Diana 3

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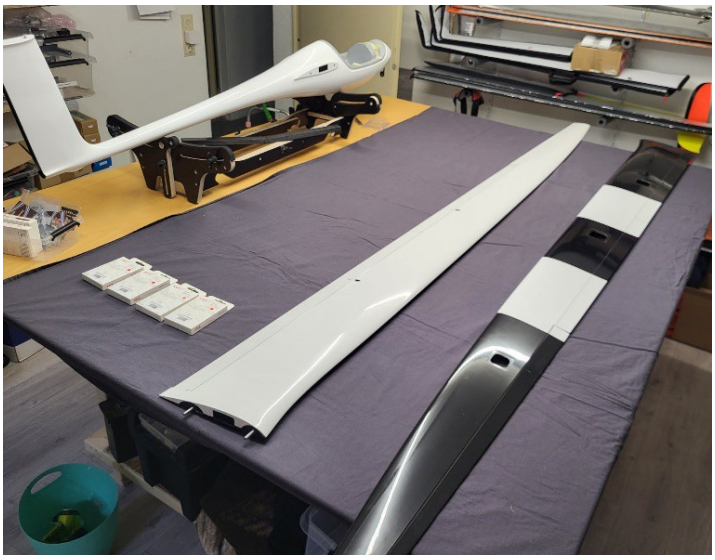
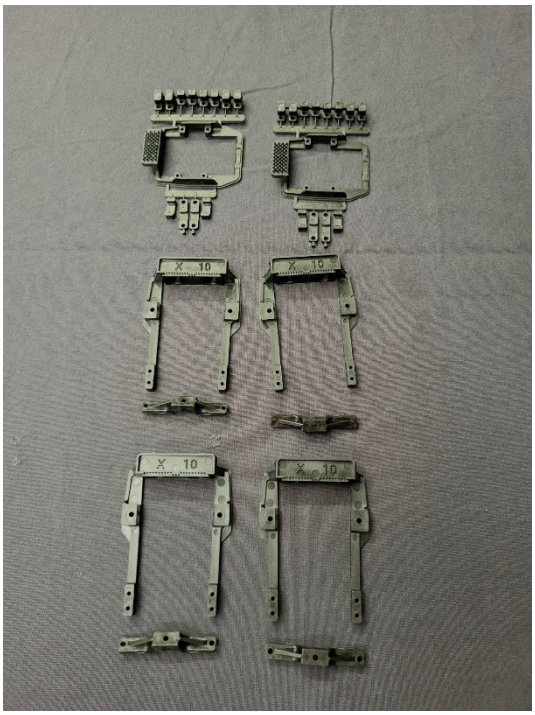
Construction manual

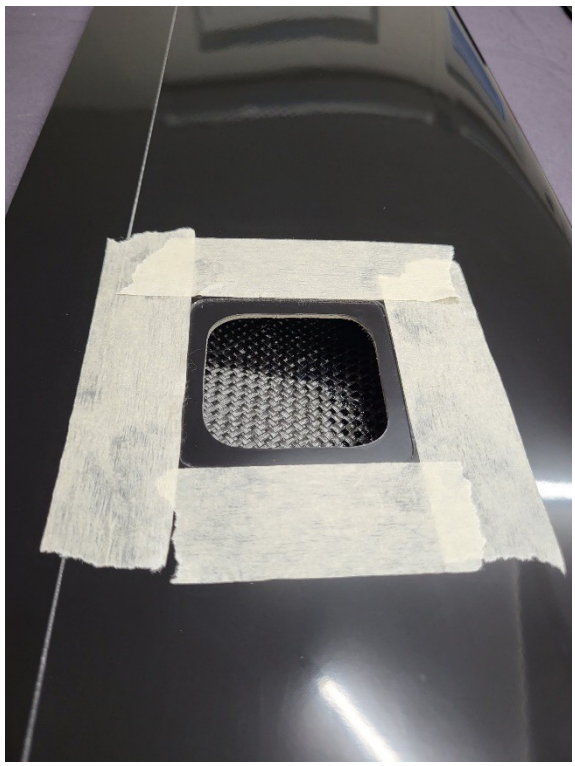
- Place a pad on your workbench to protect the surface of your model



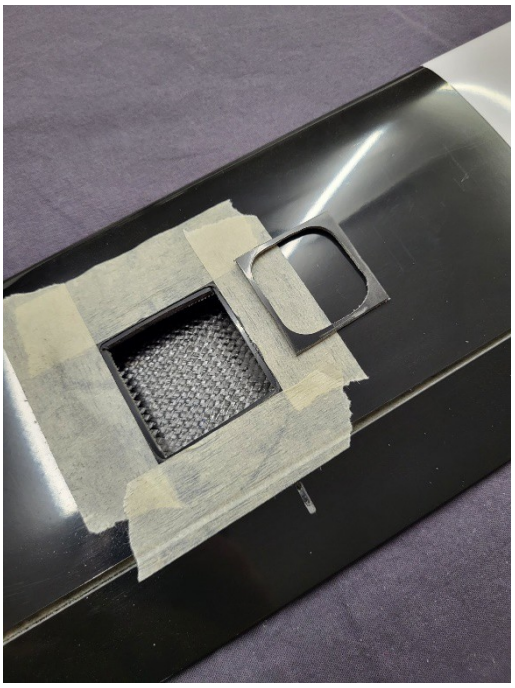
- Then you can start with the removal of the wings. In the example shown here, KST – X10 are installed on the flaps and on the inner ailerons. KST - HS08A are used on the outer ailerons. Prepare the servo frames and grind them thoroughly at the bottom and on the side edges. This is the only way to ensure a proper adhesive bond.

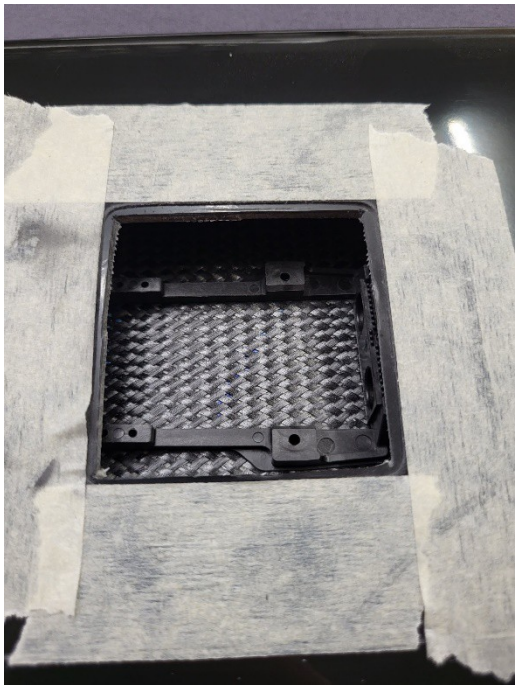


- Next, they glue a frame made of crepe tape around the servo shafts. This is for protection and is needed to mark the exact positions of the servo frames.



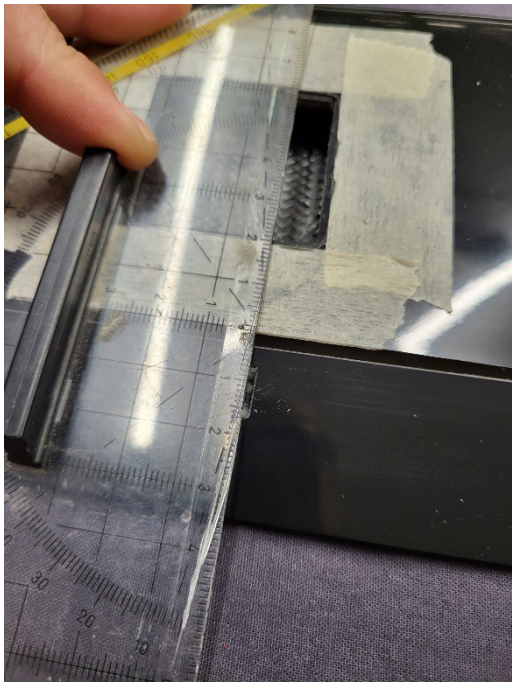
- The edges of the servo bay can be slightly reduced. Original have this 6mm width. If you shorten this to half, it makes it easier to install the servo frames

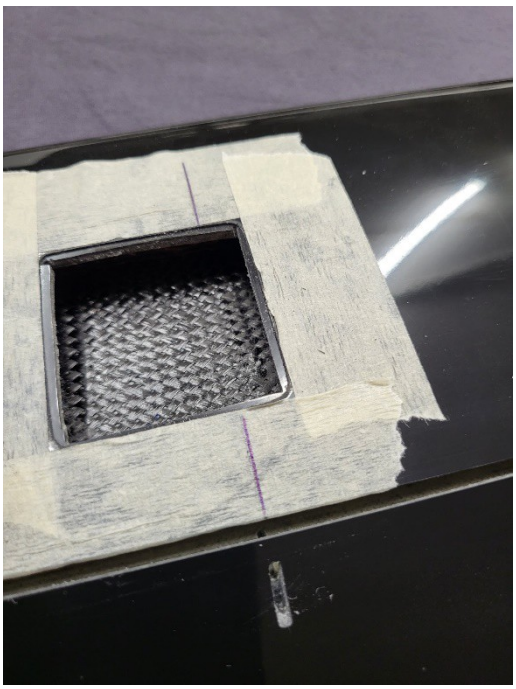




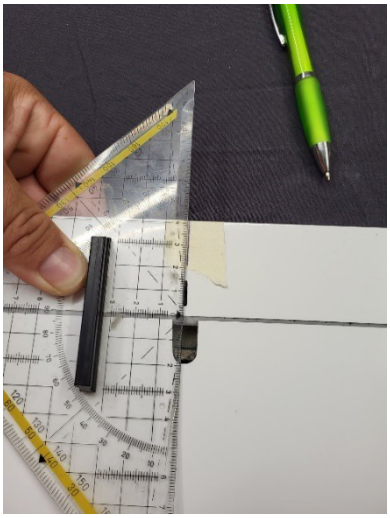
- The recesses for the rudder horns are already prepared as standard. These are used for orientation and the position of the servo frame is marked. With the help of a geotriangle, a line (90 degrees to the hinge) is drawn

In the outer ailerons, the rudder horns come to the bottom (classic linkage) and there the position can be transmitted directly



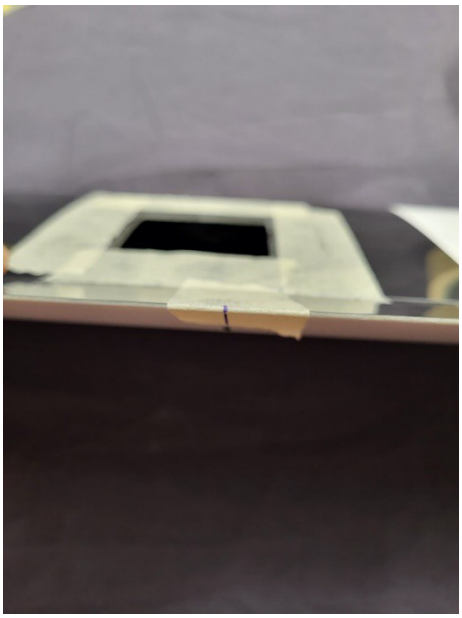


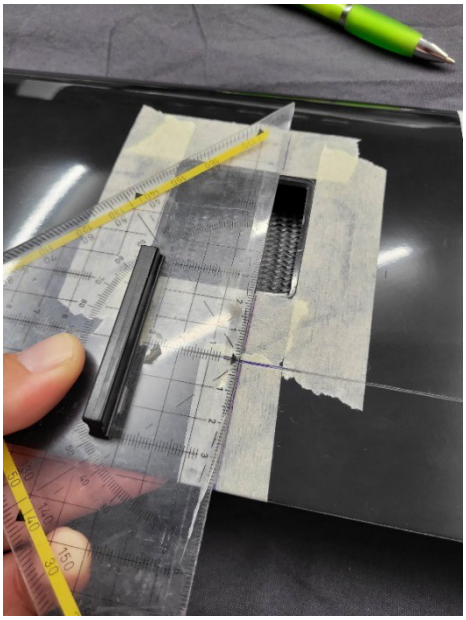
- On the flaps and the inner ailerons, the rudder horns come to the top (crossover linkage) and there the position must first be transferred from the top to the bottom.
- To do this, as explained above, they draw a line at a 90-degree angle to the hinge. Starting from the recess for the rowing horn.



- They draw this line to the end bar and then transfer the position to the lower shell

From this point, in 90 degrees to the hinge, you can then draw the required lines

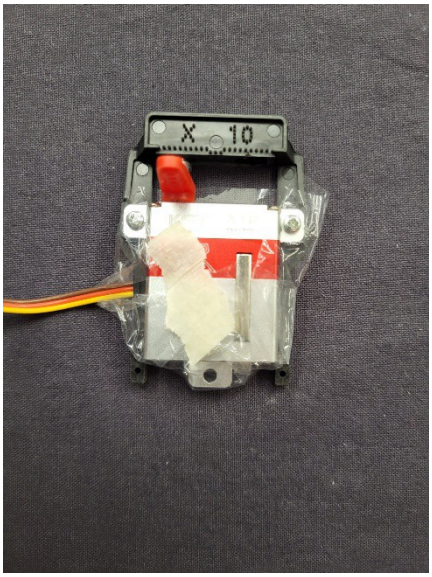


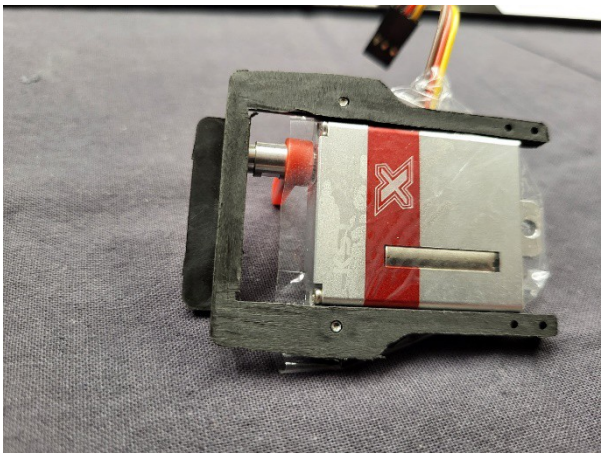


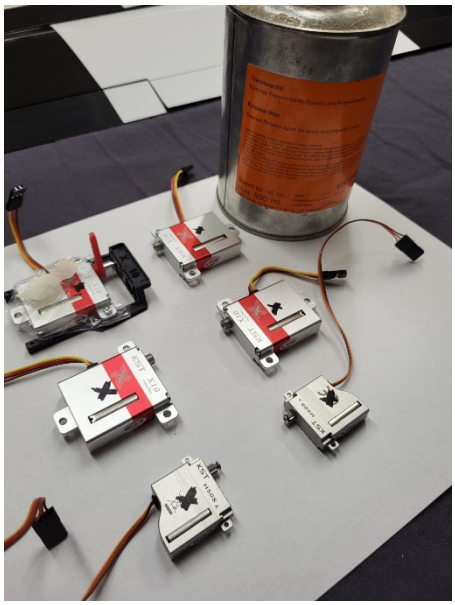
- Next, roughen the surface in the servo shaft and then all adhesive surfaces (servo bay and servo frame) are degreased

In the next step, the servo frames are prepared for gluing.

There are 2 possibilities: Either they wet the servos with release wax or they wrap them in cling film. If this is not done carefully, you will not get the servos removed later because they are firmly glued.



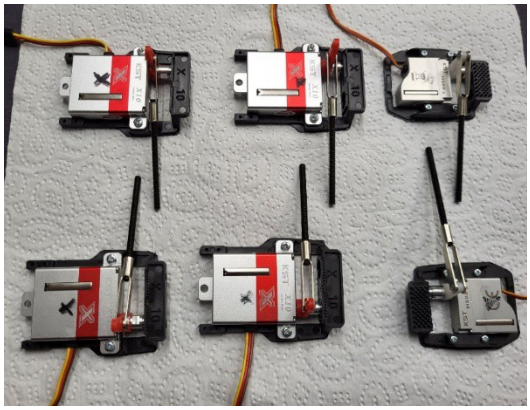




- Now all servos are screwed into their frames.

Important: With servo arm, fork head and a linkage (the length of the linkage does not matter here)

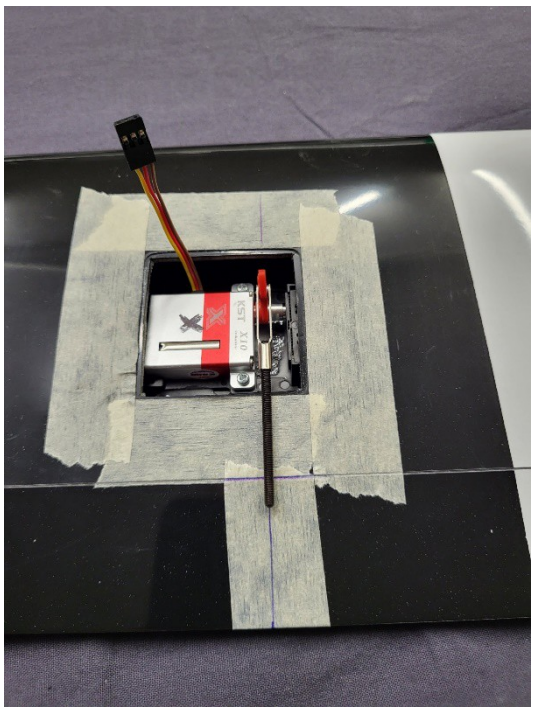
The rear crossbar on the X10 can be omitted. The servo is fixed at 3 points (2 screws + the counter bearing) and this is sufficient

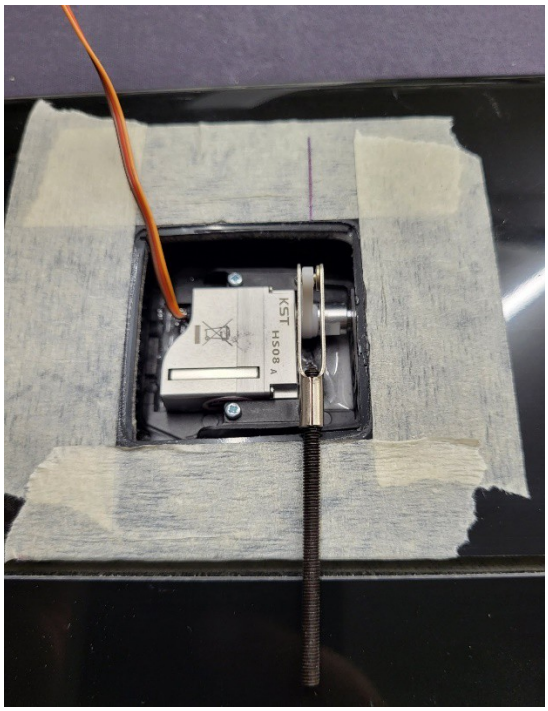


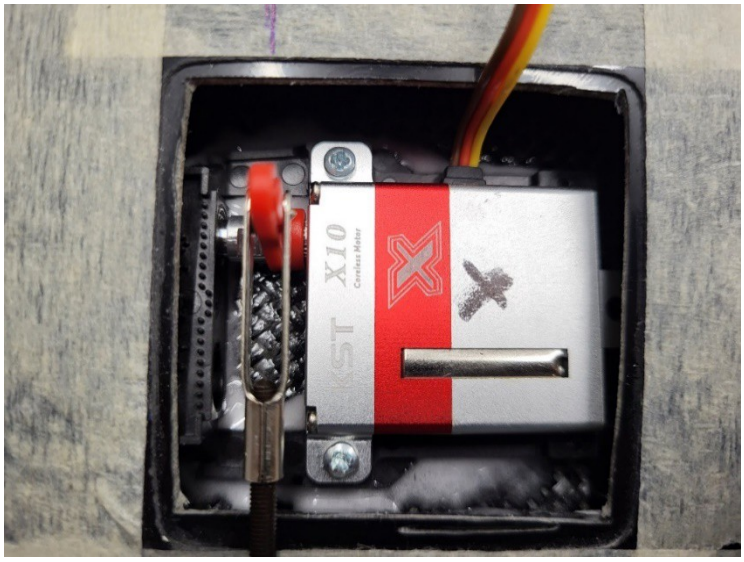
- Now the 6 servo frames can be glued in. For this they either use Uhu Endfest or you mix a mumble of 24h resin with cotton flakes and some thixotropic agent.

If your glue is ready, wet the places in the servo bay and the servo frames with the glue with a brush. Place the servo frames in the desired

position and align it cleanly with the help of the previously drawn lines.





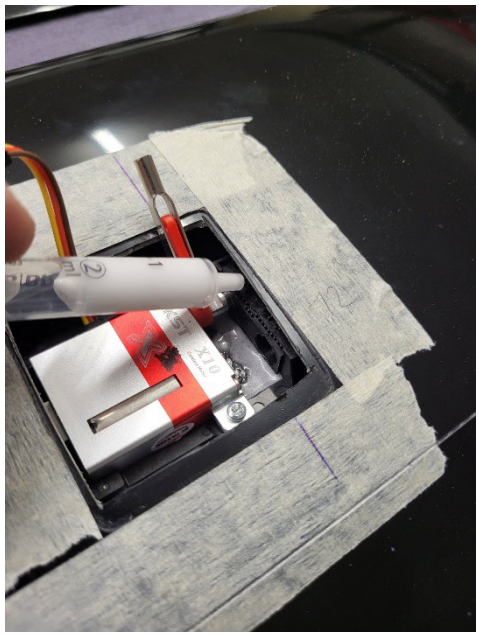


- After everything is in it, the position is checked again and the whole thing is weighed down a little.

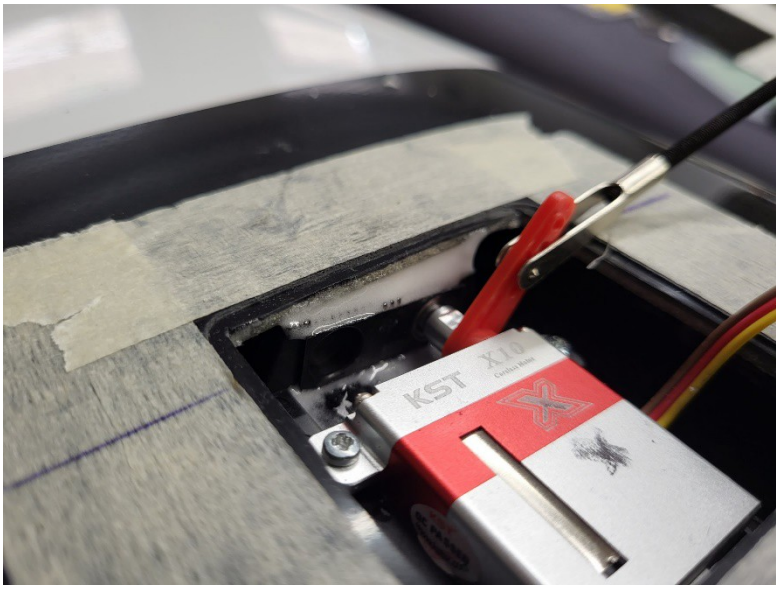
For this you can use small cups with 100g - 200g lead in each

- Once the whole thing has hardened, the ribs of the counter bearings are glued to the lower shell.

For this again use an adhesive or mummy. It is important that this must be touched very toughly, it must no longer flow. Pull the glue into a small syringe. This makes it easy to bring the adhesive to the desired position.

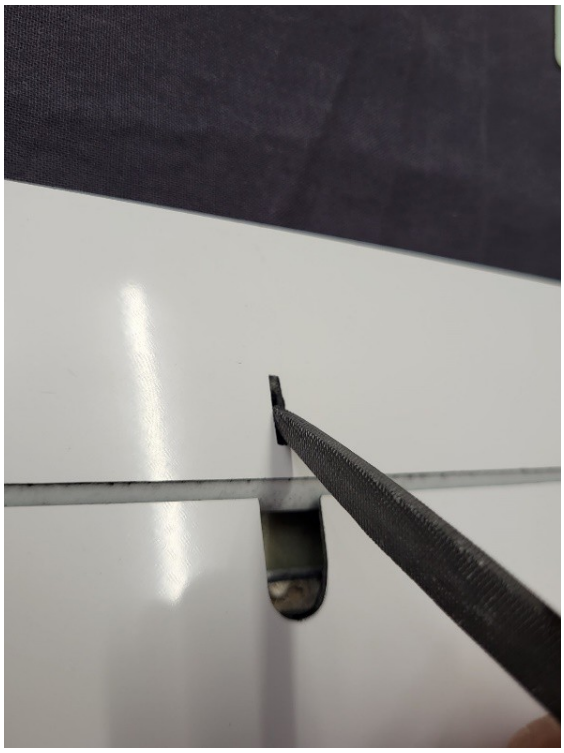


- It is important here that no glue comes to the ball bearing

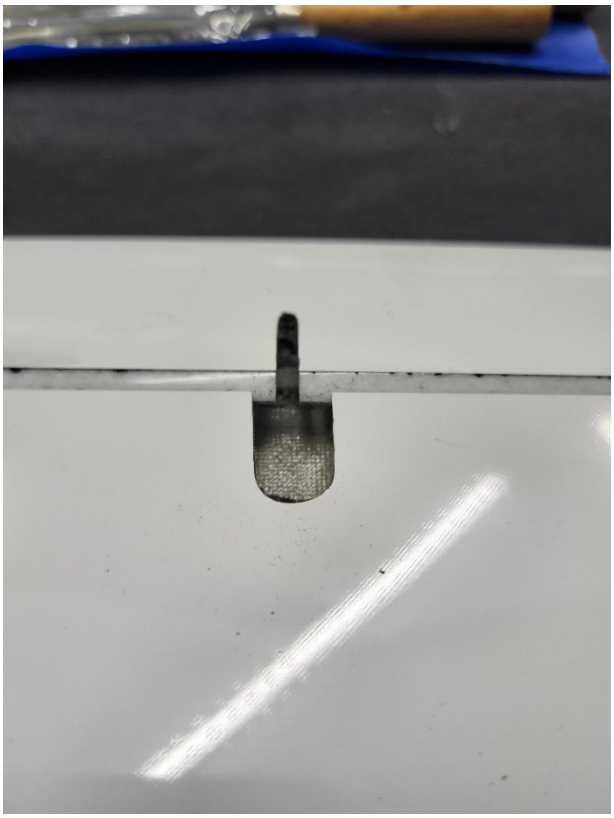


- When everything has hardened, the installation of the rowing horns continues

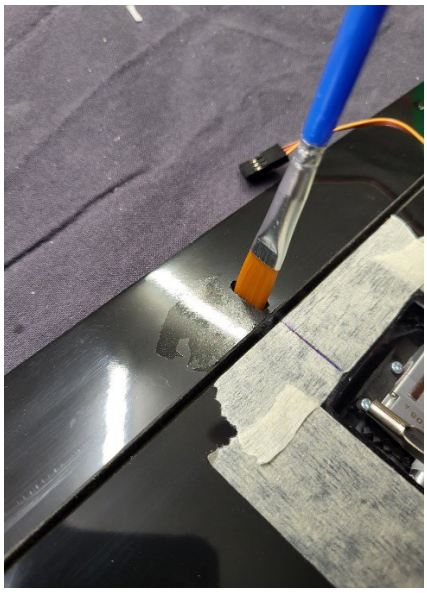
Before the rudder horns can be positioned, the prefabricated cut-outs must be reworked a little



- With the flaps and the inner ailerons, the opening is extended towards the hinge so that you can continue with the rudder horn to get the pivot point further towards the hinge



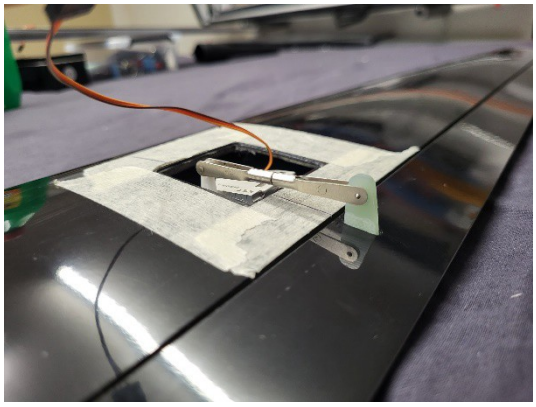
- If all cutouts are adjusted so far that the rudder horns can be glued in then the rudder horns are ground and degreased. The cut-outs in the oars should also be made dust-free and grease-free. This is the only way to create a proper bonding.

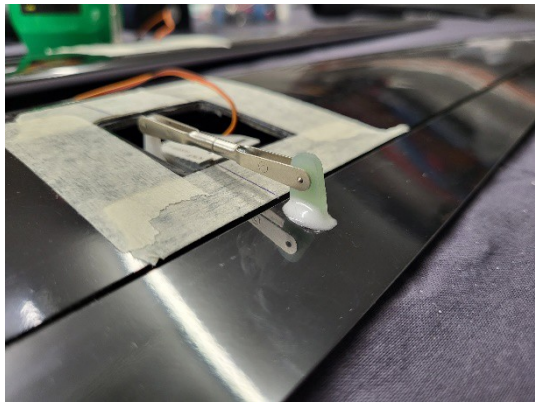


- Start with the outer ailerons

Put some glue in the opening for you rowing horns and brush the rowing horns a little with it.

After you have positioned the rudder horns, it is best to mount a pole. You should prepare this beforehand. The exact length does not matter because it only serves to align the rowing horn cleanly





- After the rudder horns are fixed to the outer ailerons (glue hardened), the same procedure continues on the inner ailerons and the flaps

- With the flaps you should grind away a little bit of the plastic of the frame because otherwise this is in the way of the linkage.

- As soon as the rudder horns are firm, they manufacture the appropriate linkages for all linkages in the area, so that the desired deflections can be achieved

- Next, the electrical connection between the hull and the surface is created.

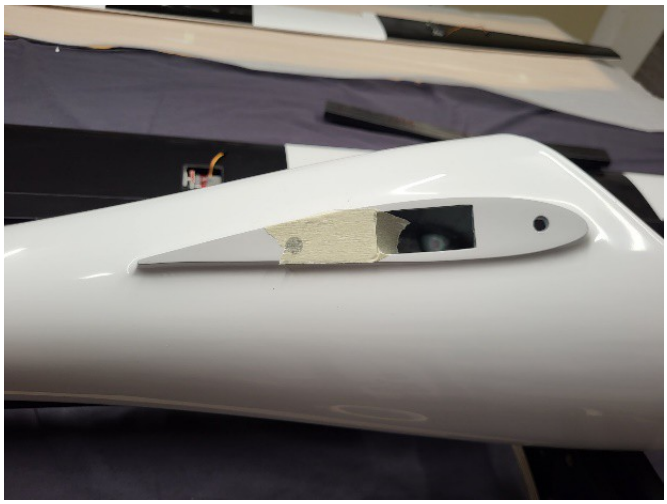
The whole thing is firmly installed on the fuselage and floats in the surfaces.

wings - male MPX

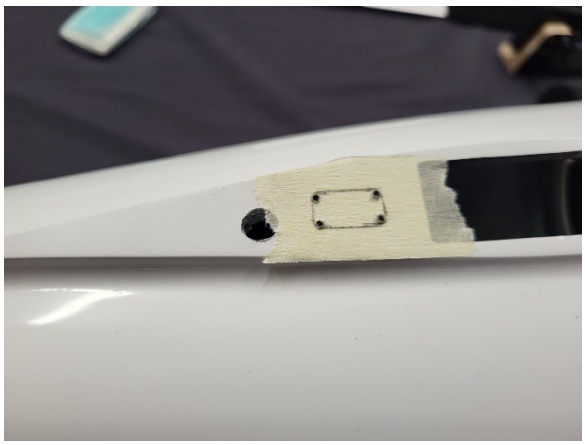
fuselage - female MPX

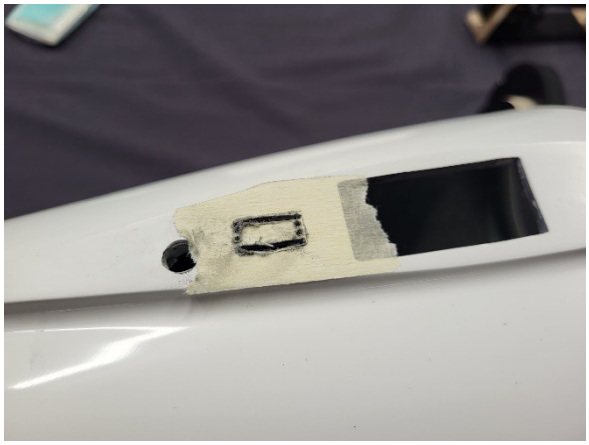
Since 3 servos per area are to be connected and the connector has 6 poles, the conductors (red) are soldered together on 2 pins.

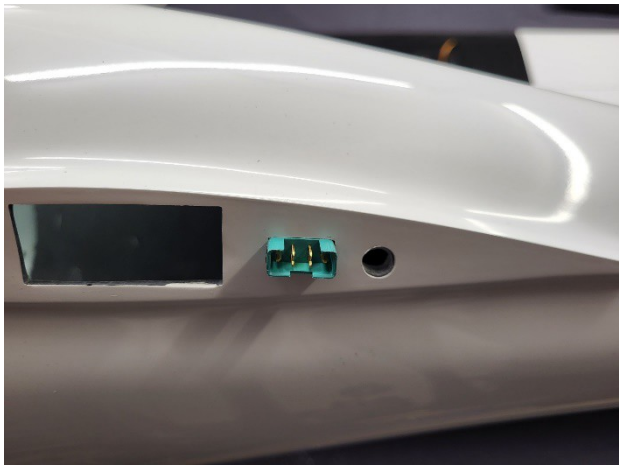
The location on the fuselage is marked and then transferred to the root rib of the wings



- Then the whole thing is separated and adjusted with a file until the plug sits sucking in the opening

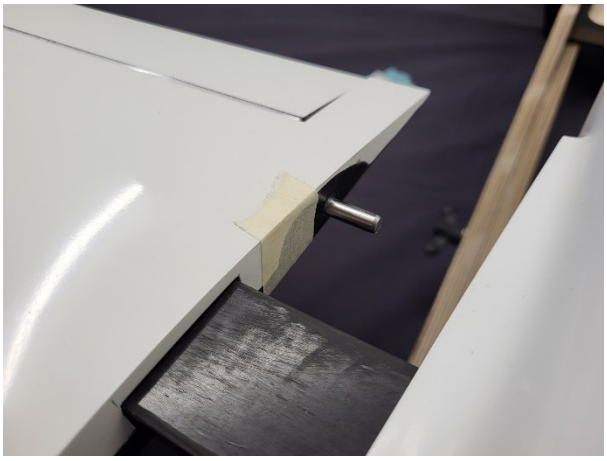




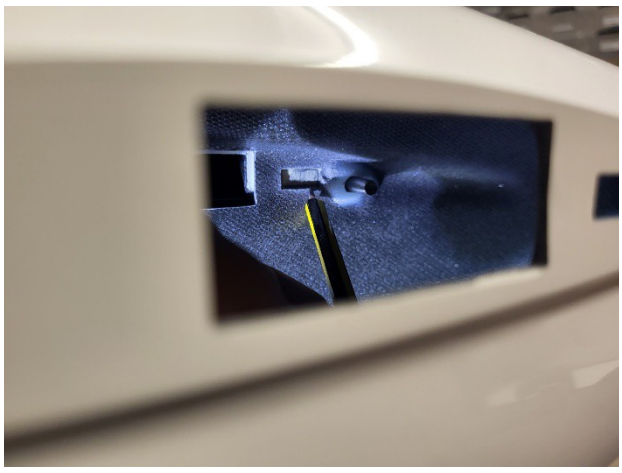


- Before the plug is glued in, the exact position is transferred to the root rib.

Apply some crepe tape to the root rib. At the position where later the counterpart of the plug should sit

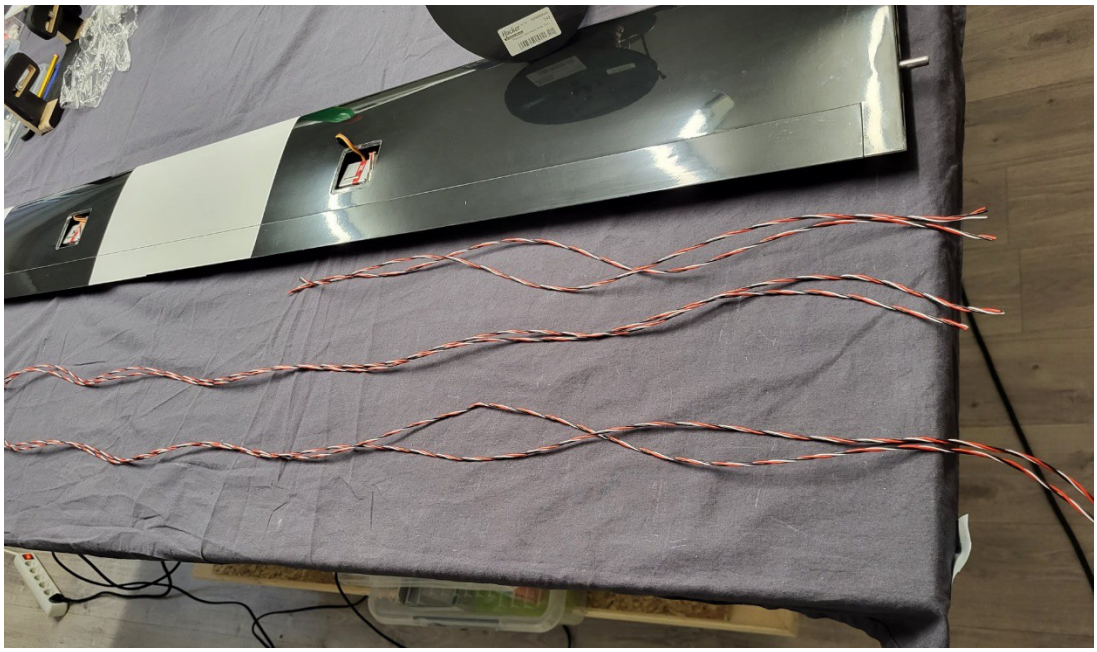


- Now draw the section with a pen



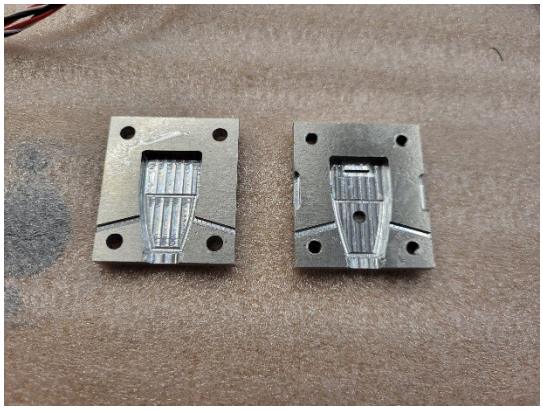
- Then they make a generous cut-out around the marked spot on the root rib. The plug connection on the surface side will be floating, so the cut-out should be made large enough.

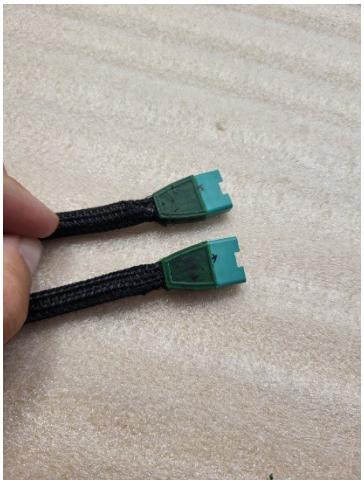
- As a next step, the cables are prepared for the surfaces and cut to the correct length



- If the cables are all prepared, the MPX connectors are soldered. If you have the opportunity, you can then pour the whole thing cleanly.

To protect the cables, it makes sense to pour in a fabric hose

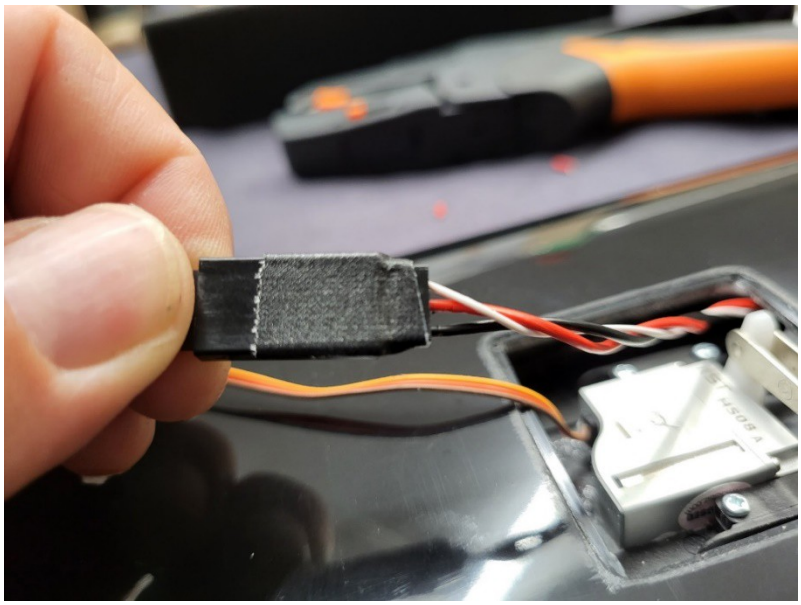




- That the cables will not rattle later in the surface, before pulling in the cables, small foam pieces attached. These can be fixed to the cable with a drop of second glue.

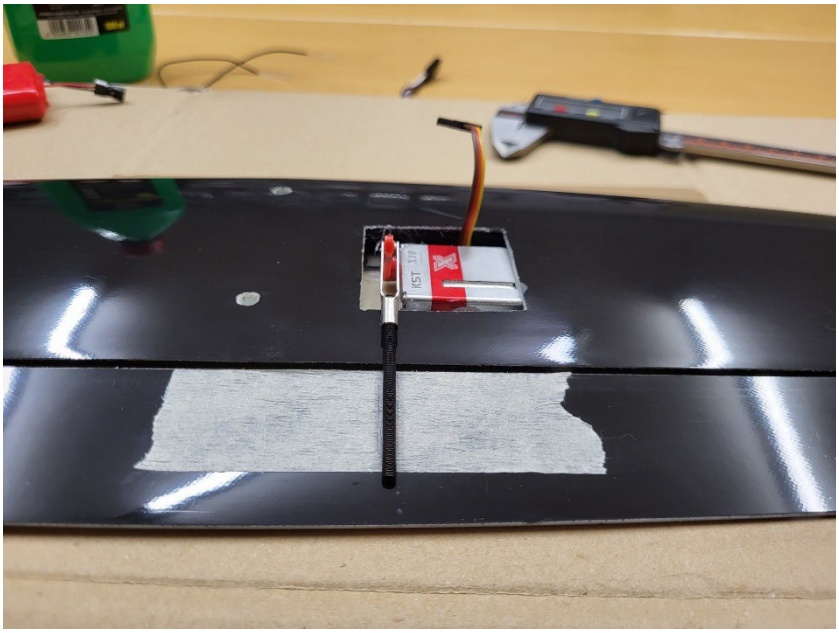
- For the connection between cable set and servo you can choose between 2 variants. Solder directly or crimp connectors.

If you decide on a plug connection, it is important to secure it with a good tape

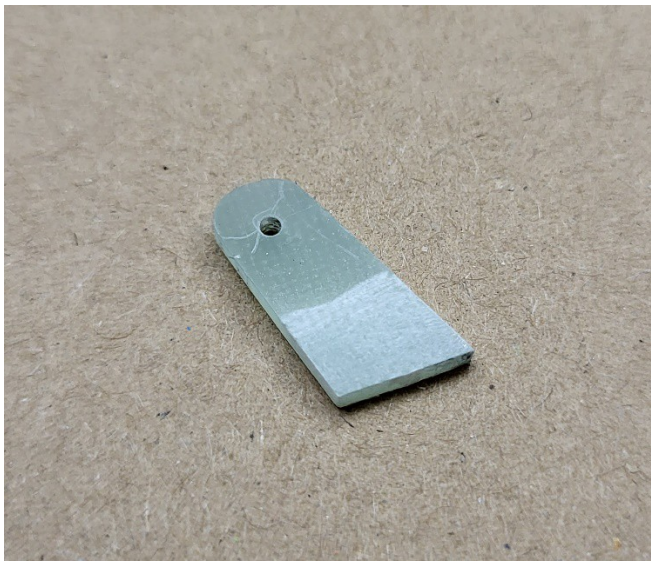


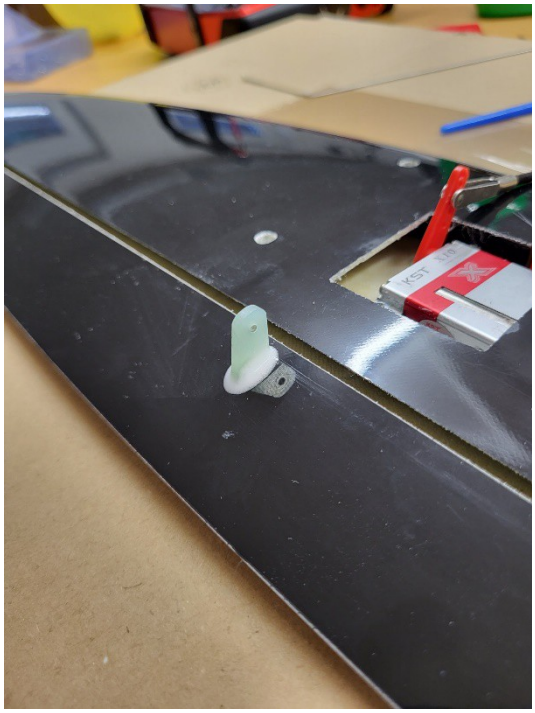
- As a last step, the servo covers are now adjusted and attached

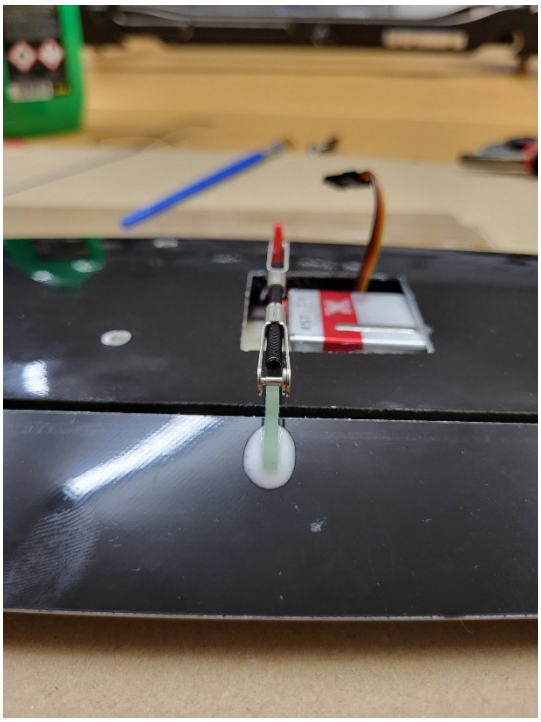
Now you can start the servo installation on the elevator. The intended servo is a KST – X10 or X10 Mini. The whole thing is installed with a servo frame without counter bearing. The procedure is the same as for installation of the area servos.



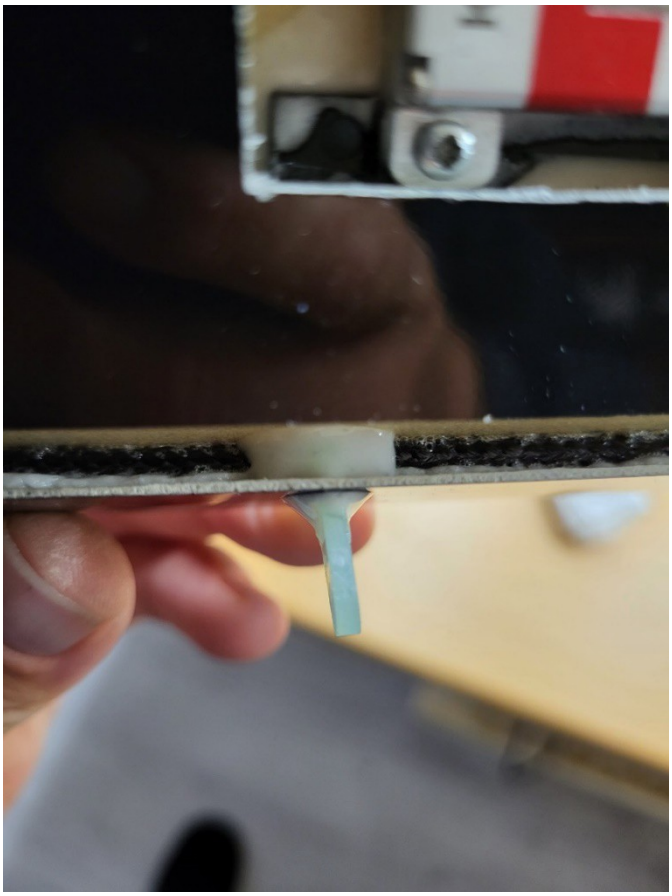
- You have to create the cutout for the rowing horn yourself at the elevator. When the cut-out is made and the rowing horn is prepared, it can be glued in directly







- It is also important that the rudder horn is neatly glued between the two bowls



- Now you can start installing the SR frame. This only needs to be adjusted minimally and can then be glued in directly.

- Please sand the two GRP parts for fixing the rudder before gluing them in. Check whether the steel provided for this purpose fits into the holes. If necessary, they shall adjust them.

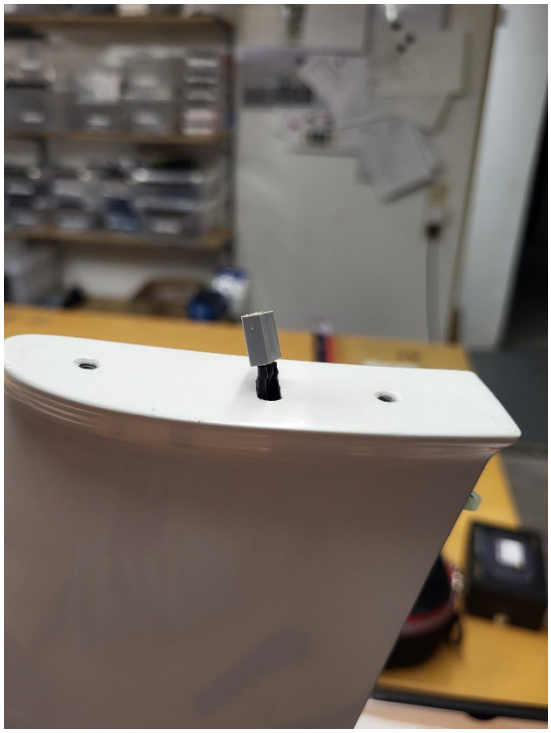
- The two cut-outs in the rudder pant, which are intended for the GRP parts, are created somewhat undersized. Fit these as far as the GRP part sit tightly in it.

Now the SR can sit and be aligned for the first time. Once you have done this, carefully remove the rod that fixes the SR and remove the SR again. Since the two GRP parts sit very tightly in the bridge, they remain in place.Nun fixieren sie diese mit einem kleinen Tropfen Sekundenkleber. Then the rudder is reassembled and checked whether everything really still sits exactly as it should be. If this is confirmed, the rudder is dismantled again and the parts are properly glued.

- Next, the electrical connection between the fuselage and the horizontal stabilizer is established. In the example shown here, 4-pin connectors from multiplex are used. Prepare the plugs and solder the required cables.

Draw the desired location on the tail unit and create a cut-out for the connector.

- Transfer the position of the connector to the tail carrier and create a cut-out there as well. Before gluing the counterpart to the fuselage, please check whether the position really fits and whether the function of the plug is given.

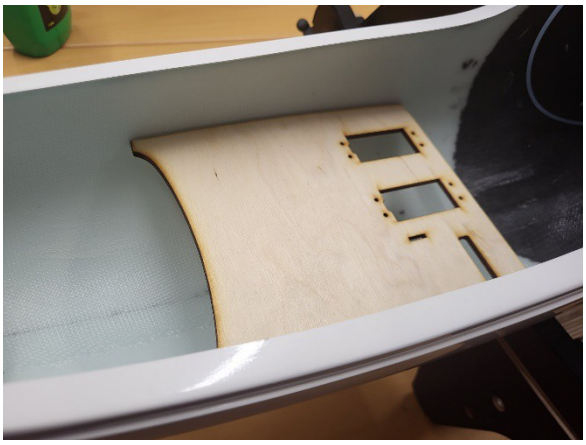


- After that, they can continue at the rudder. This is followed by gluing in the rudder horns. With the help of crepe tape, the position can be marked.

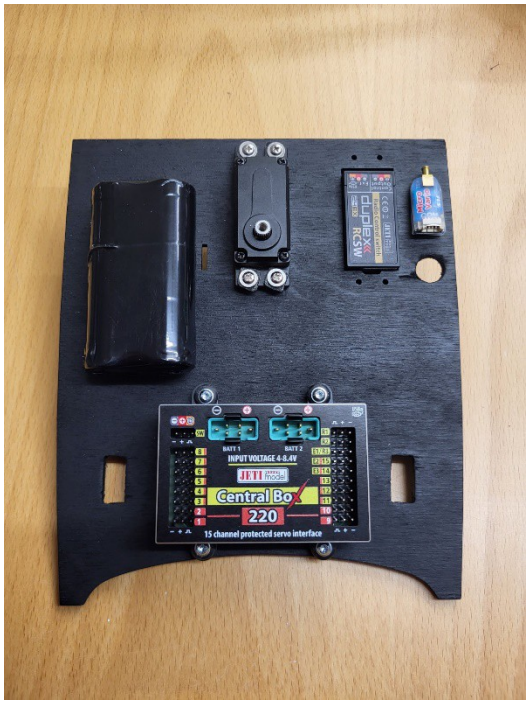
- Now the opening for the ruderhorn can be made. Feel your way forward bit by bit until the supplied rudder horn finds its place. Then it can be glued in

- Now you can let the servo board try it out

Before you finally glue in the servo board, it is best to build the model completely and place all components approximately in their position. This is important to check how they will get there later with the focus.



- Prepare your fuselage board so that it fits your components to be installed. In the Diana shown here, the fuselage board was painted black for optical reasons.



- Once you have determined the exact position of the hull board, you can finally glue it in. After this has hardened, you can attach the ropes of the rudder linkage and lay all cables cleanly in the hull. The last works now relate to the balancing of the center of gravity and the setting of the settings.

Have fun with her Diana3

Ausschläge

	QR außen hoch	QR außen runter	QR innen hoch	QR innen runter	WK hoch	WK runter	HR hoch	HR runter	SR
Normal	13mm / 6,8°	6,7mm / 11,6°	16mm / 21,5°	9mm / 12°	5,6mm / 6,8°	4mm / 4,9°	11,5mm / 17,9°	13,2mm / 20,5°	42mm / 21,4°
Thermik	13mm / 6,8°	6,7mm / 11,6°	16mm / 21,5°	9mm / 12°	5,6mm / 6,8°	4mm / 4,9°	10mm / 15,5°	13,2mm / 20,5°	42mm / 21,4°
Speed	12mm / 20,9°	10,5mm / 18,5°	13,6mm / 18,2°	13,6 / 18,2°	4mm / 4,9°	4mm / 4,9°	11,5mm / 17,9°	12mm / 18,7°	42mm / 21,4°

Trimmung

	QR außen hoch	QR außen runter	QR innen hoch	QR innen runter	WK hoch	WK runter
Normal	0	0	0	0	0	0
Thermik	/	0	/	1mm/1,3° - 3,5mm/4,7°	/	3mm/3,6°-7mm/8,4°
Speed	1mm / 1,7°	/	1,4mm / 1,9°	/	1,6mm / 1,9°	/

Butterfly

WK runter	QR innen hoch	QR außen	HR runter
60mm / 78,4°	16mm / 21,5°	0 / 0	6,5mm / 10°

Snapflap (zuschaltbar)

	QR außen hoch	QR außen runter	QR innen hoch	QR innen runter	WK hoch	WK runter
Normal	0	0	0,9mm / 1,2°	1mm / 1,3°	1mm / 1,2°	3,9mm / 4,7°
Thermik	0	0	0,9mm / 1,2°	1mm / 1,3°	1mm / 1,2°	3,9mm / 4,7°
Speed	0	0	0,9mm / 1,2°	1,7mm / 2,2°	1mm / 1,2°	3,6mm / 4,3°

CG - 90mm

	HR	SR	QR außen	QR innen	WK
Rudertiefe	37mm	113mm	33mm	43mm	47,5mm

Alle Angaben in mm / Grad
gemessen immer am tiefsten Punkt des Ruders