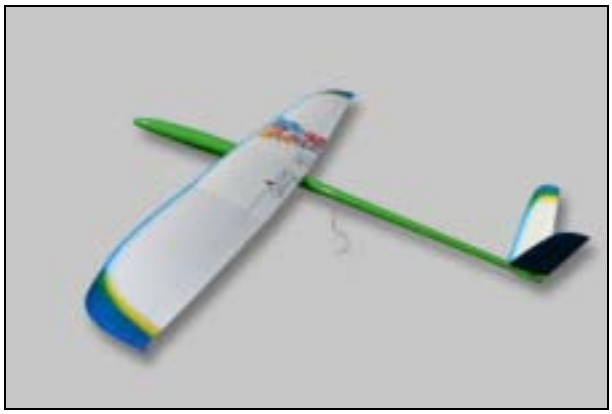
PURE PLEASURE for YOU

Technical support:
VLADIMIR'S Model http://airplane-model.com
e-mail: order@airplane-model.com

GRAPHITE2. Assembling gide

Technical data:
Wing span: **3100 mm**
Wing area: **64.5 dm**
Length: **1515mm**
Ready to flight weight (of the test models):
Glass version: **1920 g.**
Carbon: **2100 g**
F3J extra light version of kevlar: **1800g**
Wing airfoil: **MH 32**
Stabilizer airfoil: **HT14-HT12**
Controlling elements: **V-form tail, ailerons, flaps**



GRAPHITE2 is designed for experienced pilots. Exceptional quality, computer modeling, careful work on aerodynamics, construction designed to combine the extraordinary high strength with minimum weight gives you the feeling of pure pleasure.

This model can be successfully used for different flying types. You can use it as a highest quality glider for slope and termic on one hand and as an electric HOTLINER.

The experience of previous version helped us to get exceptional controllability and flying stability of the model at critically low speed (e.g. at the landing). This is possible thanks to the flaps area increase, adding of the transversal V angle of the wing central panel and the new V-form tail, designed by Dr. Drella.

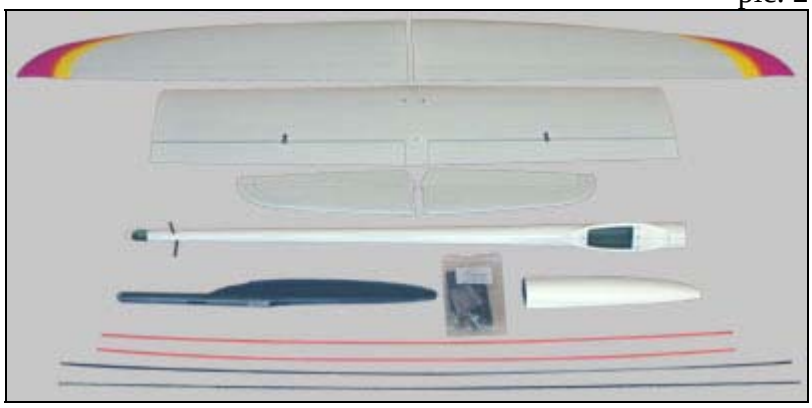
A slight increase of the transversal V angle of the wing allowed to magnify the flying stability and helps you to control the model in termic on long distance and also increased the effectiveness of the ruder.

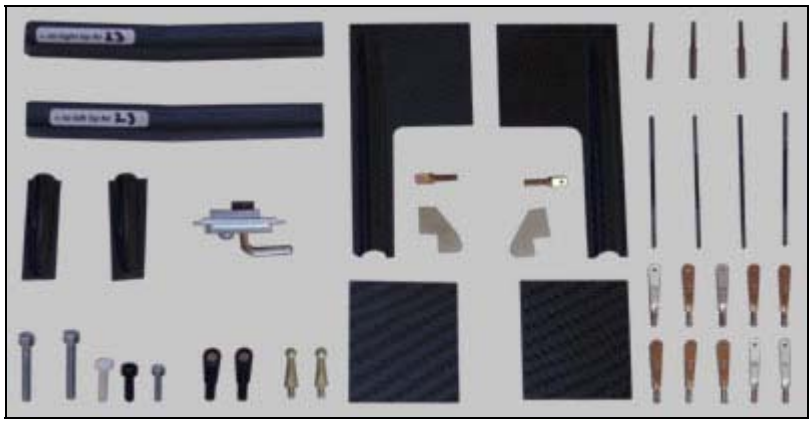
Extraordinary wind penetration will allow you to return from the far distant thermal. A special construction of the fuselage which redistributes loads from the nose to the back part when tough landing during the competition. Also, besides the fuselage is strengthened by a layer of unidirectional high strength carbon.

That's why Graphite2 will completely satisfy the experienced pilots ambitions and will surprise the less eaperienced pilots with it's stable flying characteristics.

Parts of the set

pic. 2





FUSELAGE - color, gelcoated and laminated in the aluminum mould. It's made of kevlar and carbon and has a removable nosecone. Its keel for the RC mounting is made of carbon together with the ballast mounting tube.

WING - color, three-section gel coated and laminated in the aluminium mould has sandwich construction and is made of the materials according to the version. It has a high-tech carbon spare and joiners. THE AILERONS and flaps are completely ready and hinged. They also have wipers closing up the slot when aileron/flap operates.

STABILIZER - color two section gel coated and laminated in the aluminium mould, has sandwich construction and is made of HEREX and fiberglass. It has a carbon spar and joiners. The elevators are ready and hinged. They have wipers closing up the slot.

ACCESSORIES - screws, horns, clevis, metal plugs wing pushrods, carbon pushrod for the elevator, servos covering plates and tow hook.

Non- suplied parts

Controlling equipment: receiver, battary, a switch and also wires, connectors, mounting parts for the servos, motor, gear, speed controller, battery, spinner, propeller.

Assembling instruction

Please read this instruction to the full before assembling the model.

This instruction is just a recommendation for you. You can assemble the model, choose and combine the equipment your own favorite way.

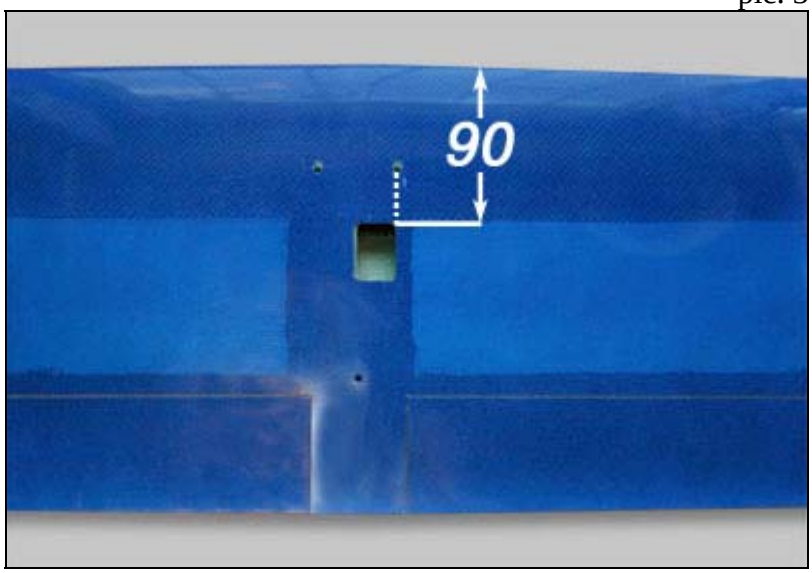
Please be careful with the wing and stabilizator surfaces when assembling the model and mounting the controlling equipment and regulating the model.

ATTENTION!
Any instruments or stiff things may spoil your new model when getting under the surfaces!

1. Wing

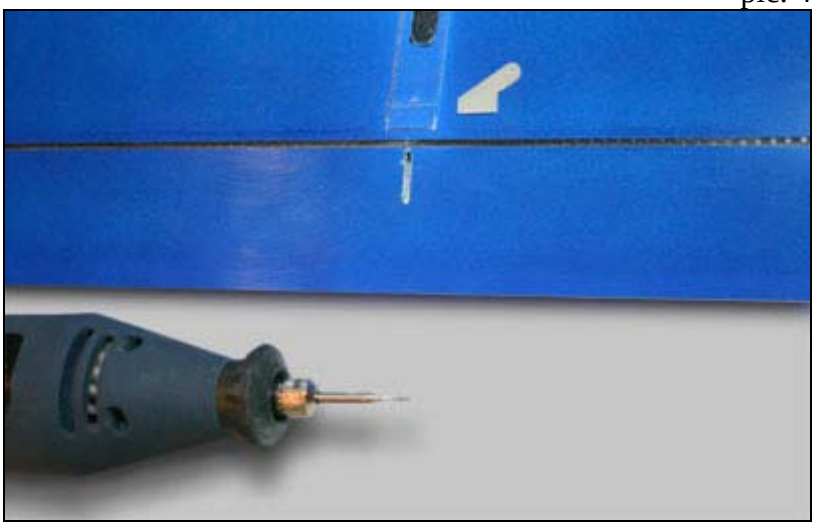
Prepare the wires with connections to install the servos in the wing. Use only high quality wires and connectors.

pic. 3



Make a hole in the wing to install the central connector (don't make a hole in the wing spar, which is situated behind the holes for the wing screw).

pic. 4



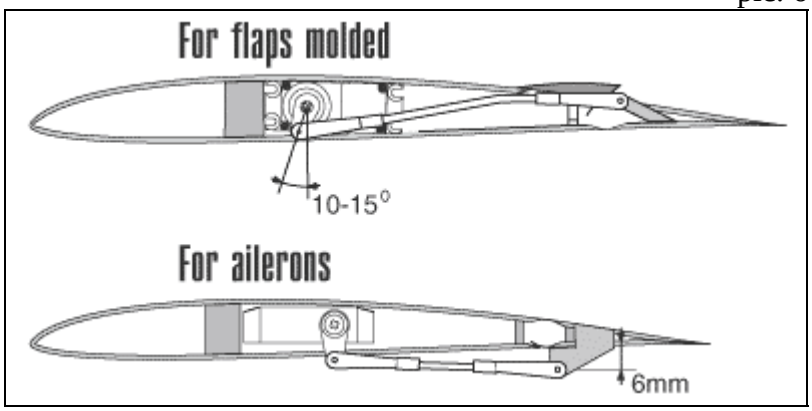
Make slots for the aileron horns (be careful!! Don't spoil the upper covering).

pic. 5

Insert horn and glue it into the aileron by the cyanoacrylate adhesive (as shown at the picture 5).

Screw flap horns in deep as possible.

pic. 6



ATTENTION!
Don't permit the glue to flow into the flap hinges or leave the glue stains on surfaces. Use the a accelerator for faster gluing!

Before mounting the servos move the servo horns to the neutral position as shown at the picture 6.

ATTENTION!
After fixing the servos you can not screw out the servo horns. Regulate the horns to the neutral position before gluing the servos into the wing.

Mount the servos into the wing by the special units for the Volz Micro Maxx servos mounting or glue them with epoxy.

If gluing with epoxy pay attention to the moving parts isolation. Don't let the glue flow in between the moving and fixed parts of the construction.

WARNING!
If your servos can't stand high loads you can face a controlling surfaces flatter, which may cause your model crash.

Use only high quality servos for your model:

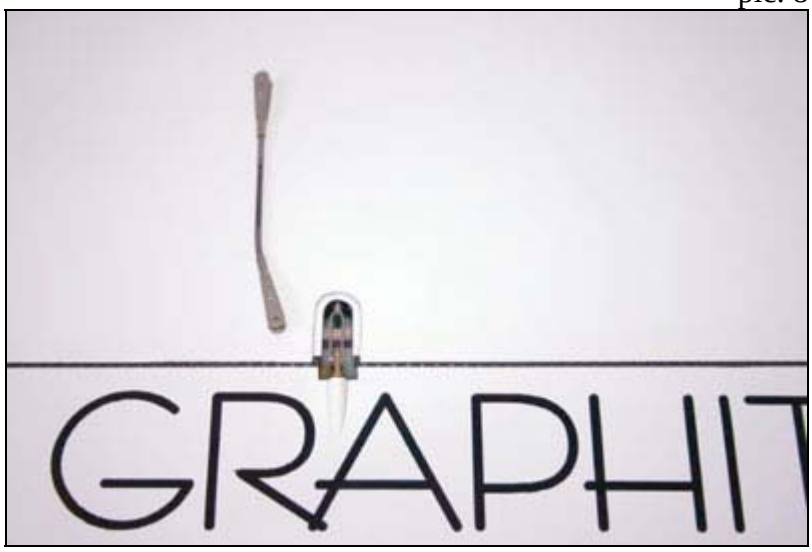
- MPX Micro Speed Digi or JR DS368 for the flaps

- MPX FL Digi or JR DS368 for the ailerons

pic. 7

After the epoxy polymerization regulate the length of the ailerons and flaps rods. Bend the flaps rods up as shown at the picture 8, to avoid their touching the fixed parts when moving.

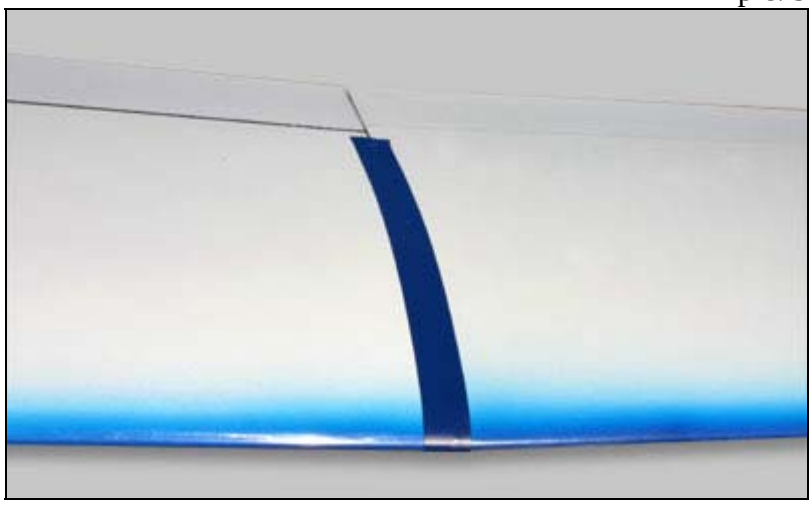
pic. 8



Be careful: the plugs are to be screwed to the rods tightly to avoid their free motion.

Cover the servo well by the servo plate using the double sided tape. Work up and glue the small upper well by the cyanoacrylate adhesive.

pic. 9

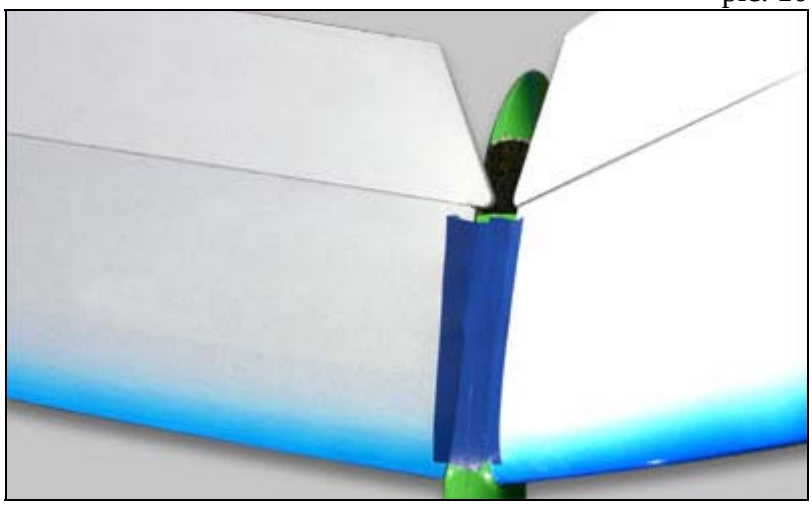


Tape wing tips before flying!

2. STABILIZER

The stabilizer is completely ready and doesn't need working up. Screw in the horns into the holes and fix them together with the balls by the cyanoacrylate adhesive.

pic. 10



Tape stabilizer to fuselage before flying!

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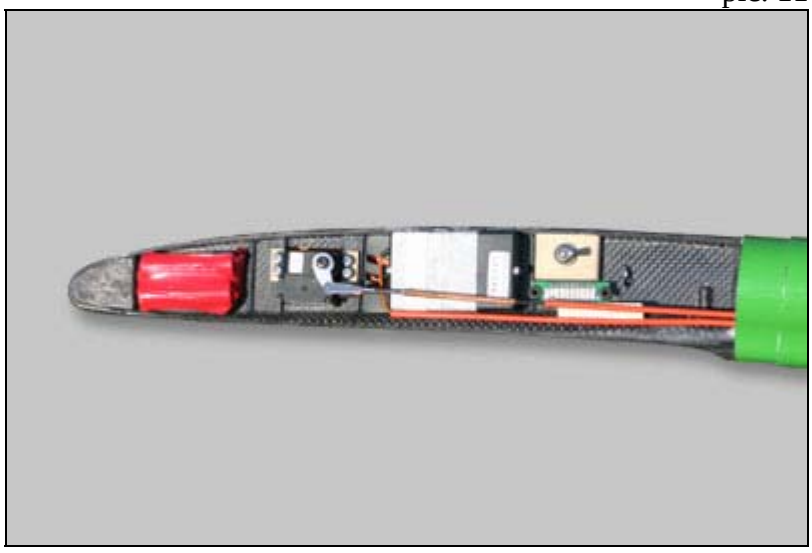
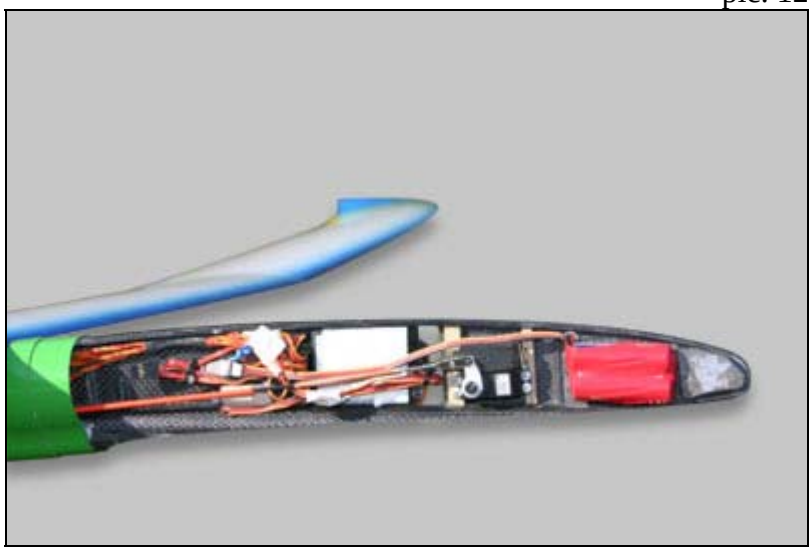
3. FUSELAGE

pic. 11

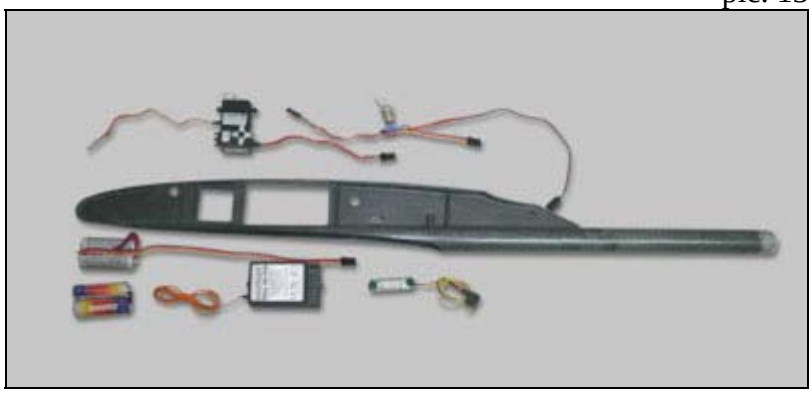


Think over the positions for the servo, the receiver and the accumulator in the fuselage attentively or use our recommended positioning.

pic. 12



pic. 13



pic. 14

Glue the plywood bars for servos mounting into the slots. The back slot is wider to make it possible to increase the window if you use bigger servos (max size - 16mm thick e.g. MPX Micro Speed Digi).

Cut the height of the plywood bars to get a 1mm space between the servo horn and the back surface of the nearby servo to fix the plug. Pay attention that the center of the tongue is to be situated between the maximum outstanding both servos parts. Screw the servos and check that they don't contact the nose cone.

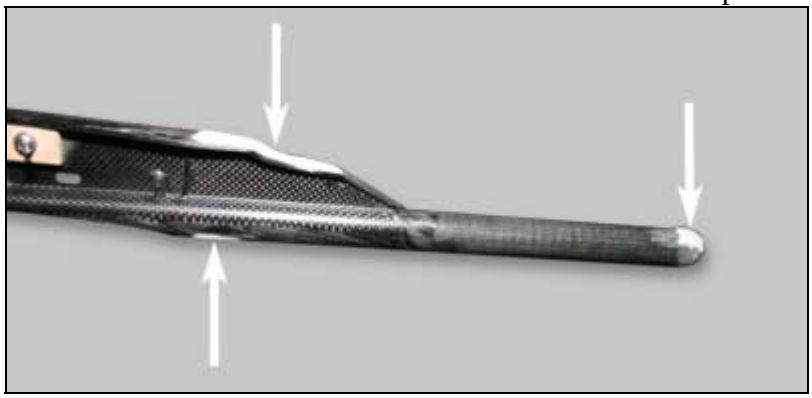
pic. 15

pic. 16

pic. 17

Solder the accumulators in pairs. Solder the wire through the tongue and fix the accumulators by the thermo film. Glue the accumulators in the thermo film to the tongue by the cyanoacrylate adhesive.

pic. 18



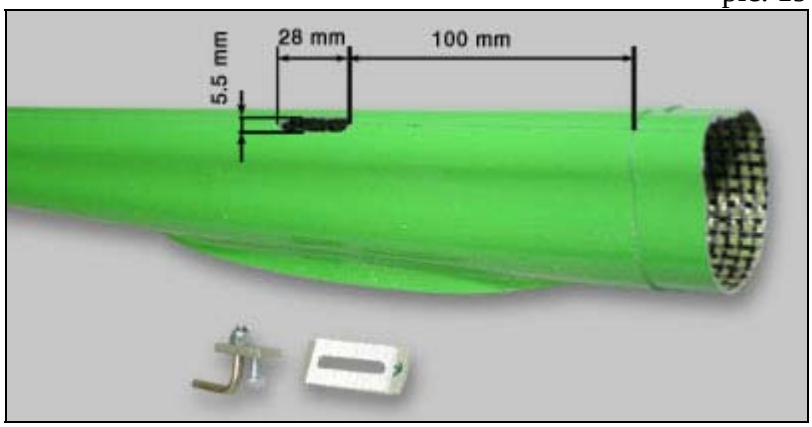
Make the needful size hole in the fuselage to mount the tow hook (as shown at the picture 18). For better adhesiveness sand the inner part of the fuselage by the sanded paper in the gluing spot.

Glue in the tow hook unit with the epoxy.

After the epoxy polymerization cut the part of the tow hook unit flush with fuselage.

Screw the tow hook.

pic. 19



Sand the tongue gluing spots inside the fuselage by the sanded paper. Paste the epoxy on to the tongue in the spots shown with arrow at the picture 19 and 23, and glue it into the fuselage.

Wipe out the extra epoxy. Check the tongue gluing depth by putting the nose cone on. Put off the nose cone and check if the tongue and fuselage gluing axis coincide. Wipe the extra epoxy. Fix the tongue with the glue tape untill the epoxy polymerization.

pic. 20

Make a hole in the fuselage to glue the pushrods pipes as shown at the picture.

Glue the pushrod tip to one side of each rod and screw the ball tips on.

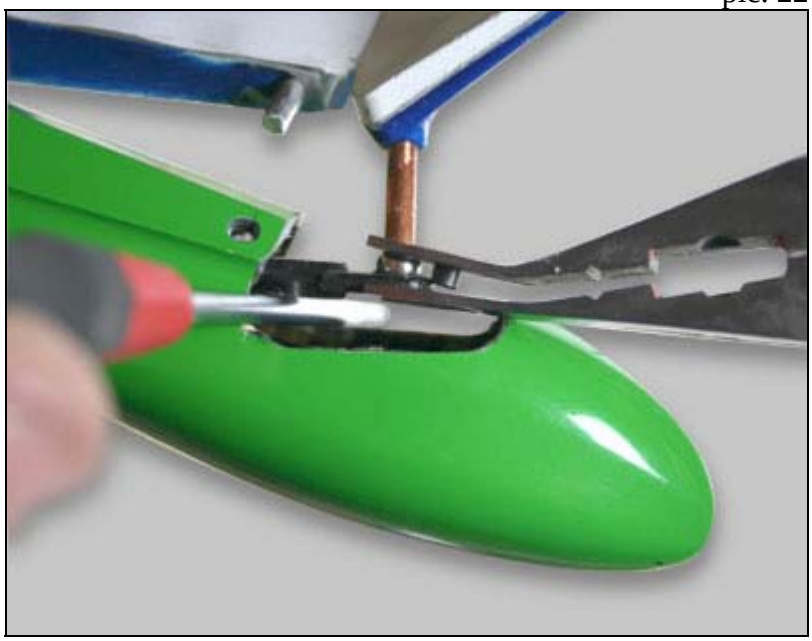
Fix the pipes together in two spots by the glue tape. Put the rods into the pipes and then put them into the fuselage. The pipes are to end at the same point where the stabilizer joiner is. Press the pipes to the lower part of the fuselage and glue them by the cyanoacrylate adhesive through the hole in the fuselage.

Watch carefully to prevent the glue getting inside of the pipe and fixing the rod. For this put the fuselage vertically tail up.

pic. 21

Mount the stabilizer and put the ball rod tips to the horns. Use special instruments to put the ball stabilizer tips on to the horns. You should put the rod out of the fuselage and fix it with some pin (e.g. small screw driver) before putting the horn into the rod tip (as shown at the picture).

pic. 22



Pull the pipe in the servo horn direction and glue it to the ballast mounting tube through the hole at the place of wing fixing.

Cut the rods so that after putting on the tips with the screwed on plugs you could get approximately neutral position of the elevators when the servo horns also have neutral position. Then glue the tips to the rods.

Watch carefully to prevent the glue getting inside of the pipe and fixing the rod.

Make several wooden supports for the pipes and fix them as close to the servos as possible. Regulate the length of the rods by screwing the plugs onto them to get the coincidence of the neutral position of the servo horns and the elevators.

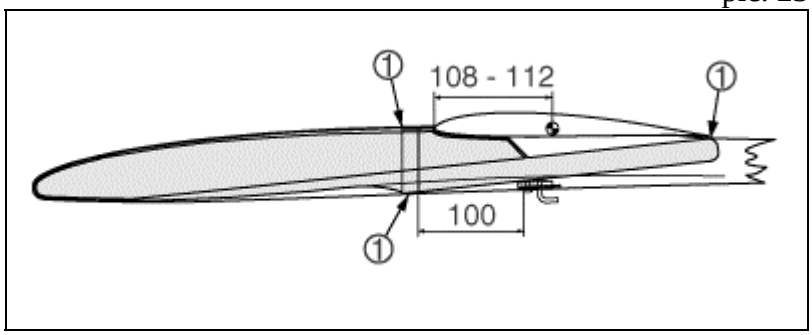
Warning!
As carbon is used for the fuselage the receiving antenna is to stand out of the fuselage as close to the receiver as possible. You should fix it to outside the fuselage by the glue tape and pull its end to the V-form tail.

Pay attention to this warning!

4. Model gravity center regulation

The center of gravity of the model is to be situated 110mm back from the wing front edge. Choose the needful weight ballast and glue it in the front part of the tongue.

pic. 23



You can regulate the center of gravity more carefully during the flight according to your flying style.

5. RECOMMENDED DEVIATION OF THE CONTOROLLING SURFACES FROM NEUTRAL

Ailerons +12-17 mm / -5-10 mm

Elevator +12 mm / -12 mm

Rudder +10 mm / -10 mm

Take off mode (glider version)

Ailerons downwards 5 mm

Flaps downwards 5 mm

Elevator upwards 1mm*

* *Regulate to the maximum though the machine shouldn't "dance" at the start*

Airbrake mode:

Ailerons downwards 2-3 mm

Flaps downwards 800

Elevator downwards 3-4 mm**

** *In order the machine doesn't pitch up and dive when the regime is on*

Speed mode:

Ailerons upwards 1-1.5 mm

Flaps upwards 1-1.5 mm

Elevator upwards or downwards 0.5-1 mm***

*** *According to the situation*

Termic mode:

Ailerons downwards 0.5-2.5 mm

Flaps downwards 0.5-2.5 mm****

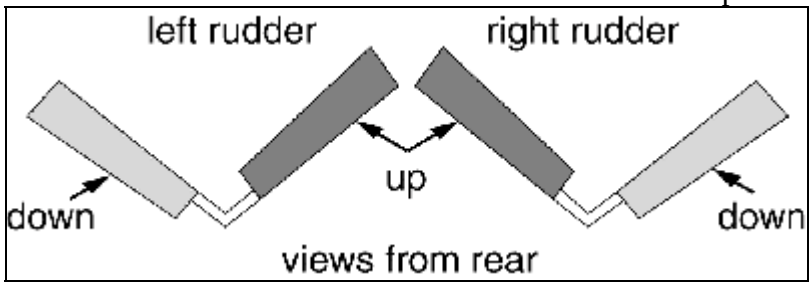
**** *According to the termic strength*

Flaps position relatively to the elevators moving:

You can adjust the flaps deviation relatively to the elevator position upwards (but only upwards). It's preferable to be able to switch off this function during the flight.

Turning rudder regulation :

pic. 24



Regulate the deviation of the turning rudder during the flight in order the machine doesn't pitch up or dive when you turn only the turning rudder.

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6. Ballast mounting

You can make a ballast from a metal bar (diameter less than 20.5mm). You can use aluminum (up to 370g), steel (up to 700g), lead (up to 100g) or a heavier metal (up to 1200g).

The ballast center is to coincide with the center of gravity (if of course you don't want to change the center of gravity position when the model is heavier). Fix the ballast by the M3 screw.

WARNING!
As carbon is used for the fuselage the receiving antenna is to stand out of the fuselage as close to the receiver as possible. You should fix it to outside the fuselage by the glue tape and pull its end to the V-form tail.

Pay attention to this warning!

Please be careful and attentive with your GRAPHITE2 model.

Don't forget: it's always easier to check everything before the flight than after the crash!

We wish you many happy flying hours with your Vladimir's model.