

Naughty 2000

3d-printz Original



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...hinterlässt EinDruck!

AUW: 1500 - 1800g

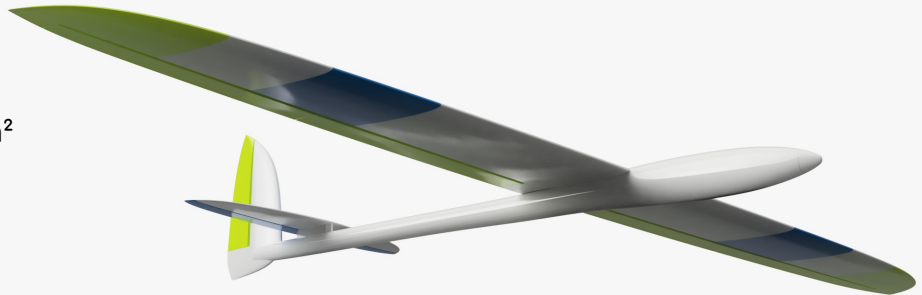
Span: 2000mm

Airfoil: RG15

CG: 55 - 58mm

Surface: 34,5 dm²

Wingload: from 43g/dm²



additional Material:

RC-equipment

Bowden 2x

CA medium & thick

Cutterknife

Sanpaper (120)

please check the Table for further vitamins:

part	diameter	length	pcs
horstab	4mm	285mm	1
fuselage	8mm	800mm	1
flaps	2mm	350mm	2
	2mm	430mm	2
wingspars	10mm	1000mm	1
	8mm	380mm	2
	8mm	145mm	1
screws	M6	20mm	2, Nylon
	M5	20mm	1, Nylon
	M3	20mm	1, Nylon
nuts	M6		2
	M5		1
	M3		1
Self tapping screws	M2	4mm - 6 mm	30
Round Magnets	10mm	4mm	10

electronics

RC RX

Battery (fe 3S Lipo 2200mah for Motorversion)

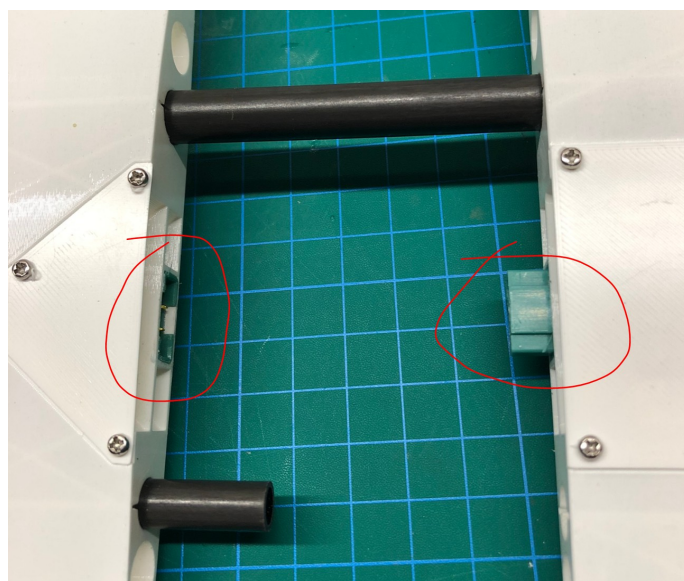
6x Microservos fe Savöx SH-0264MG

optional Motor – fe [HK NTM Prop-Drive 28-36 1200KV / 530W](#)

Suggestion for Winglug:

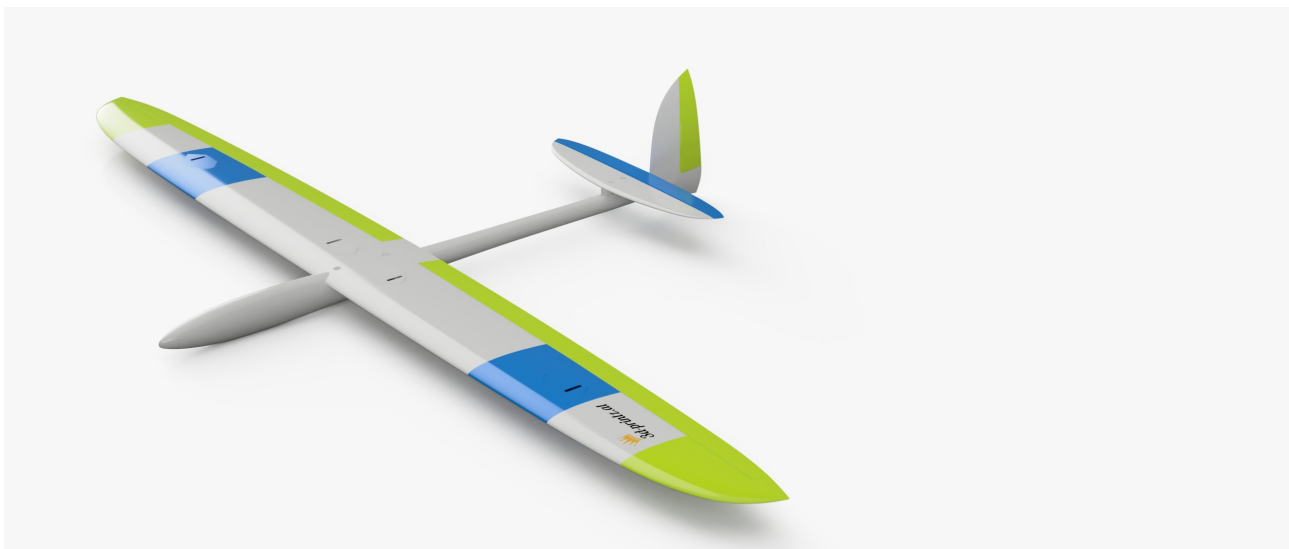
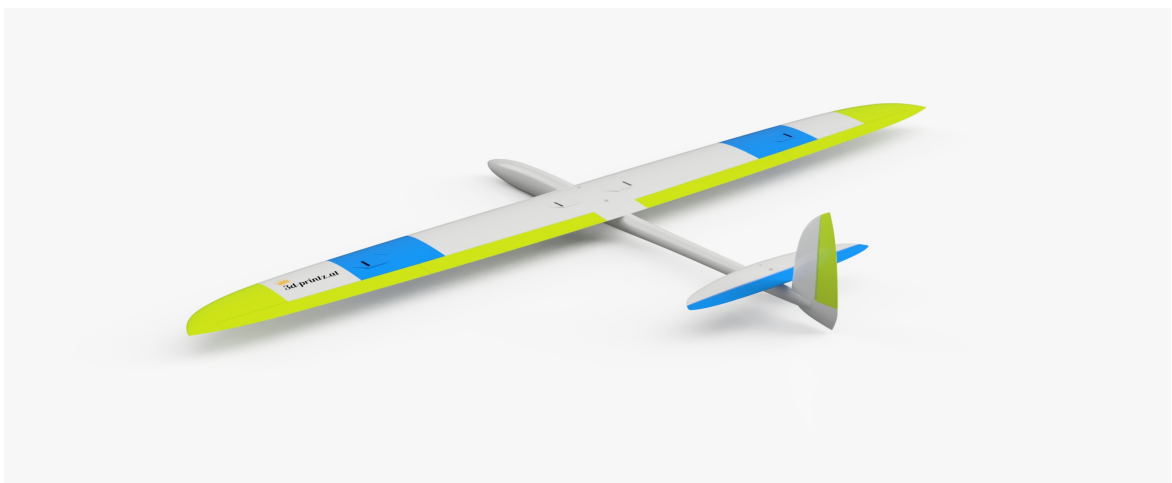
first solder the plugs and afterwards glue them in the bays with CA.

[Multiplex Stecker, 6 polig:](#)



foreword

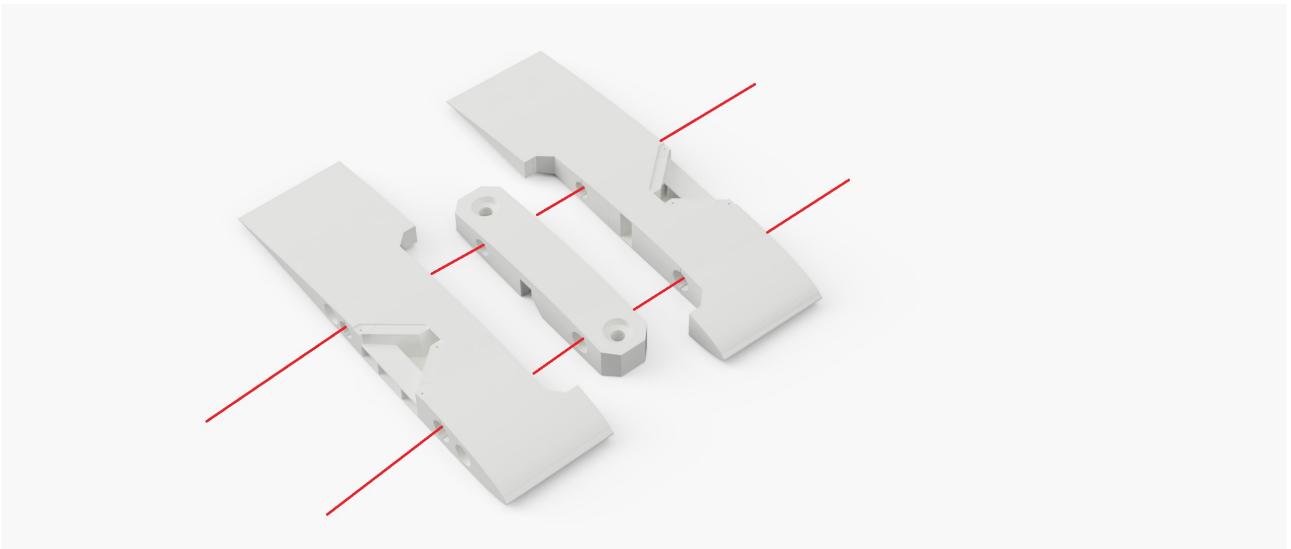
Naughty - the name says it all - as the "evil twin brother" of the Nice, it shares the shape with the thermal glider, but that's of course the only mutuality. The Naughty is designed as a slope racer and comes up with a significantly higher wing load, a faster airfoil (the RG15 is a true benchmark since a long time) and a solid construction. The F3F-inspired sloper can easily be motorized and therefore is also a true rocket in the flat. Thanks to the 4 flapwing, the Naughty can also be landed well on uneven terrain and can be adapted to different flight situations.



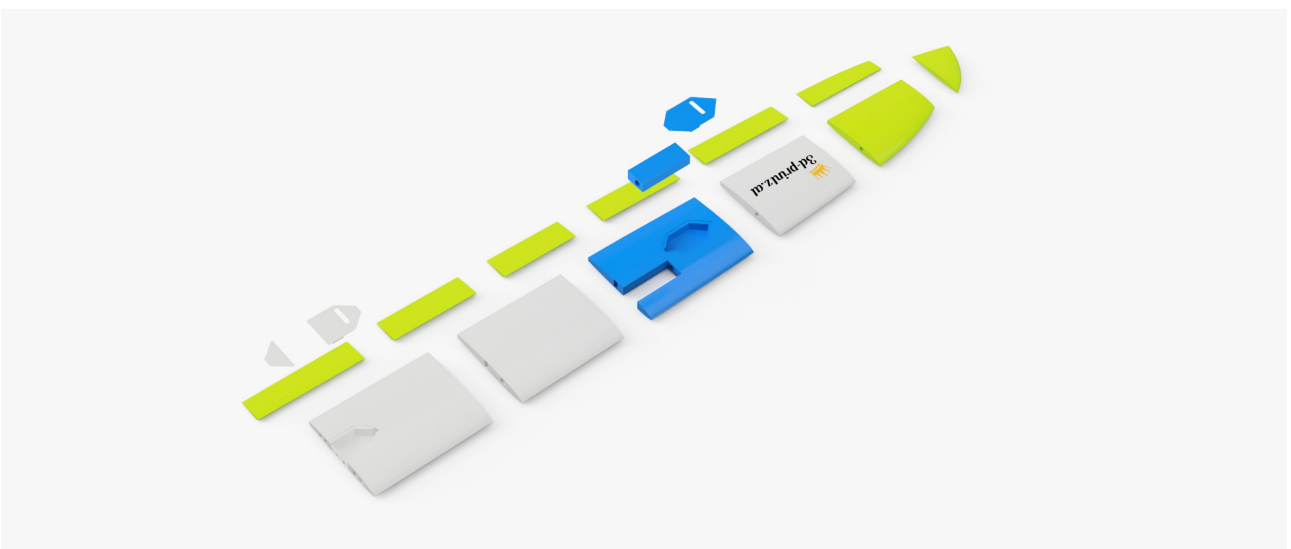
Build

Wing

The middle of the wing is glued first – to do this, join the parts WingCR, WingCL and Centerjoiner together with superglue. The 10mm and the 8mm carbon tube serve as a guide rail (caution – do not glue the carbon tubes!).



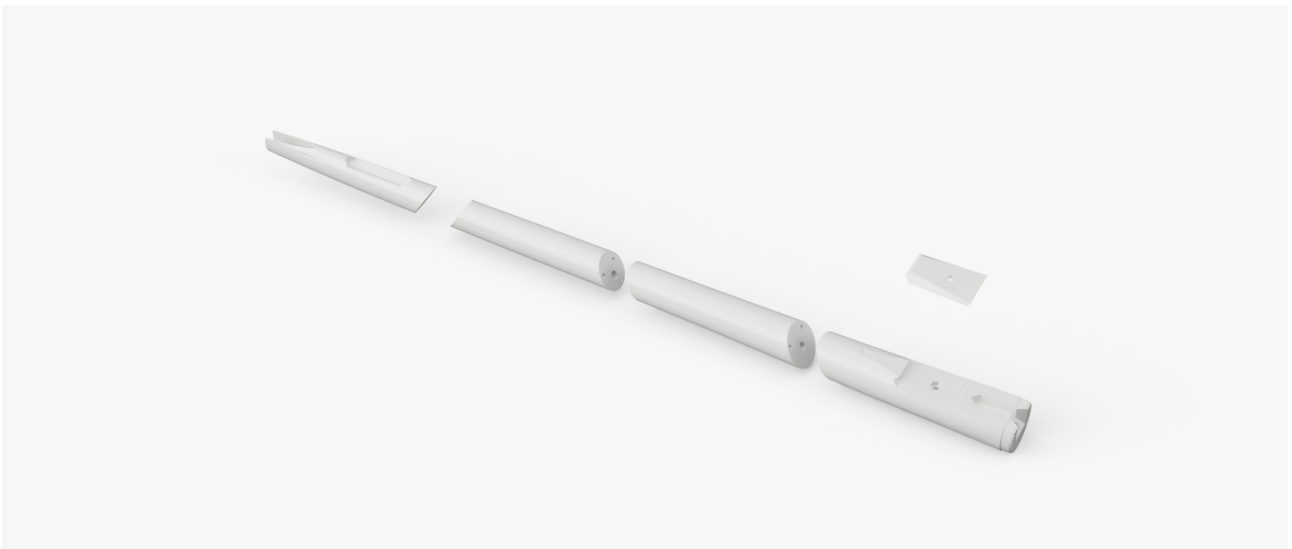
Then the left and right wing and the flaps (aileron, flaps) can be assembled. The 10mm carbon tube and the 8mm carbon tube serves as a guide rail again. The flaps can be reinforced with a carbon rod (2mm) if required, but this is optional. Never glue the center of the wing to the rest of the wing if it should remain divisible!



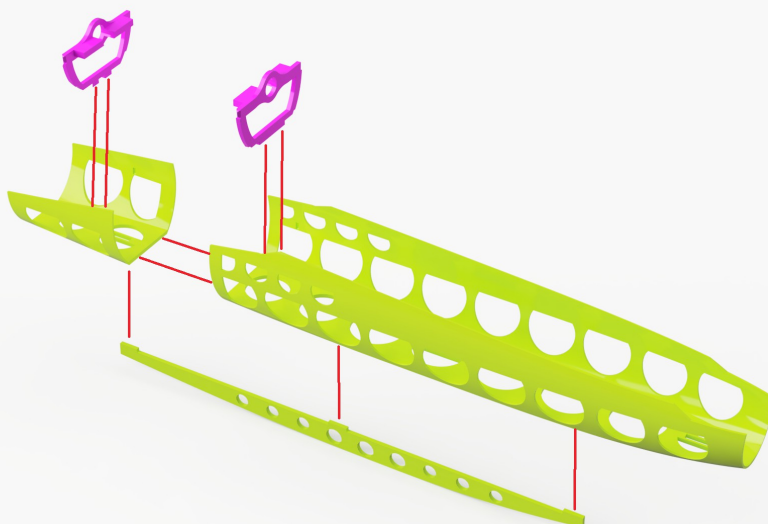
The flaps are attached with TPU hinges in the slots provided using CA. First check whether all slots are free and the TPU hinges can be inserted without problems. Then insert the hinges into the slots with a little superglue, without accelerator, so that the position can still be corrected if necessary (thick superglue dries more slowly). Use the accelerator only when everything fits perfectly and can be moved freely!

fuselage

The fuselage parts FusLW 1-4 can be glued using CA, the 8mm carbon tube serves as a guide rail. Do not glue the carbon tube to the fuselage yet! Insert an M6 nut in the recess provided (at the wingjoint) and glue it if necessary, then glue the entire surface of the fusplate to the fuselage.



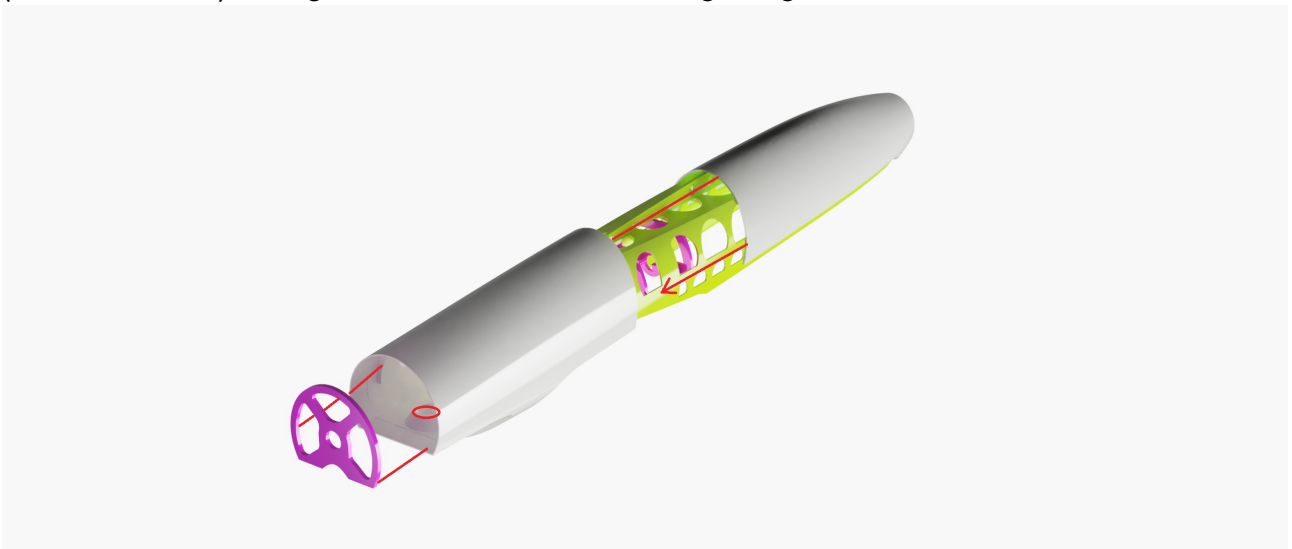
Now the frontpart of the fuse can be assembled, first the cockpit – glue with CA:



Then glue the motor holder into Fusfront_front, and push the cockpit into Fusfront_front as far as it will go and glue it - make sure that it is straight:



Now the fuselage servos can be installed. Later, they are harder to access! When the servos are screwed in, slide the front fuselage section into the rear one (Fusfront_rear) and glue - make sure it is straight again!



Put an M6 nut into the Fusfront_rear (where the wingscrew front comes in) - the nut should be heated with a lighter to slide into the recess by the wing mount. After that, Fusspar_rear can be glued in.

Finally glue the front fuselage part to the rear one. To do this, insert the 8mm carbon tube into the rear fuselage, attach the skid as a test, push it into the front fuselage section and shorten the 8mm carbon tube to the correct length (800mm should fit). Then the tube can be glued to the rear part of the fuselage - you should make sure that the tube reaches into the recess in the skid (but don't glue the skid

yet!) . The fuselage parts are best glued with thick CA without accelerator or epoxy resin, so that there is enough time for the alignment of the tube. Finally, the front can be connected to the back.



For the canopy glue together canopy_front and canopy_rear, mount the magnet holder with 2x M2 Screws to the fuselage (above the servos), and glue in the magnets to the canopy and magnet holder (keep polarization in mind)

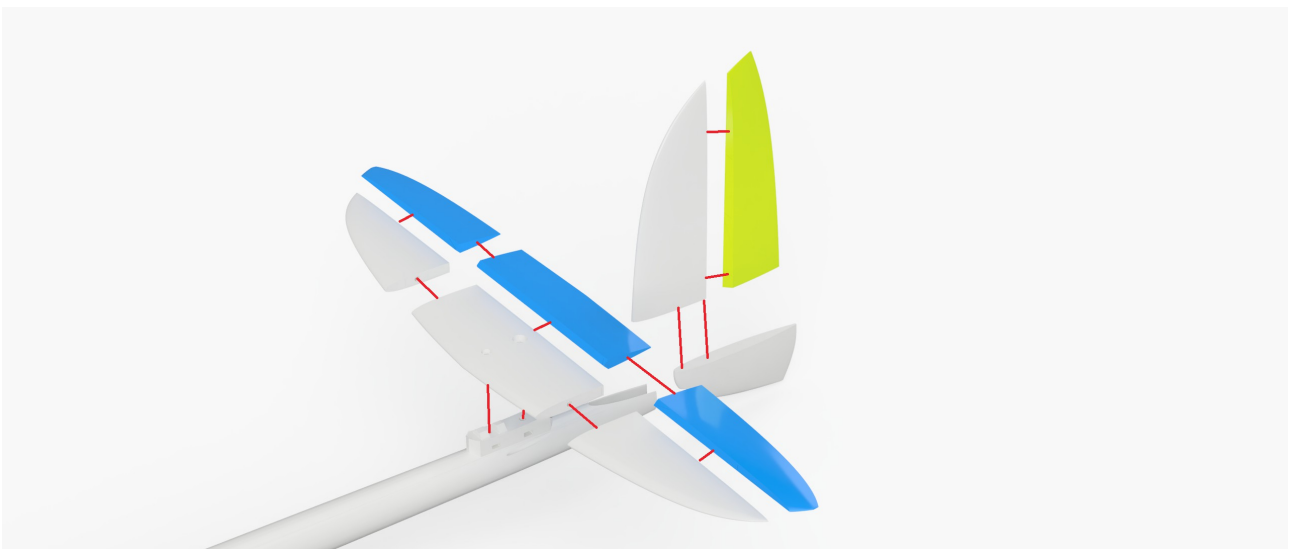
stab

Glue the parts EL_right, EL_middle and EL_left and the corresponding rudder surfaces together (4mm carbon tube obligatory!)

Then screw the entire horizontal stab to the pylon using M5 and M3 screws and the associated nuts (these are pushed into the slots in the pylon). The tailplane must be parallel to the wing - therefore, as a guide, mount the wing center section on the fuselage with 2x M6 screws, apply adhesive to the pylon (the tailplane is already screwed on) and glue the pylon to the fuselage so that the tailplane is parallel to the wing.

Then the vertical stabilizer, the rudder (TPU hinges) and the skid can be aligned and glued in the same way.

electronics



Naughty is made for servos in the 12mm class. These fit perfect: [Savöx SH-0264MG](#) or [SG 90](#) or similar. You'll need 6 pcs. If you want to modify the servofittings to your needs in the CAD you can use the Stepfiles that come with the Download.

batterysuggestion: [3S Lipo, 2200mah, 25C](#)

Motor:

[HK NTM 2836](#) (available in different KV)

...or similar

ESC: ESC with BEC, 40-50 A

Prop: please choose a foldingprop corresponding to your motor/esc combo!

throws

Using the suggested CG of 55mm behind leading edge following throws are a good starting point:

Aileron: +/- 20mm

Elevator: +/- 10mm

Rudder: Maximum

Camber (Thermal): -3mm

Speed: +2mm

Butterfly/Crow:

Flaps -30mm

Ailerons +25mm

Elevator -2mm

Please try the Crowmode at sufficient height before you use it to land your Naughty!

CG

The right center of gravity is essential for comfortable flight behavior. This is precisely why it should be dialled in individually. The initial value can be assumed to be approx. 55 mm behind the leading edge. If more power and more agile flight behavior is desired, the center of gravity can be shifted further back, but the throws should then also be adjusted.

Please note that the center of gravity and the throws must be dialled in by the pilot himself for each Naughty built - the values given here are only guide values.

We wish you a lot of fun with your Naughty!