

Manual

PEP

R/C electric airplane

No. 4318



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Introduction

Thank you very much for purchasing the **Graupner PEP**. This **4318** is extremely versatile. This manual is valid for all the models listed on the cover sheet.

Read this manual carefully to achieve the best results with your **4318** and first of all to safely control your models. If you experience any trouble during operation, take the instructions to help or ask your dealer or **Graupner** Service Centre.

Due to technical changes, the information may be changed in this manual without prior notice. Be always updated by checking periodically on our website, **www.graupner.de** to be always uptodate with the products and firmwares.

This product complies with national and European legal requirements.

To maintain this condition and to ensure safe operation, you must read and follow this user manual and the safety notes before using the product!



NOTE

This manual is part of that product. It contains important information concerning operation and handling. Keep these instructions for future reference and give it to third person in case you gave the product.

Service centre

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For the service centers outside Germany please refer to our web site www.graupner.de

Intended use

PEP is an electric airplane model for advanced beginners. It is suitable for 2S lipo batteries up to max. 2200 mAh. The flight characteristics and look of the model depend directly on the quality of the bodywork, so the assembly of the model requires a precise and considered approach.

PEP is designed exclusively to be used in battery-powered, radio controlled models, any other use is not allowed. For any improper use no guarantee or liability is assumed.

Read through this entire manual before you attempt to install or use the **PEP**.

Graupner/SJ constantly works on the development of all products; we reserve the right to change the item, its technology and equipment.

Target group

The item is not a toy. It is not suitable for children under 14. Young people should be overwied and helped by experienced model makers while assembling and flying this model. The assembly steps are described as follows and illustrated with assembly photos and sketches.

If you do not have sufficient knowledge about assembling and dealing with aircraft models, please contact an experienced modeler or a model club.

Glue

UHU-Holzleim is suitable for almost all of the required gluing processes. For some adhesive joints, however, superglue is prescribed, as indicated in the instructions below.

Parts list No. 4318

Nr.	Name	Pcs	Material	Dimension in mm
1	Fuselage lower part	1	Balsa	Laser part 6
2	Cover	1	Balsa	Laser part 6
3	Fuselage lower part	1	Balsa	Laser part 6
4	Bulkhead	1	Plywood	Laser part 3
5	Bulkhead	1	Plywood	Laser part 3
6	Bulkhead	1	Plywood	Laser part 3
7	Bulkhead	1	Plywood	Laser part 3
8	Reinforcement	2	Balsa	Laser part 3
9	Reinforcement right	1	Balsa	Laser part 3
10	Reinforcement left	1	Balsa	Laser part 3

11	Triangle stick	4	Balsa	60 x 7 x7
12	Support	1	Plywood	Laser part 3
13	Captive nut	2	Steel	M3
14	Polyester band	1	Polyester	80 x 15 x 0,2
15	Fuselage side part right	1	Balsa	Laser part 3
16	Fuselage side part left	1	Balsa	Laser part 3
17	Pushrod tube	1	Plastic	Ø 1,85/0,9 x 330
18	Sunk-head screw	2	Steel	M3x6
19	Holder	1	Plywood	Laser part 3
20	Cover part	1	Balsa	Laser part 6
21	Cover part	1	Balsa	Laser part 3
22	Cover fixation	1	Plywood	Laser part 3
23	Reinforcement	1	Plywood	Laser part 3
24	Cover lock	1	Plywood	Laser part 1
25	Tapping screw	1	Steel	Ø 2,9 x 9
26	Cover disc	1	Plywood	Laser part 1
27	Elevator	1	Balsa	Laser part 3
28	Conjunction part	2	Balsa	Laser part 3
29	Elevator	1	Balsa	Laser part 3
30	Rudder	1	Balsa	Laser part 3
31	Rudder	1	Balsa	Laser part 3
32	Elevator pushrod	1	Steel	Ø 0,5 x 370
33	Rudder horn	3	Plywood	Laser part 1
34	Rudder hinge (not included)	1	Plastic	240x20x0.1
35	Wing central part	1	Balsa	Formed part 6
36	Reinforcement	1	Pine	750x6x6
37	Winglet	2	Balsa	Formed part 6
38	Edge profile	1	Balsa	200x25x6
39	Edge profile	2	Balsa	135x25x6
40	Aileron	2	Balsa	273x25x6
41	Reinforcement	1	Plywood	Laser part 1.4
42	Servo cover back	4	Balsa	Laser part 6
43	Rudder linkage	2	Steel	Ø 0,5 x 50
44	Reinforcement	2	Plastic	Ø 1,85/0,9 x 30
45	Servo cover front	4	Balsa	Laser part 6
46	Reinforcement	1	Pine	220x7x1.5
47	Cable tray	1	Balsa	Laser part 2
48	Cover (not included)	2	Plastic	75x20x0.1

49	Rudder hinge (not included)	2	Plastic	270 x 20 x 0,1
50	Sunk-head screw	2	Polyamide	M3x16
51	Decals sheet	1	Self- gluing film	180 x 65 x 0,1
52	Angle template 88°	1	Plywood	Laser part 3
53	Support	1	Balsa	Laser part 3
54	Sanding block	1	Hardwood	120x40x20

Technical data

Wingspan approx.	1000 mm
Length o.a. approx.	625 mm
Wing area approx.	10,8 dm ²
Tailplane area approx.	2,2 dm ²
Total surface area approx.	13 dm ²
Flight weight approx.	365 g
Wing loading approx.	28 g/dm ²
Current consumption approx.	10 A

Required tools and facilities (not included)

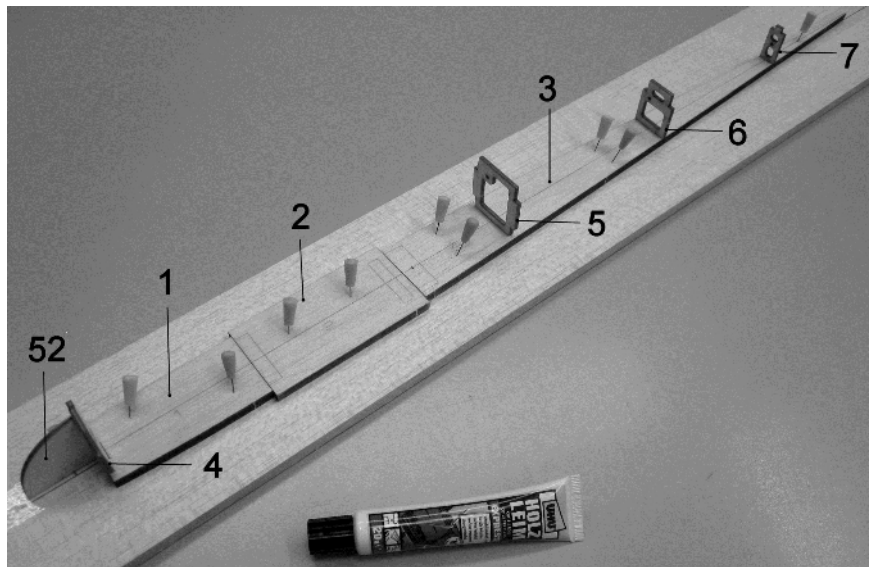
No. 958.60	UHU-Holzleim express
No. 5821	Cyano glue
No. 953.150	Activator for cyano glue
No. 504.C.10,0	Building board appr. 1000 x 100x 10 mm
No. 980	Balsa cutter
No. 737	Balsa plane
No. 717	Fixing needles
No. 5779.2	Phillips screwdriver PH2
No. 693.1	Hinges tape
Small flat-nose pliers, side cutters, hand-operated saw, fibre pen, tri- angle ruler, ruler, soft pencil, scissors, transparent film	

Recommended accessories (not included)

No. S1002.PRO.DE	Transmitter mz-12 PRO HoTT.DE
No. 4318.90	RC conversion kit
No. 6464	Battery charger ULTRAMAT 14plus
No. 3037	Charge cable BEC
No. 207	Glattfix pore filler
No. 208	Brush
No. 1409	Spannfix-thinner
No. 700.1	Sanding paper

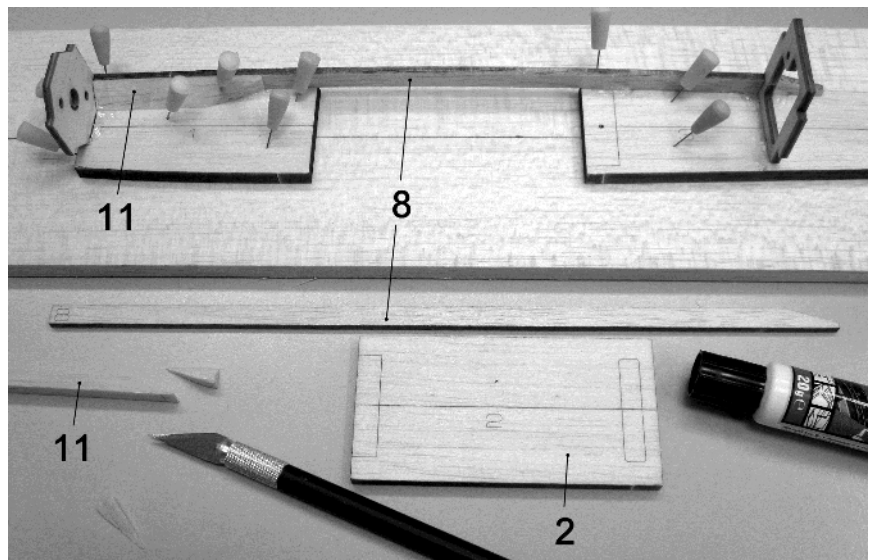
Assembly step 1

First mark a straight line in the middle of the construction board, then cover the construction board with transparent film so that no parts stick to it. Fasten the fuselage bottom (1) and (3) as well as the cover (2) congruently. Insert the cover (2) loosely, do not glue it. Glue the bulk (4) inclined by 2° forward using the angle template (52). This results in a motor inclination of 2° . Glue the other bulks (5) to (7) vertically.



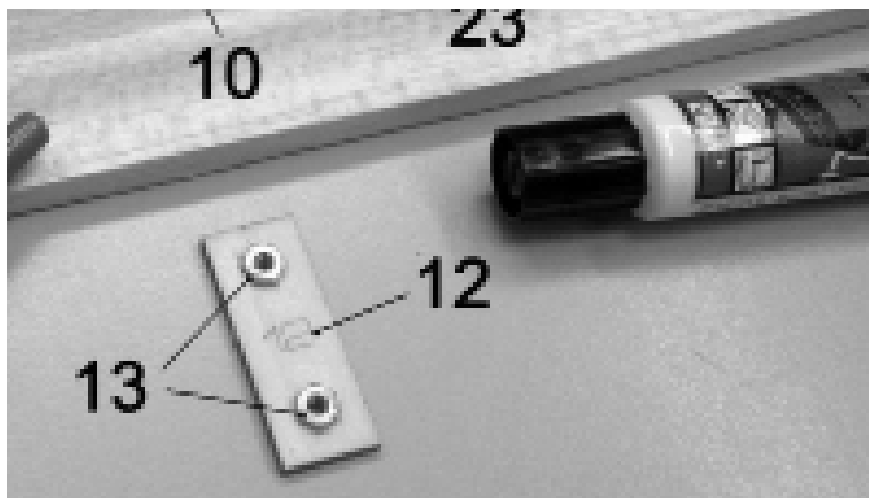
Assembly step 2

Remove the cover (2). Chamfer the triangular strips (11) at the back over a length of 2 cm, then glue them together with the reinforcements (8) and secure them. Make sure that both reinforcements (8) are exactly flush with the outer edge of the fuselage bottom parts (1) and (3). Only when the adhesive has dried out well, detach the fuselage from the construction board and grind its sides with the sanding block.



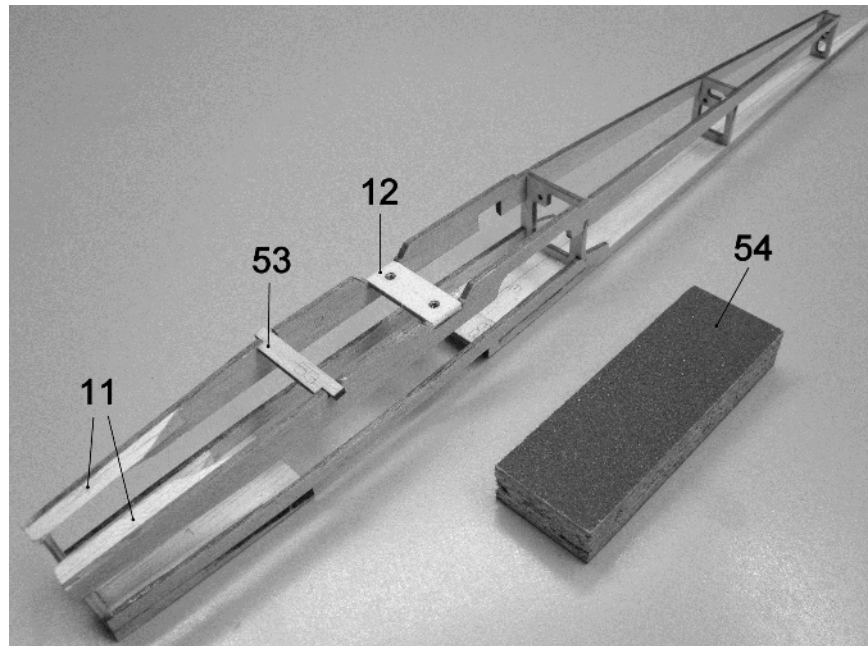
Assembly step 3

Glue the part (23), the hole must match the one in the fuselage bottom (3). Glue the reinforcements (9) and (10) with the triangular strips (11) and secure them. Glue the part (53). Press the nuts (13) into the support (12) and glue them with instant glue. Make sure that no glue penetrates the threads of the nuts. Round off the outer side edges of the support (12) on the top, then glue in the support. The rounded edges are required so that later the band (14) fits well.



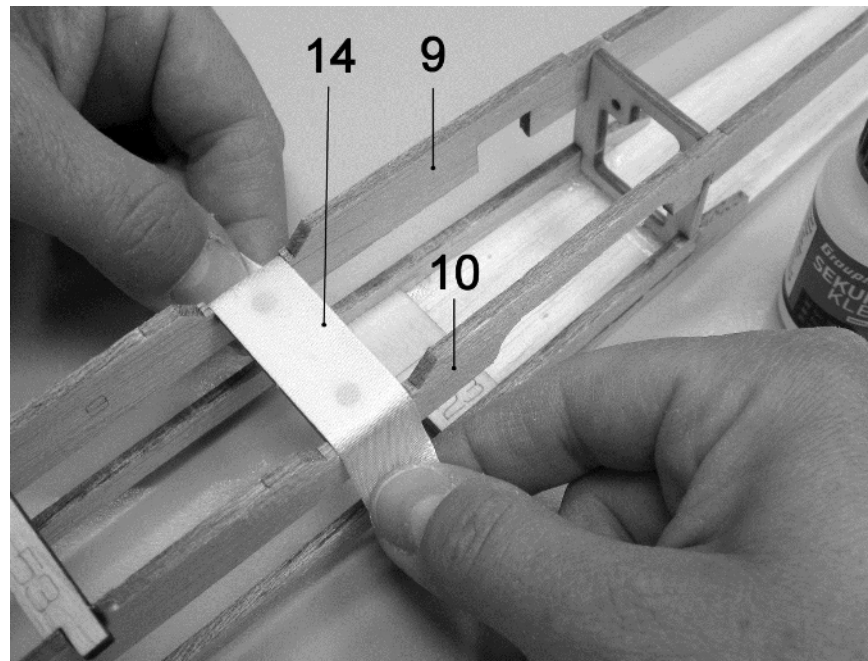
Assembly step 4

After hardening the wood glue, carefully remove the fuselage from the construction board. Sand the outer sides of the fuselage with the sanding block (54) using the coarse grained side. Do not sand off the protruding noses of part (53). Please note that this sanding work is carried out thoroughly, this is very important for the further construction and is the prerequisite for an optimally shaped model fuselage.



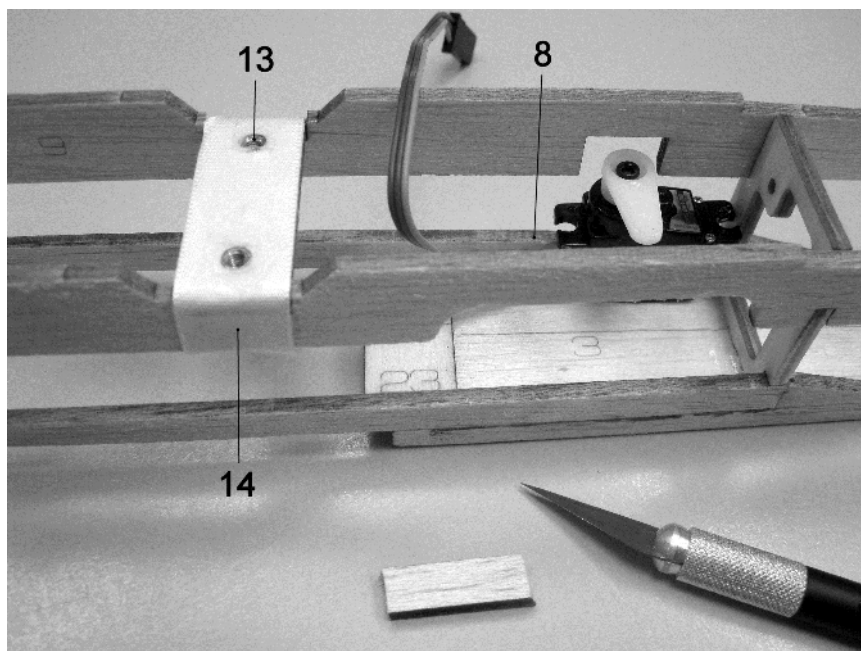
Assembly step 5

Stick the polyester tape (14) with superglue as shown in the picture on the left. Apply the super glue to the support (12) and reinforcements (9) and (10) before stretching the polyester tape. Please make sure that this bonding process is carried out exclusively with instant adhesive, as no other adhesive ensures a sufficiently good bond between polyester and plywood or balsa wood. During the later flight maneuvers the multiple fly forces of the model weight must be absorbed by the support (12).



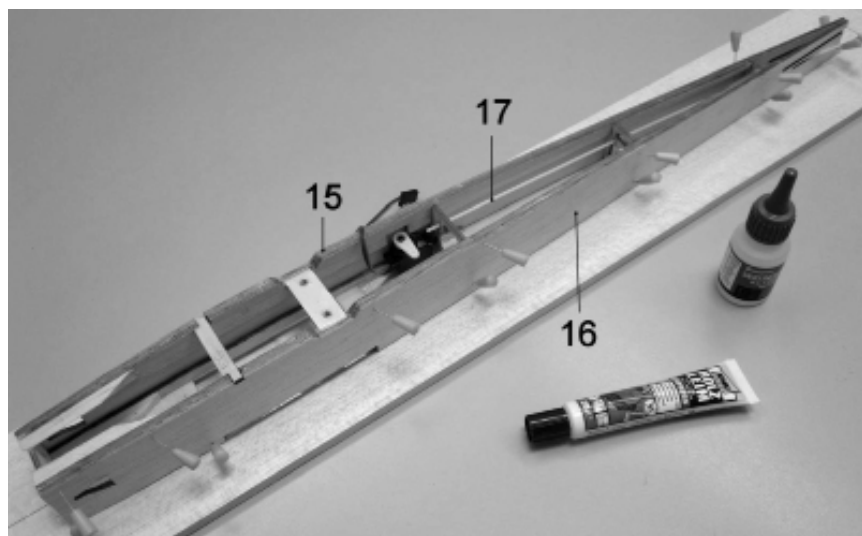
Assembly step 6

Cut off the ends of the polyester tape protruding below and cut the tape over the nuts (13). Try to install the elevator servo from RC drive set No. 4318.90 (No. 4318.90 is not included in the quick-kit No. 4318). To do so, spare the right-hand reinforcement (8) accordingly. This process takes place only at the present time, so that the reinforcement (8) is rectilinear. The elevator servo can already be fixed in the fuselage with a few drops of instant glue. Make sure the servo is flush with the outer edge of the fuselage bottom.



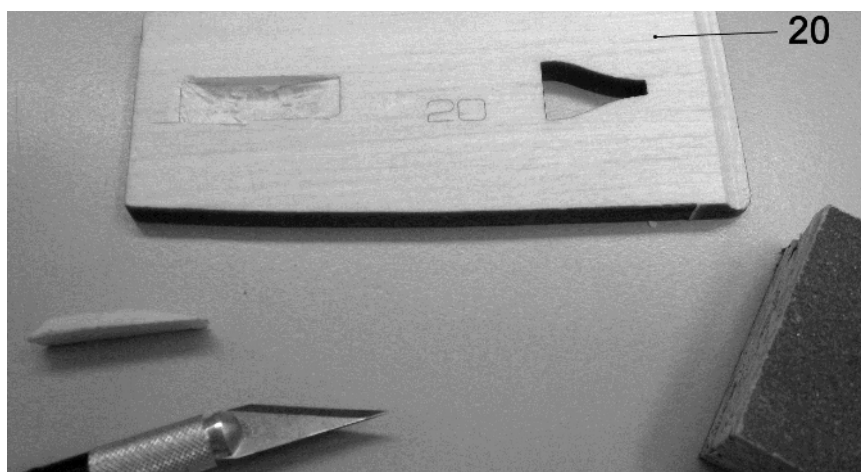
Assembly step 7

Pin the fuselage back onto the construction board with fixing needles. Then glue and fix the fuselage side pieces (15) and (16). Make absolutely sure that both sides of the fuselage are resting exactly on the construction board without any gaps, and that super glue is applied in the area of the polyester tape (14). Insert the pushrod outer tube (17) and also glue in with the instant adhesive.

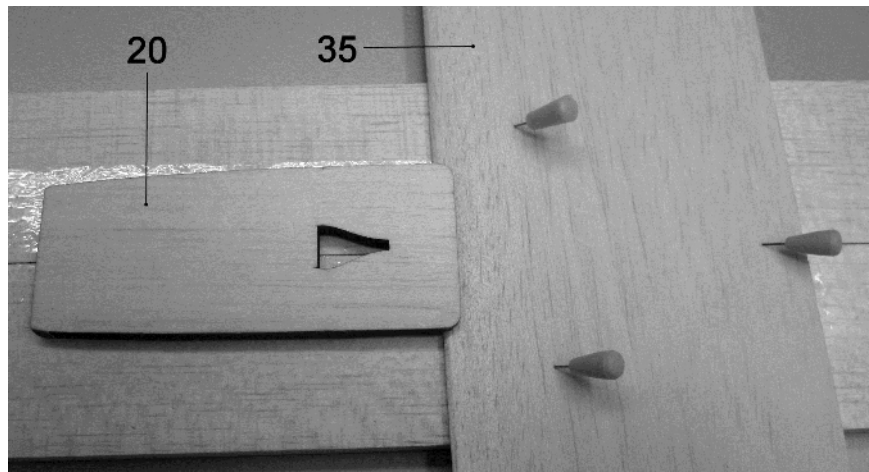


Assembly step 8

Prepare the fuselage nose cover (20) for further assembly. To do this, cut out the field engraved in front with the balsa cutter according to the illustration. The recess should be 5 mm deep, so that later the motor leads can have space. Sand the end edge according to the leading edge of the wing

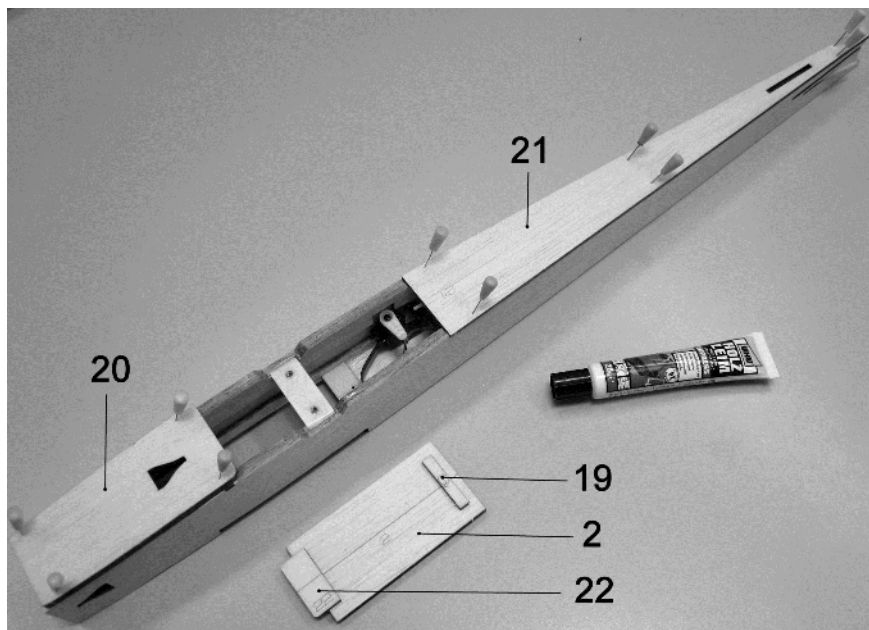


(35) with the sanding block. To check, attach the wing to the building board as shown in the figure and place part (20). Please note, the small radius is on the underside of the wing, the top is profiled to a depth of about 15 mm finished with a large radius.



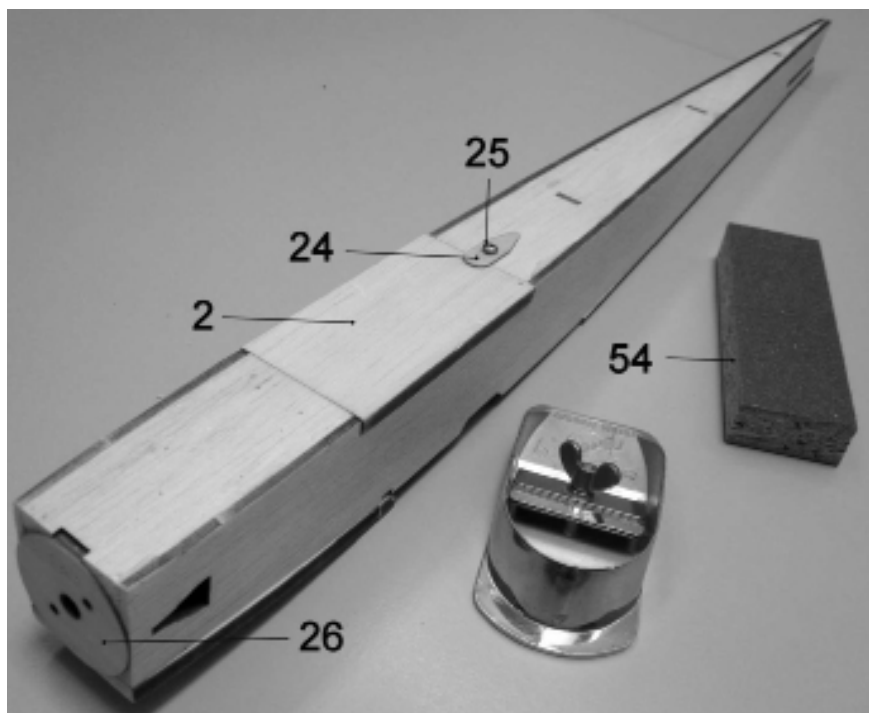
Assembly step 9

Thoroughly sand the top of the fuselage with the sanding block (54), then glue on the hull covers (20) and (21) and secure them. Make absolutely sure that the elevator support cover (21) is glued exactly in the middle, because otherwise later the rudder sits off-center or diagonally. Glue the parts (19) and (22) onto the engraved fields of the cover (2).



Assembly step 10

Insert the cover (2), screw on the cap (24) with the screw (25). Sand the front of the fuselage and glue on the front cover (26), use instant adhesive; with wood glue the thin plywood would bend. Now give the hull its shape by refining its aerodynamic shape.

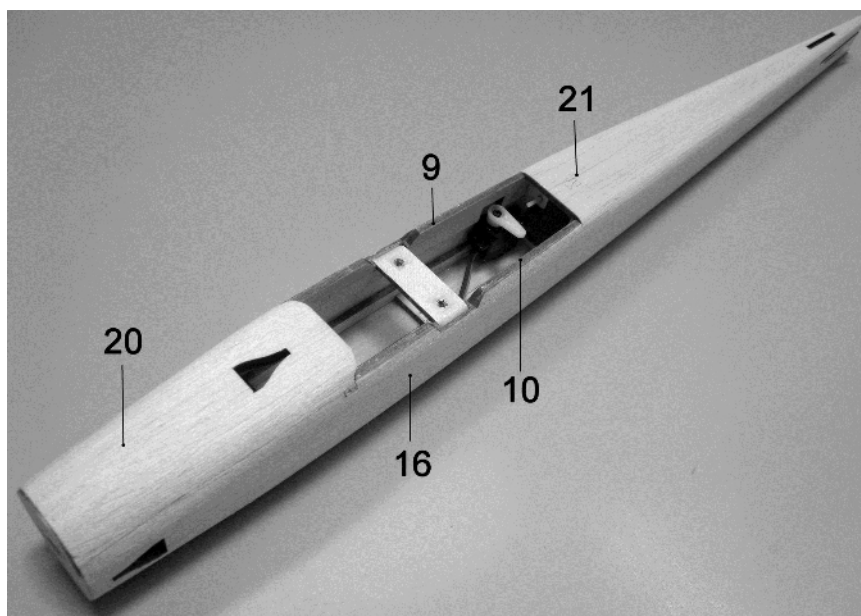
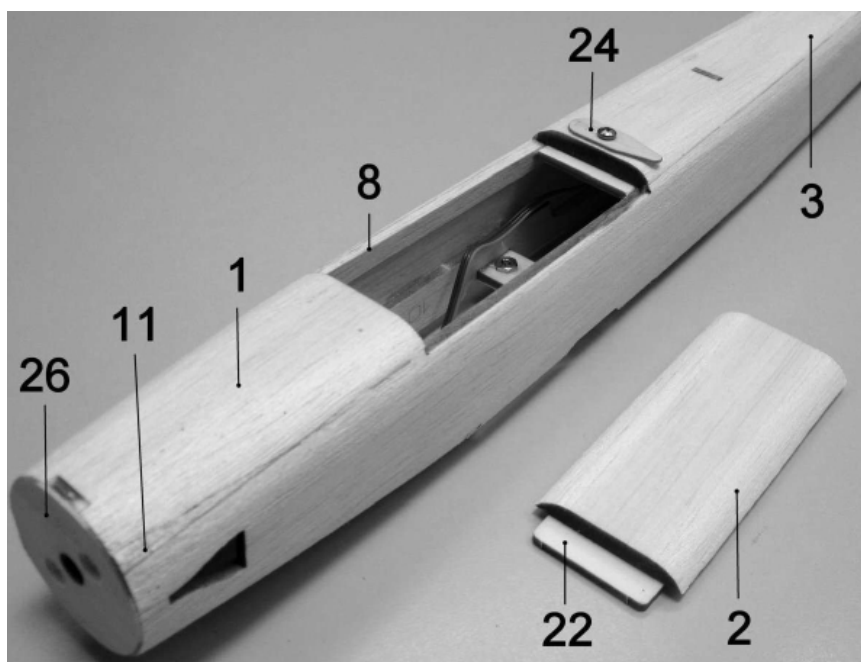


The disc (26) serves as a template. First round off the fuselage edges with the balsa plane, then with the coarse-grained side of the sanding block (54).

Make sure that the left and right sides are evenly rounded by removing the cover (2). Lower the holes in the bulkhead (4) and (26) for the screws (18).

The figure on the left shows the finished and sanded upper side of the fuselage.

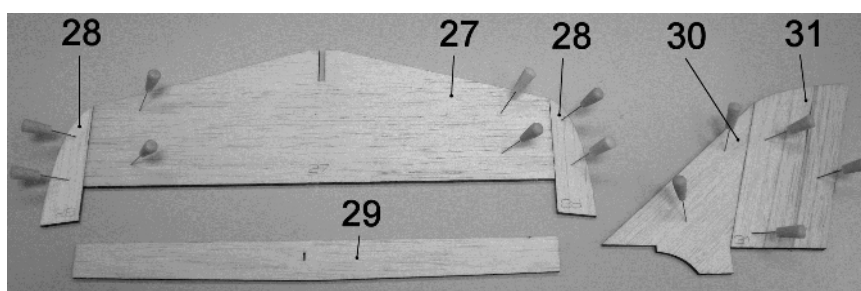
Please note that there is still 3 mm contact surface at the tail end for the rudder. In the area of the wing support, grind the fuselage so far that the upper edge of the fuselage side parts (15) and (16) is only approx. 0.5 mm wide. If the fuselage is optimally shaped this has two positive effects, on the one hand it has a low air resistance and on the other hand, the fuselage weight is reduced significantly. The fuselage retains its good stability even when rounded.



Assembly step 11

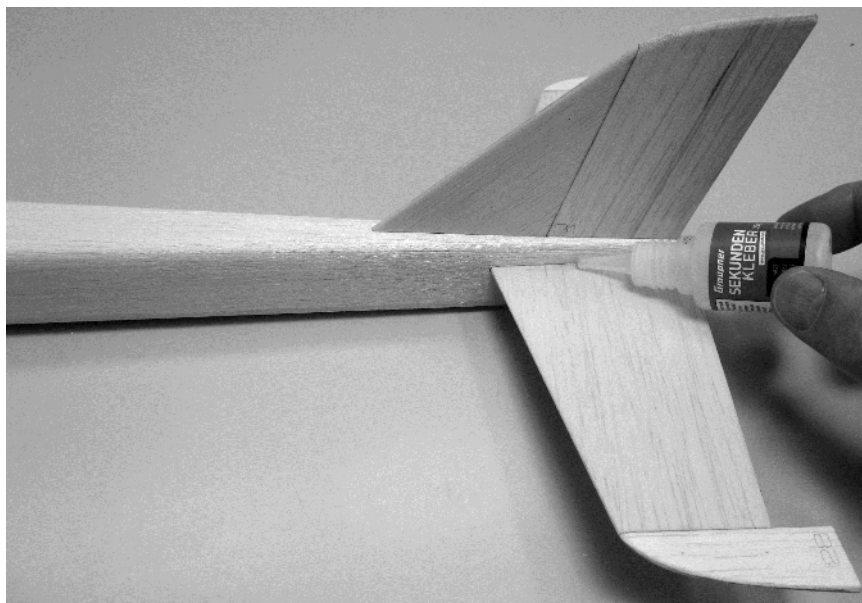
Glue and fix the tail parts as shown. Bevel the front edge of the elevator (29) at the bottom by about 30 °, making sure that the slot for the rudder horn (33) is on the left side.

Round the front edges of rudder and elevator using the grinding block, not the end edges.



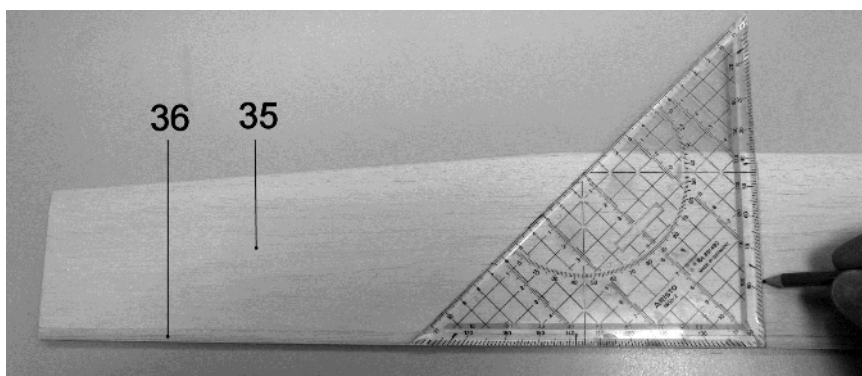
Assembly step 12

Insert the prepared tail units into the fuselage and align them exactly, place the wing (35) on the fuselage for control, sight from the front whether the rudder is vertical and the elevator is parallel to the wing. If necessary, check with a triangle ruler placed on the wing. If all is correct, as shown, apply a few super glue in all corners between the fuselage and tail. The assembly of the fuselage is complete.



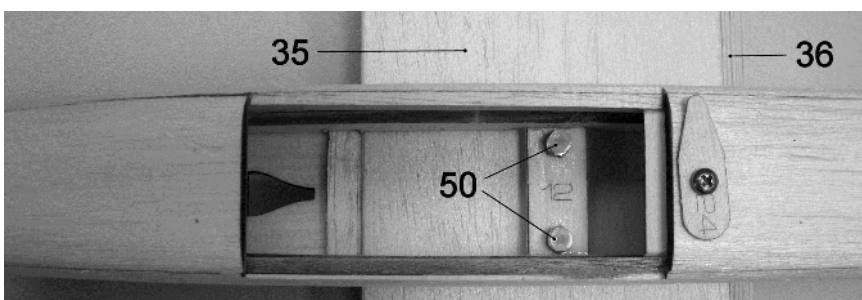
Assembly step 13

Glue the reinforcement (36) to the end edge of the wing (35). Fix the strip (36) from below with adhesive tape on the wing without gaps. Then tilt the bar slightly downwards and apply super glue from the top, close it again and immediately wipe off the excess adhesive. Mark the center line on the top and bottom with a soft pencil, never press down firmly.



Assembly step 14

Place the wing centered on the fuselage and align it at right angles by means of a square triangle. Then fix the wing from the top with four fixing needles. Open the flap (2) and screw in the screws (50) from below until they impress a mark on the wing. Remove the wing and unscrew the screws (50).



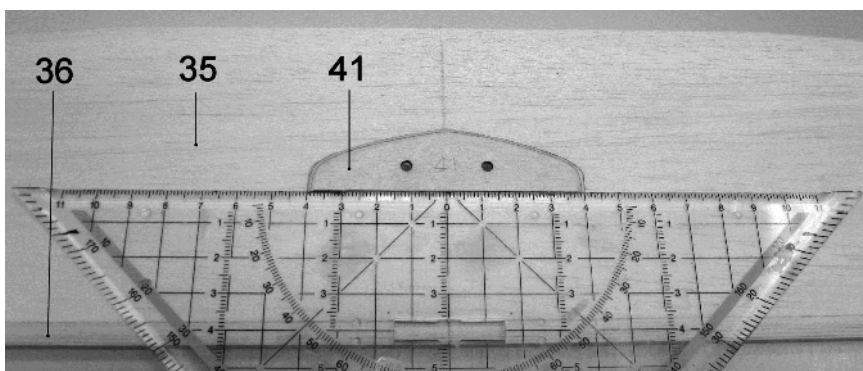
Assembly step 15

Bevel the leading edge of the reinforcement (41) before sticking.

Then stick together with the holes in the wing (35).

Check that the end edge is parallel to the wing leading edge and check the triangle ruler.

Lower the holes for the screws (50) so that the screw heads do not protrude.

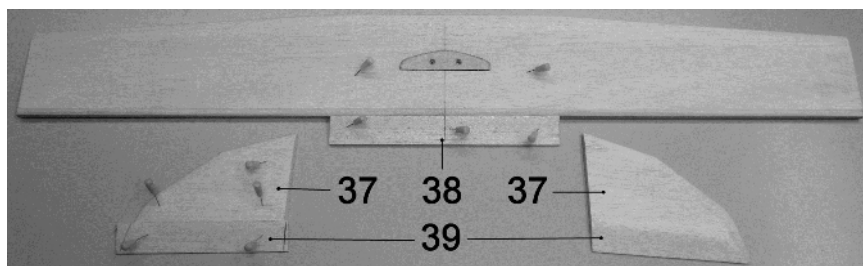


Assembly step 16

Cut off the end strips (38/39) and glue them on, the underside should rest flat.

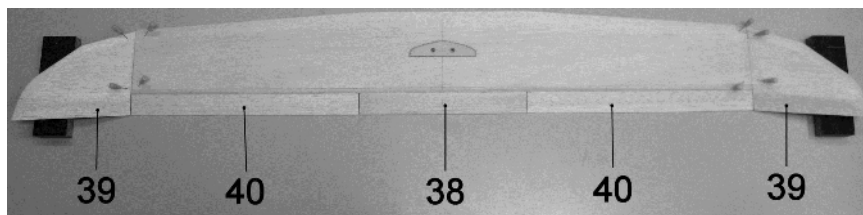
Then align the end strips (39) to the contour of the winglets.

Sand the top of the wing using the fine-grained side of the sanding block (54).



Assembly step 17

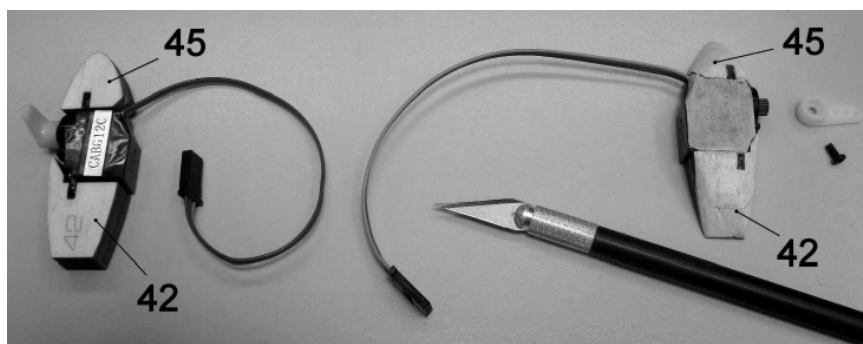
Glue the winglets (37) to the wing by firmly attaching the wing to the building board. Loosely insert the ailerons (40).



The V-shape of the winglets is 15° corresponding to 35 mm, measured at the end of the wing. When the wood glue has hardened, sand the wing using the fine-grained side of the sanding block (54).

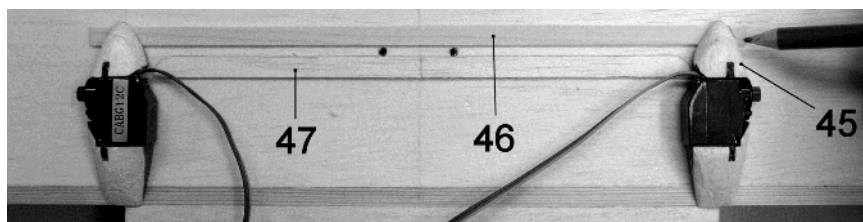
Assembly step 18

Glue the servo covers (42) and (45) together and glue them to the fastening straps with a few instant glue. Cover the servo housing with adhesive tape so that it will not be damaged when sanding the balsa wood parts. Unscrew the servo lever. Streamline and sand the panels.



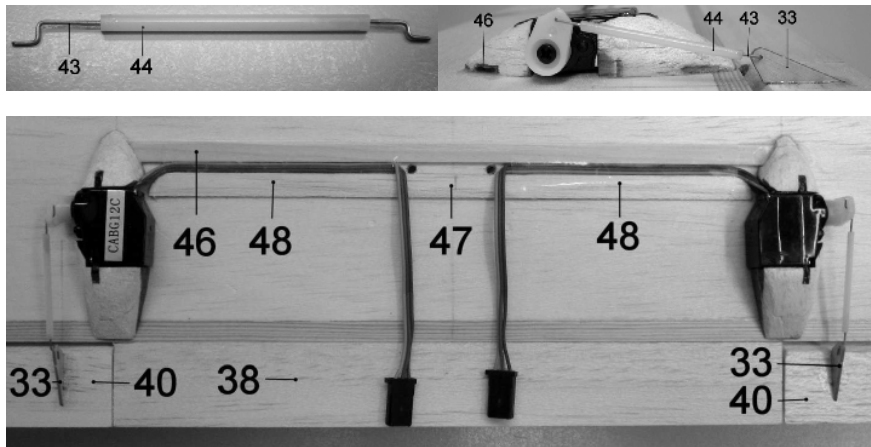
Assembly step 19

Chamfer part (47) at the back and glue on, put on part (46) only loosely, as well as the covered servos, mark the contour of (45) on part (46), saw it off, match the front edge and stick on the parts (45) for part (46) below, then glue the servos.



Assembly step 20

The illustration shows the fully installed aileron servos. Insert the slots for the rudder horns (33) with the balsa cutter into the ailerons (40). Cut off the aileron linkage (rest part of (32)) and trim off with a pair of flat nose pliers at the end, first push on the reinforcement (44) and glue with superglue. Connect the ailerons to the wing with hinge strap (49) (not included). The assembly of the wing is complete.



Assembly step 21

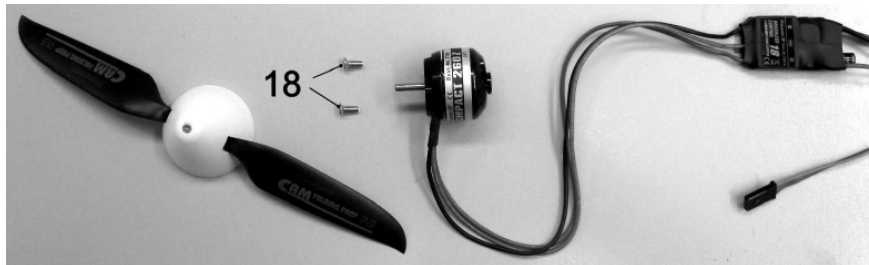
These parts of motor set No. 4318.90 are not needed, disassemble or remove. Note that the motor set no. 4318.90 is not included in the quick pack

No. 4318, it must be purchased separately as an accessory.



Assembly step 22

Install the CAM FOLDING PROP according to instructions from No. 4318.90. Insert the motor into the fuselage and tighten with the screws (18). The insertion of the motor is facilitated if an approximately 2 mm thick guide pin is inserted from the front through a hole in the associated mounting hole.

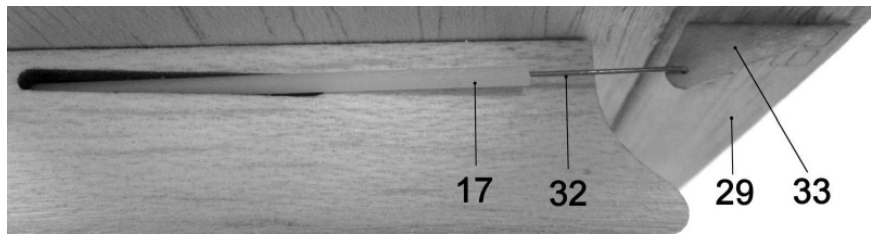


Assembly step 23

Lay the motor power line in the fuselage as shown in the picture, fix the speed controller and the power lines to the fuselage wall with a few superglue. Make sure that the motor power lines do not come into contact with the rotating motor housing.



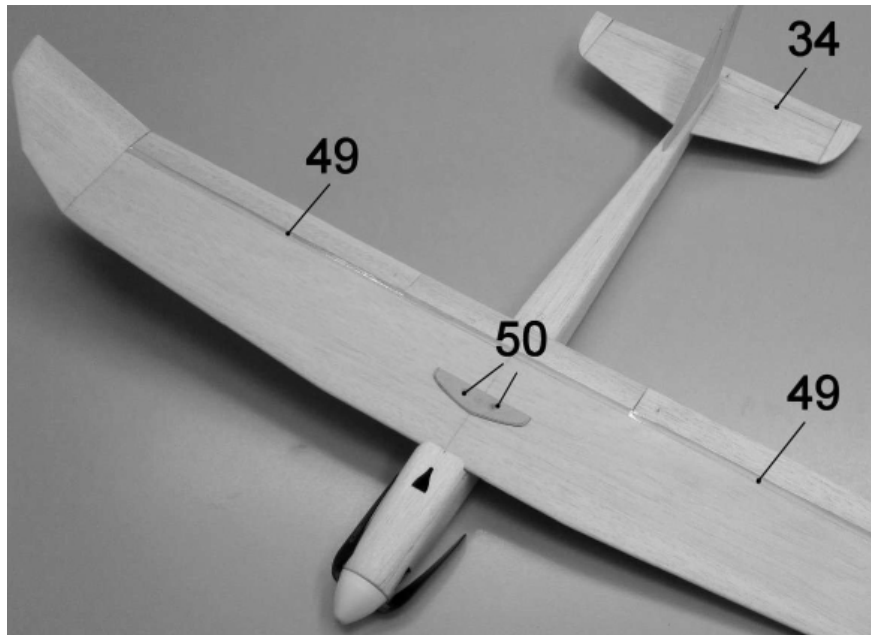
Glue the rudder horn (33) in the elevator (29), hook the cranked end of the elevator pushrod (32) into the rudder horn, connect the elevator (29) with hinged band to the elevator.



Unhook the elevator pushrod at the front and attach it to the servo lever.

Assembly step 24

Mount the wing onto the fuselage with the screws (50). Install and tighten the propeller. Connect the GR-12 HoTT receiver and insert it behind the bulkhead (5). Check all control functions and bring all control surfaces into neutral position. The maximum control surface excursions are 10 mm at the aileron and 8 mm at the elevator, measured at the end edge of the surface. It is not indispensable to paint the model.



To protect the model against moisture, it can be painted 1 to 2 times with GLATTFIX pore filler. Before and after the painting sand the surface with sanding paper No. 700.1.

Assembly step 25

Insert the battery as shown, then balance the model. The weighing takes place in ready to fly state, ie with mounted wing. The center of gravity is measured at 50 mm from the wing front edge. The center of gravity is checked by sustaining the model with two fingers



at the center of gravity below the wing. The model should then be balanced and levelled. If necessary, move the battery.

Assembly step 26

Remove the individual writings (51) from the carrier foil and stick it to the desired position of the model. The image on the packaging carton serves as a template. Paint the canopy with a black fiber pen. Fly the model with neutral control surfaces in calm or light wind. An obstacle-free meadow is ideally suited as a terrain. Start the model into the air by hand against the wind direction.

GRAUPNER Modellbau wishes many beautiful flights with the **PEP** model

Symbol description



Always observe the information indicated by this warning sign. Particularly those which are additionally marked with the words **CAUTION** or **WARNING**. The signal word **WARNING** indicates the potential for serious injury, the signal word **CAUTION** indicates possibility of lighter injuries.

The signal word **Note** indicates potential malfunctions.

Attention indicates potential damages to objects.

Safety notes



General

These safety instructions are intended not only to protect your own and other people's safety, but also to protect the product. Therefore please read this section very carefully before using the product!

- ◆ Do not leave the packaging material lying around, this could be a dangerous toy for children.
- ◆ Persons, including children, with reduced physical, sensory or mental capabilities, or lack of experience or knowledge, or not capable to use safely the transmitter must not use the transmitter without supervision or instruction by a responsible person.
- ◆ Operation and use of radio-controlled models needs to be learnt! If you have never driven such a model, then start extra carefully and make sure to be familiar with the reactions of the model to the remote control commands. Proceed always responsibly. This also means that you have for your own protection liability insurance.
- ◆ Protect all equipment from dust, dirt, moisture. All equipment must be protected from vibration as well as excessive heat or cold. The models may only be operated remotely in normal outside temperatures such as from -10°C to +55°C.

For your safety by handling the transmitter



WARNING

Also while programming the transmitter, make sure that a connected motor cannot accidentally start. Disconnect the fuel supply or drive battery beforehand.

Package content

- Clear construction manual in German with detailed views.
- English, French and Italian manuals available for download.
- Laser cut boards made of balsa wood and plywood.
- Profile sawn end strips and ailerons made of balsa wood.
- Bowden cable pushrods for elevator.
- Fasteners for motor and wing.
- Decals with stamped lettering.
- Ready-to-use sanding block.

Care and maintenance



Notes on care

The product does not need any maintenance, it works so as it is without any special care. In your own interest please protect the model from dust, dirty and humidity!

Warranty conditions

Graupner/SJ, Henriettenstrasse 96, 73230 Kirchheim/Teck grants from the date of purchase of this product for a period of 24 months. The warranty applies only to the material or operational defects already existing when you purchased the item. Damage due to misuse, wear, overloading, incorrect accessories or improper handling are excluded from the guarantee. The legal rights and claims are not affected by this guarantee. Please check exactly defects before a claim or send the product, because we have to ask you to pay shipping costs if the item is free from defects.

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