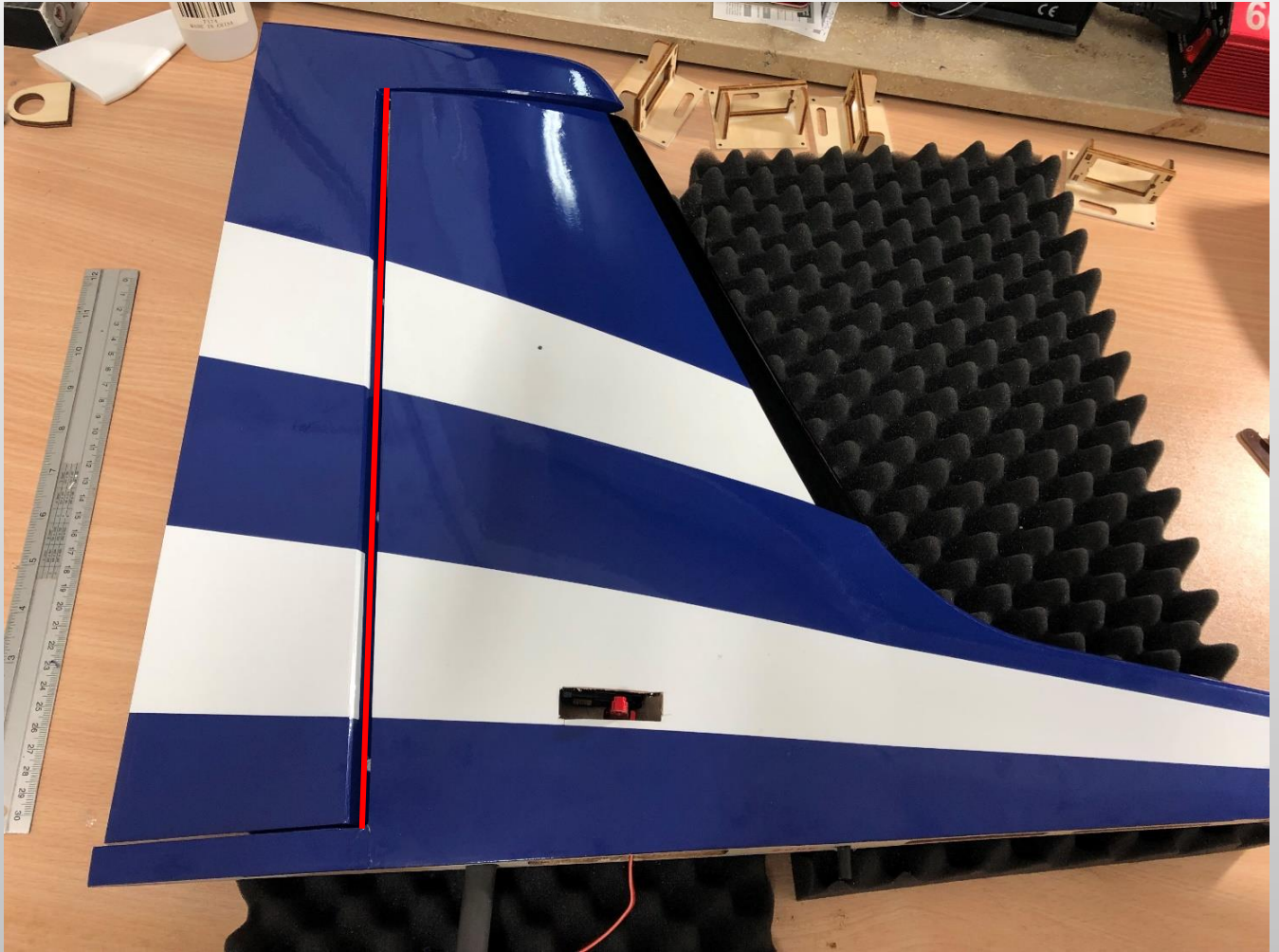


Fill the Hole on one side with the mixed glue, you can use a Siring or just a small wood to fill it up a bit, if the glue goes in around 5mm to the hole is enough then push all the hinge's in.

Notice , clean around if the Glue squishing out and keep a 1 mm gap between both parts

How to Glue the Plastic Hinge in

1mm Gap



How to Glue the CFK Horns in



I've decided to use these horns because they look much nicer than the ones which come with the kit.

The order number you can find on Page 4.



Mark the right position and drill 2 x 5,5 mm holes, be careful that you not going to drill all way through the Part! after remove the Cover film. Fill the holes with Glue apply also a bit on the flat surface and push the Horn in.

Fin



Mount the Servo, the output shaft face to the leading-edge.

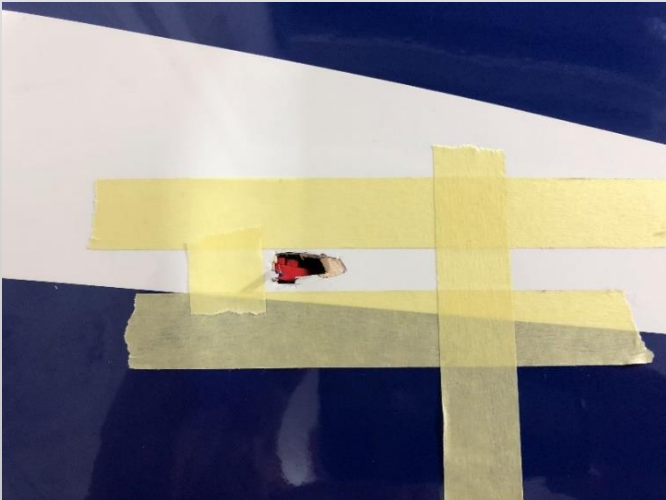


Now push the Servohorn against the Balsa blanking, you can feel now
On the outside where you have to start cutting the hole .

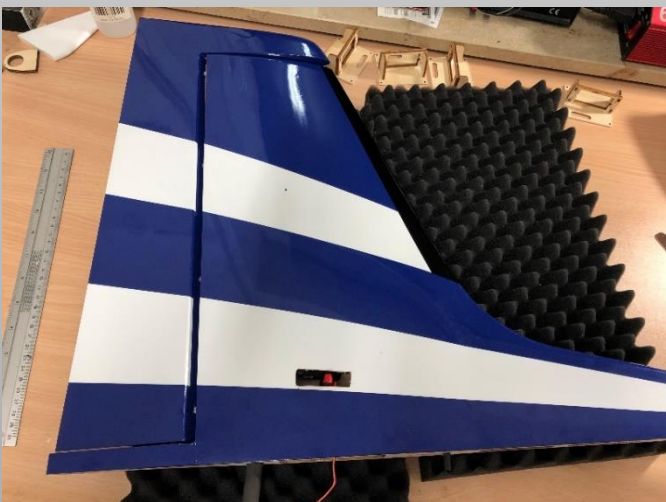
Vertical Stabilizer



Start with a small hole and make sure You are on the right Spot.



Open the Hole until you can see the Horn. Use tape for mark the size of The slot



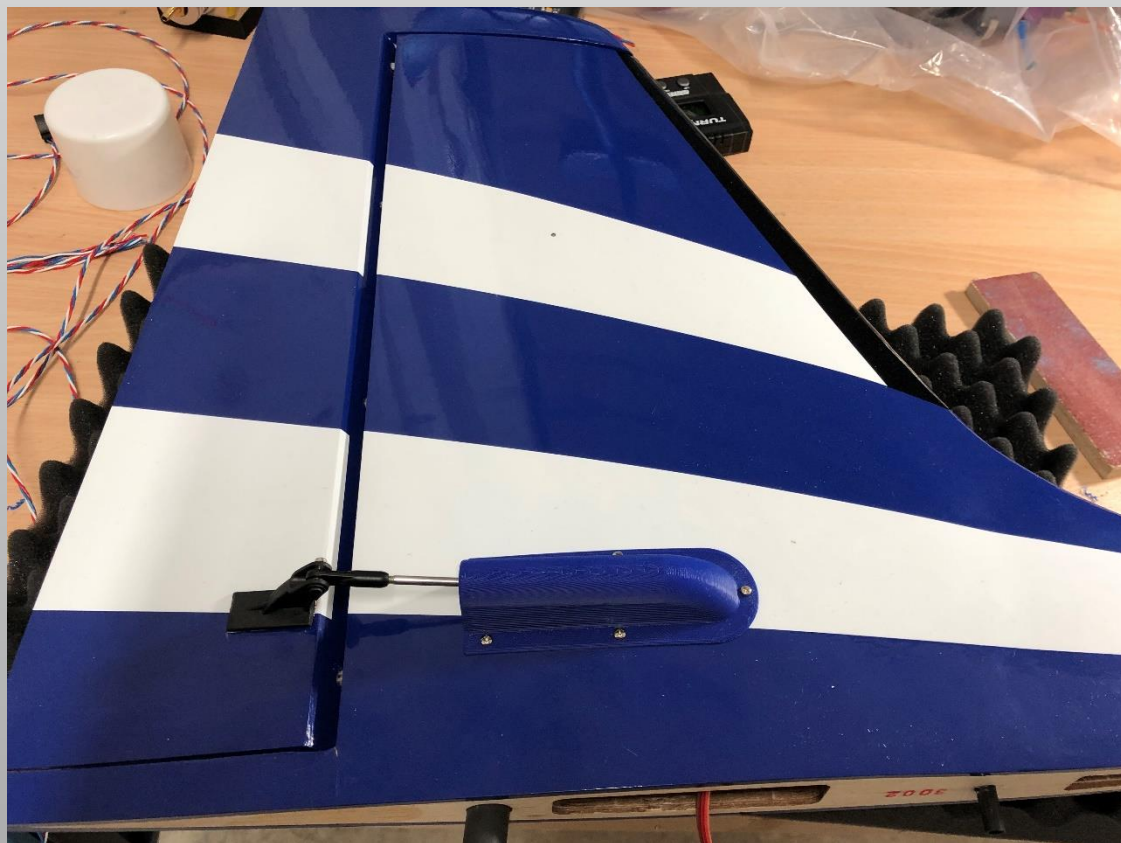
Vertical Stabilizer



Glue the CFK Horn like you see on Page 8.

Finish the Linkage , I use a 3mm Threaded rod because the Linkage Supplied in the Kit was not usable

Mount the Servohorn cover by glue or Screwing
(The cover set you can buy separate)



Horizontal stabilizer



Mount the Servo the output shaft face to the trailing-edge.



Glue the CFK Horn in like you see on Page 8.



Finish the Linkage , I use a 3mm Threaded rod because the Linkage Supplied in the Kit was not usable

Horizontal stabilizer



Mount the Servohorn cover by
Glue or Screwing
(The cover set you can buy separate)



I face the
problem that one
Stab are not align
properly.
It mean there
was a gap from
around 5 mm on
the front pin, so I
decide to modify
the mounting by
add 2 screws .

Horizontal stabilizer



First I open the front pinhole to the size of 3 x 15 mm. this area is reinforced With plywood from inside.
the same you have to do on the stab side
I cut from GFK sheet (CFK or similar Is also ok) a strip with 115 x 15 mm
After I glued it in to the fuselage

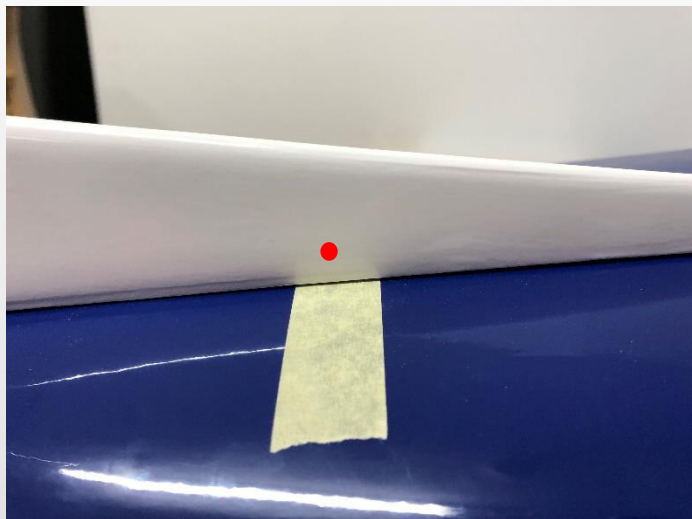


The tongue should look out 15mm

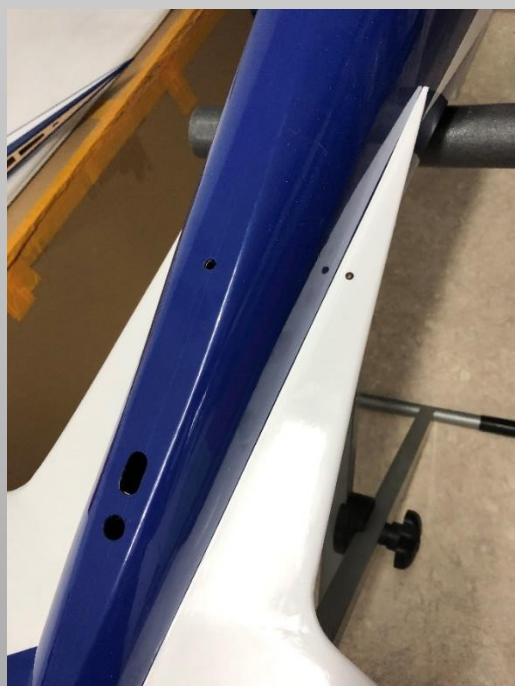


Mark the Position of the tongue
With a piece of tape and slide the
Stab on

Horizontal stabilizer



Drill a hole with 2,5mm through all
Remove the Stab and cut a M3 thread
in the tongue.
In the stab you need to drill a 3mm hole



Now the Stab fit perfect



Wing



After you finish gluing the Aileron and Flap hinges in you can start to assemble the Servos on the Hatches.



All Servos need to assemble like that the Servo output shaft face to the trailing edge.



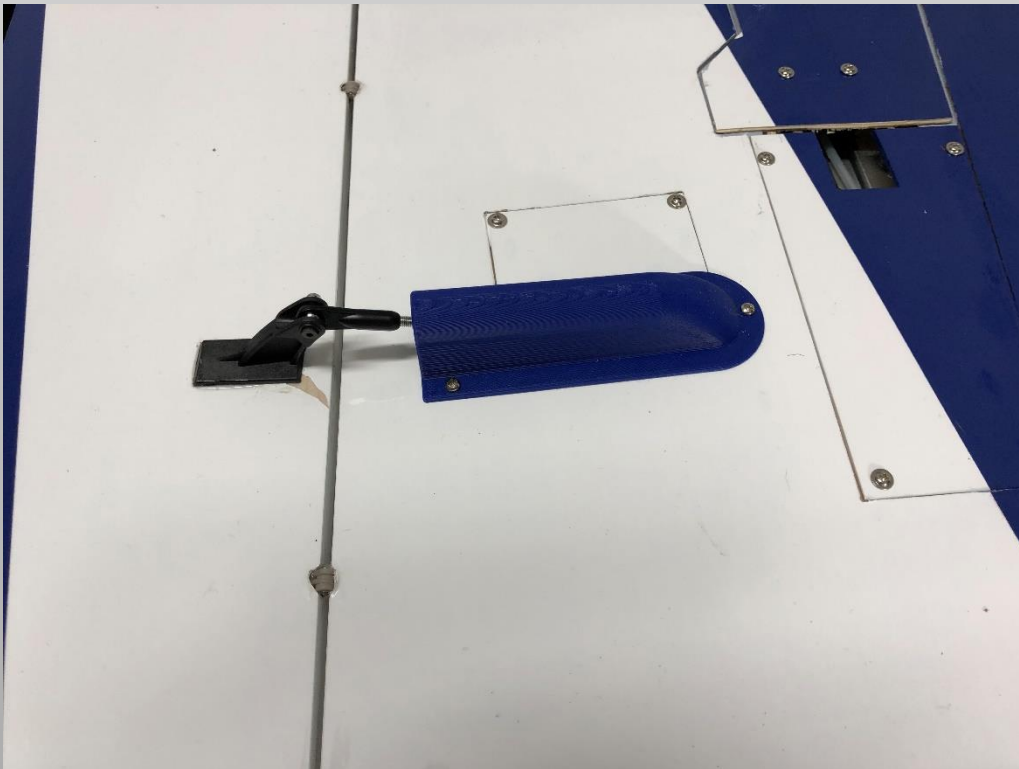
Glue the CFK Horn in like you see on Page 8.

Wing



Finish the Linkage , I use a 3mm Threaded rod because the Linkage Supplied in the Kit was not usable

Mount the Servohorn cover by
Glue or Screwing
(The cover set you can buy separate)



Wing

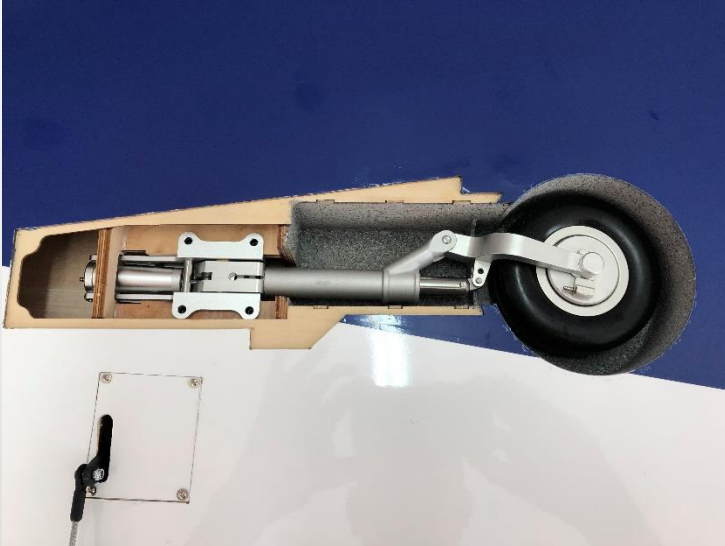


I sprayed my retract Door and support with Granit design color which you can buy at some Hardware shops, it looks much nicer and the wood is a moisture resist



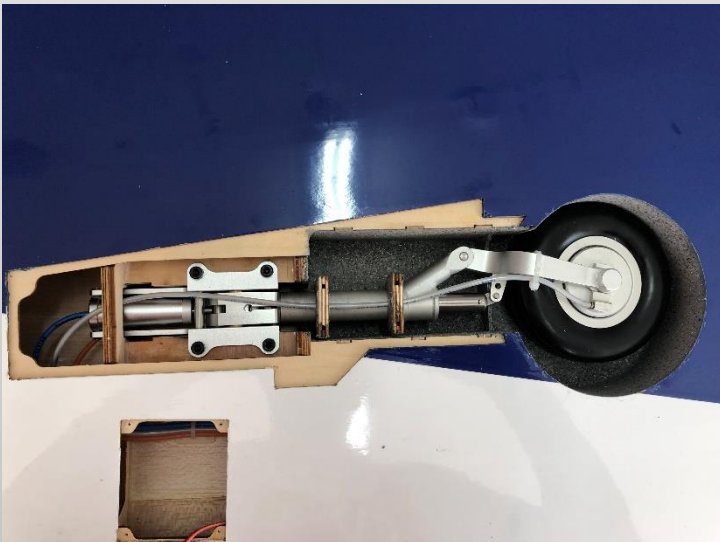
Drill in each support a 3,5mm hole for guiding the brake tube or cable.

Wing



Notice :

Make sure all screws from the retract are tight by using Loctite .
Also check if you have the pneumatic version the Cylinder are not leaking.



Assemble the Strut with the Door support as you can see
Also connect the pressure lines (Cables)
Screw the Retract with the M4x15 in by using Loctite.

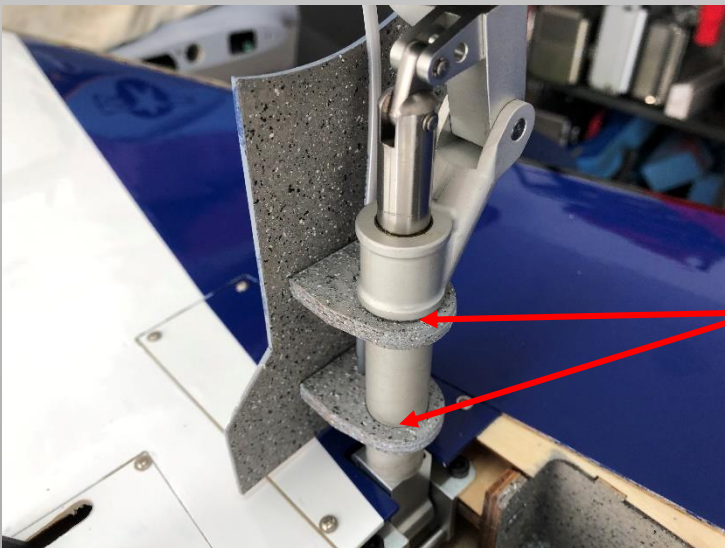
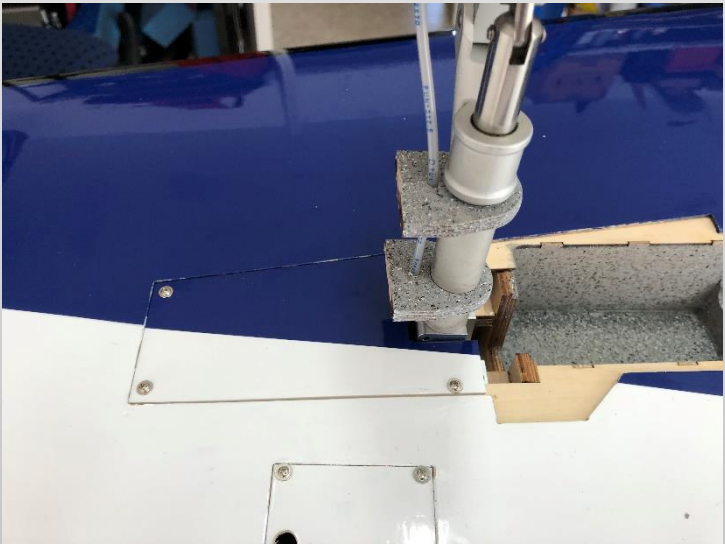


The routing of the Pneumatic Tubes or Cables which come from the retract take the same route as the Servo cable for the Ail and Flap.

Wing



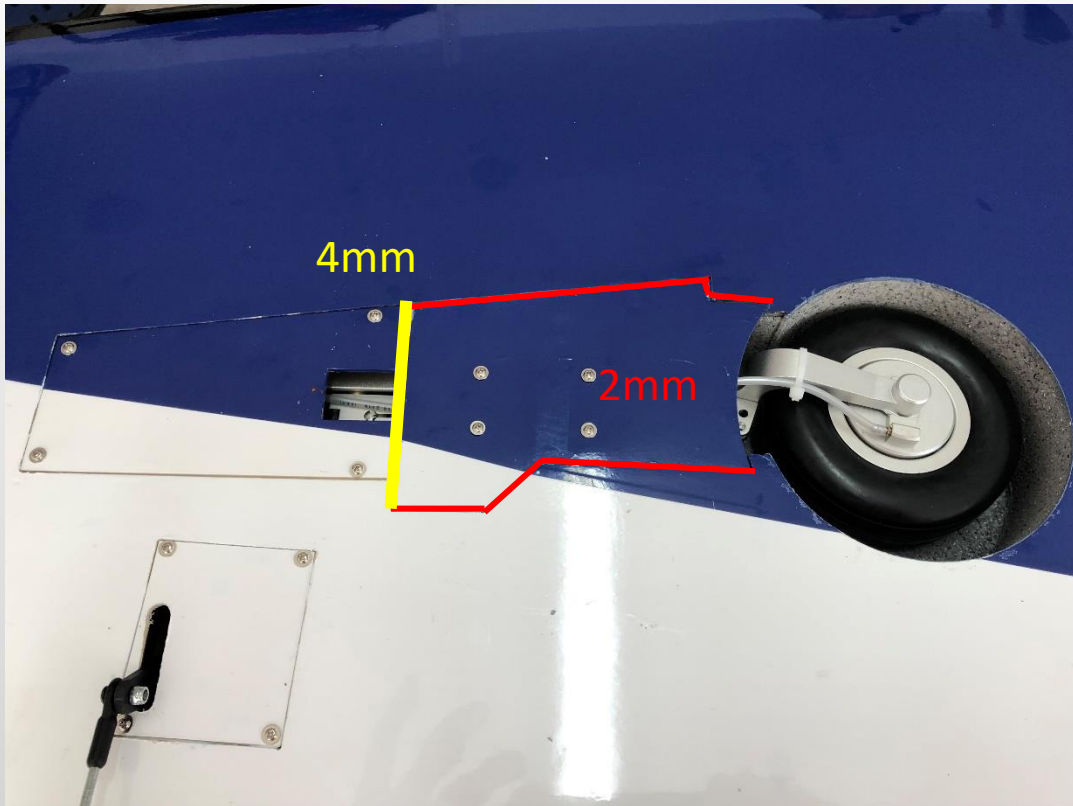
The Coverplate get screwed on with the 2 mm wood screws.



Screw the door on and adjust it to the door outline on the wing, There should be a gap from around 2mm between the door and the wing door outline .

Glue the support on the Retract Strut by using Silicon

Wing



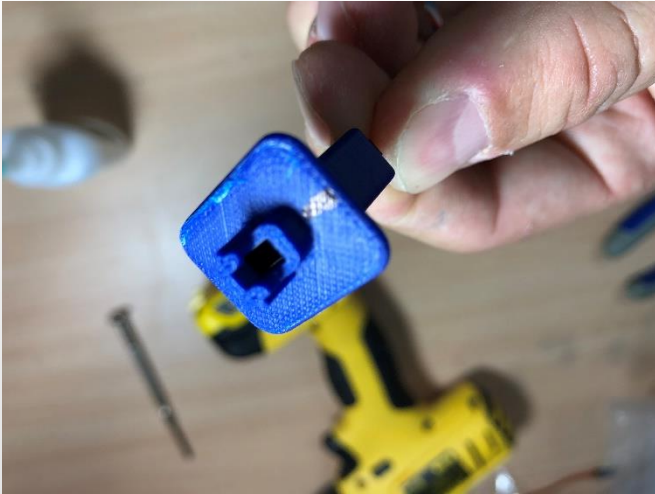
Rear Fuselage



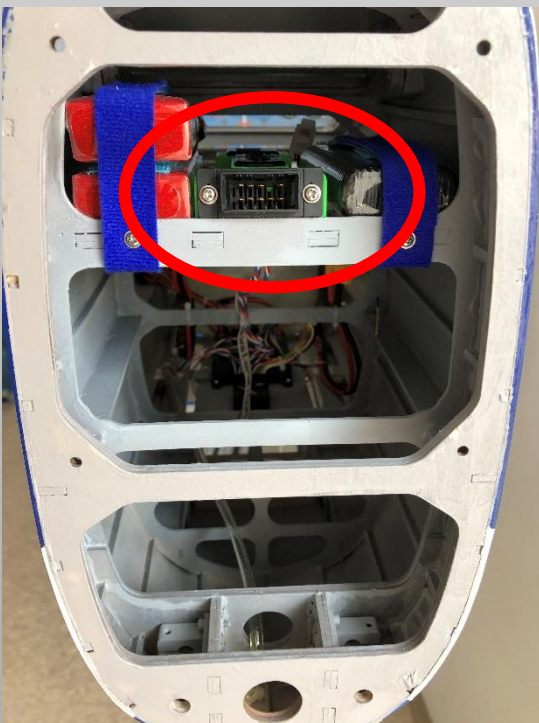
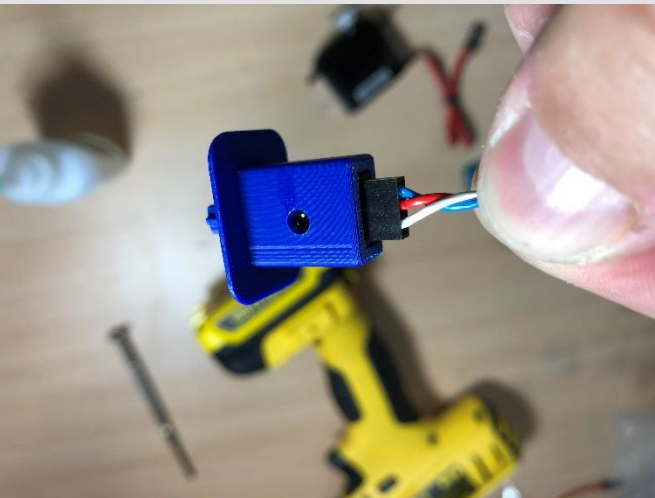
For help routing the cables through the Tail ,
I am use a 6 mm Carbon tube.



Rear Fuselage



I am using this 3D Printing
Servo connector Frames.
For the Tail - Stabilizer section



I want be able to split the Fuselage
For Transport or storage. So I use
this 10pin connector

Front Fuselage



At my fuselage some Glue joints was not enough Glue, so I add on all areas where I could reach some more .



Front Fuselage



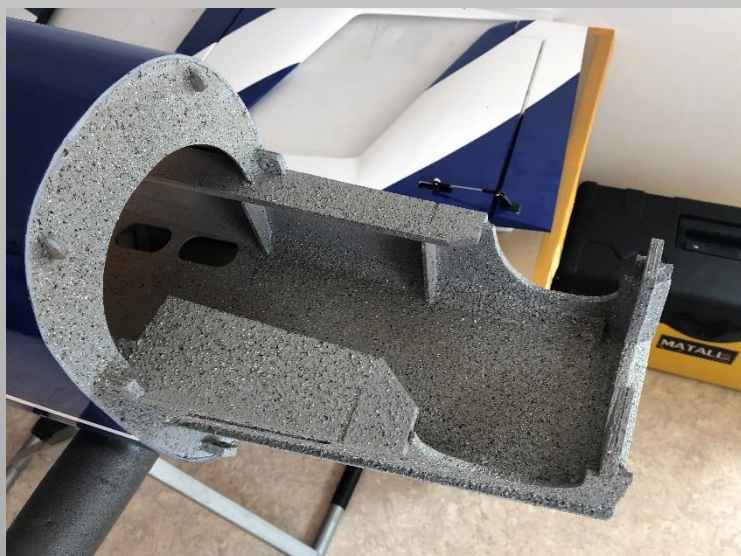
For protect the Wood i painted inside all grey .



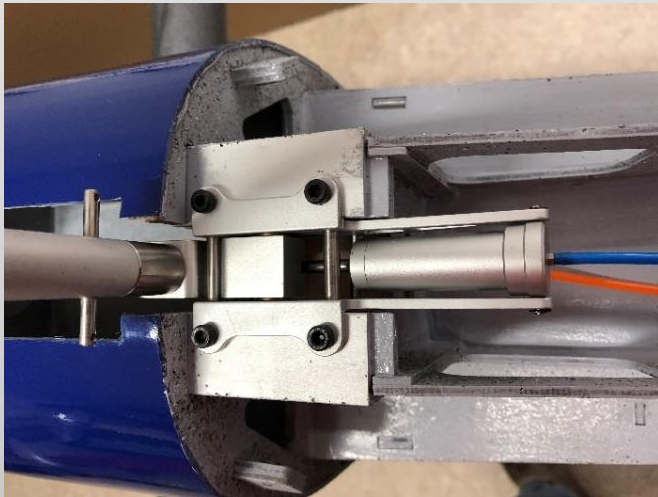
Front Fuselage



At the Engine bay I used the Granit spray paint

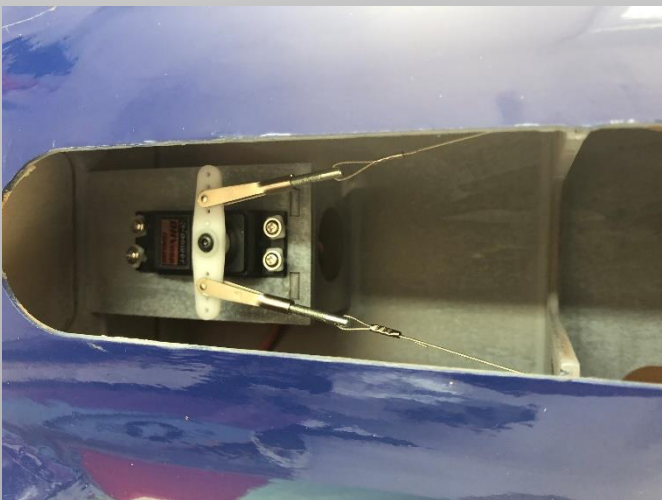


Front Fuselage



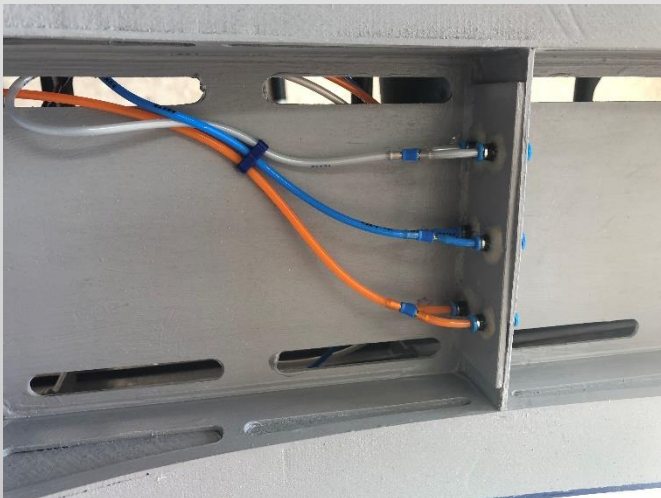
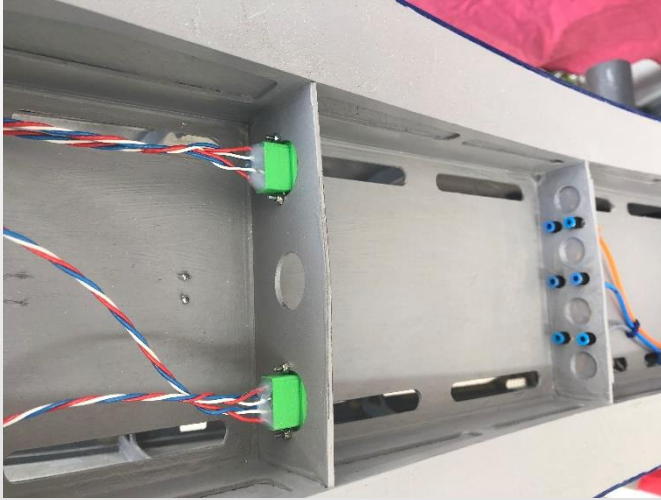
Notice :

Make sure all screws from the retract are tight by using Loctite . Also check if you have the pneumatic version the Cylinder are not leaking.

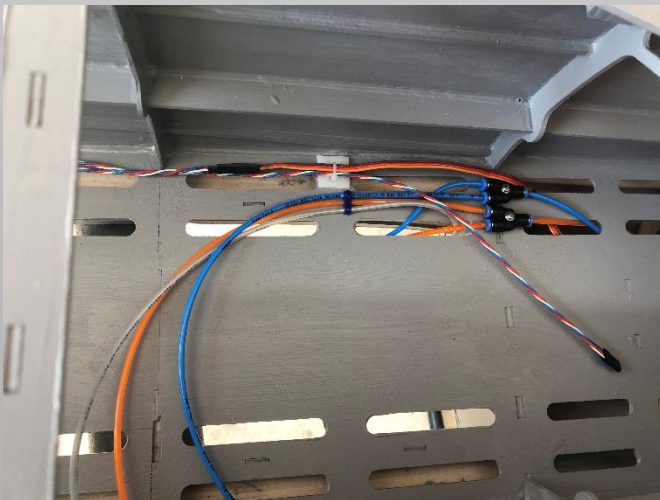


The front Retract are Screwed in by the 4mm screws, add a bit Loctite for secure it , screw the Servo in like you can see and make the Steering Cable as on the Pic.

Front Fuselage



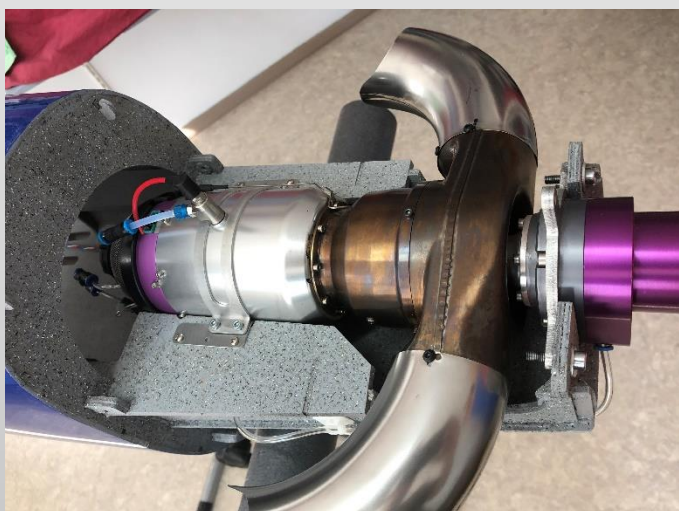
The Wing Fuselage Connection for the Servo and Air im using the green Multiplex connector and 3mm Festo Fittings.
The Green parts are 3D printed parts.



Front Fuselage



Cut out if necessary for the Engine clamp



Install the Engine , the holes in the Front head Former are fit perfect for the SPT5



Front Fuselage



Install the Bottom cowling und start Step by Step to give the right clearance.

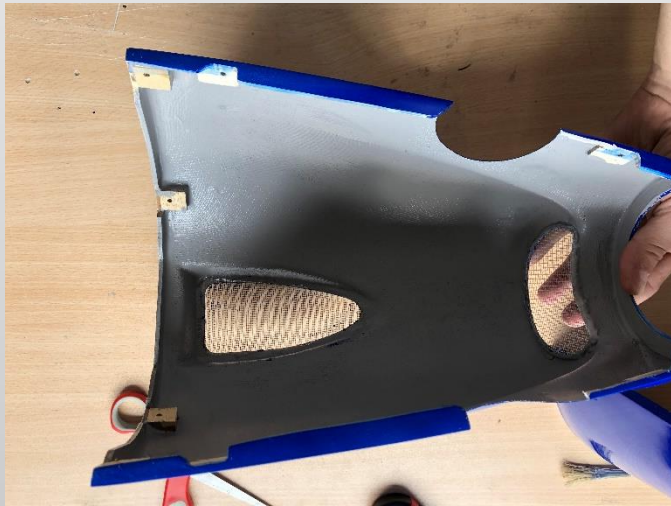


The cut out should be give the exhaust around 5 mm clearance

Front Fuselage



I paint the composite parts with grey color as I did with the Fuselage, also I apply on the top cowling Aluminum Tape for the head protection.



Open the Bottom Cowling as the turbine get maybe not enough air, also I installed on the cut outs a mosquito net.



Front Fuselage



The Complete finish layout, use this as guiding for you installation.



Front Fuselage



The Final finish is to get the Cockpit in and apply the Sticker



Adjustments

The center of gravity is the center of the wingtube .

Check it with full Headertank and extended landing gear.

We have listed below the control movements recommended to fly the aircraft.

Pilots sometimes prefer a different feeling, but you will find your personal setting using these deflections as a starting point.

Aileron +25 mm - 25 mm 35 % Expo

Elevator +/- 28 mm 40 % Expo

Ruder +/- 30 mm 40 % Expo

Flap Take Off (step 1) - 15 degree Landing (step 2) - 45 degree

Flap to Elevator mix 4-5 mm by full flap down

All measurements are related to the root trailing edge of each surface.