



DUCK user manual



What you need

Filament	PLA LW / POLYLIGHT 1.0 PLA	
Hardware	 ø1×285mm carbon rod (fuselage) ø1×571mm carbon rod (wing front) ø1×487mm carbon rod (wing back) ø1×361mm carbon rod (elevons) ø2×385mm carbon rod (elevons axles) Steel wire, carbon rod or clevis (pushrods) Snap-off knife CA glue Activator 	
Motor	HGLRC Aeolus 2004 1800Kv (my setup) or similar 20XX size motor	1:
ESC	iFlight SucceX-E Slick 45A (my setup) or similar (with or without BEC)	1
BEC	iFlight Micro 5V 3A (my setup) external BEC is optional	1
Servos	Corona DS-843MG (my setup, recomended)	2
Propeller	HQPROP T5X3 (my setup) or similar 5" or 6"	1
Main bat.	CNHL Ministar 450mAh 6S 70C (my setup) or 40×18×72mm (max. size for main battery)	1
RX bat.	Turnigy Nano-Tech 460mAh 2S (my setup) RX battery is optional	1
RC	at least 3 channel RC system (elevon mix)	



Profiles



Use 3MF files as starting point to find sweet spot with your printer.



Use included Cura profiles as starting point to find sweet spot with your printer.



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Model specifications

Wingspan	1000mn
Length	518mn
Print weight	approx 279g
Takeoff weight	approx 484g
Wing area	
Wing load	22,5 g/dm

Printed parts



Parts list

Fuselage

F_1	3,4 8g
F_2	14,56g
F_3	25,29g
F_4	25,26g
Canopy	4,95g
Motor_mount	0,99g
F_L_Rib	1,42g
F_R_Rib	1,42g

Wing LEFT

W_L_1	9,09g
W_L_2	18,88g
W_L_2_Rib	0,49g
W_L_3	21,41g
W_L_3_Cover	0,14g
W_L_4	16,69g
W_L_5	9,35g
W_L_6	0,88g
W_L_7	7,39g

Elevon LEFT

E_L_1	5,91g
E_L_2	5,48g
E_L_3	5,18g
E_L_3_Rib	0,56g

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Wing RIGHT

W_R_1	9,09g
W_R_2	18,88g
W_R_2_Rib	0,49g
W_R_3	21,41g
W_R_3_Cover	0,14g
W_R_4	16,69g
W_R_5	9,35g
W_R_6	0,88g
W_R_7	7,39g

Elevon RIGHT

E_R_1	5,91g
E_R_2	5,48g
E_R_3	5,18g
E_R_3_Rib	0,56g

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Fuselage assembly

You will need



Fuselage assembly



2. Glue F_1 and F_2 with medium CA.



4.

Glue Motor_mount and together with medium CA. Before applying CA glue make sure, that parts fits together easily.









Fuselage assembly

Fuselage assembly

5.

Prepare your rand E Before soldering Motor and ESC together make sure, that all cables has necessary length.



7. Cut or drill 4x hole for servocables into part. Inner parts cut compleatley off.

6. and secure ESC. Install













Fuselage assembly

Fuselage assembly

8. Glue F_3 and I with medium CA.



10. Fuselage is done.

9. Glue F_L_Rib and F_R_Rib with medium CA into fuselage.











You will need

1.

Glue with medium CA glue into F_2 part. Make sure, that parts W_L_1 and W_R_1 will fit correctly.



2.

Glue

with medium CA glue into F_4 part. Make sure, that parts \ V_L_1 and W_R_1 will fit correctly.



Wings assembly

3.

Glue parts W_L_1 and W_R_1 to the fuselage. Apply medium CA glue on wing parts (or fuselage) and then slide them on the carbon rods all the way to the fuselage.

4.

Glue parts W_L_2 and to the W_L_1 and W_R_1. Apply medium CA glue on wing parts and then slide them on the carbon rods all the way to the previous part of the wing.









Wings assembly

7. Servo and servo horn position.



6.

5.

Prepare

length.

Install servos into W_L_2 and W_R_2 parts with original screws. Servo horns must be installed before gluing next parts of the wing!





8. Glue parts W_L_2_Rib and to the V with medium CA and V glue.







Wings assembly

11.

Glue parts W_L_5 and to the W_L_4 and 4. Apply medium CA glue on wing parts and then slide them on the carbon rods all the way to the previous part of the wing.

9.

Glue parts W_L_3 and to the W_L_2 and 2. Apply medium CA glue on wing parts and then slide them on the carbon rods all the way to the previous part of the wing.



12.

Glue parts W_L_6 and 5 to the W_L_5 and 5. Apply medium CA glue on wing parts and then slide them on the carbon rods all the way to the previous part of the wing.

10.

Glue parts W_L_4 and to the W_L_3 and W_R_3. Apply medium CA glue on wing parts and then slide them on the carbon rods all the way to the previous part of the wing.









14.

Wings are done.

Elevons assembly

You will need

1. Glue with medium CA glue into E_L_1 and E_R_1 part.

13. Glue parts W_L_7 and W_R_7 to the W_L_6 and W_R_6. Apply medium CA glue on wing parts and then slide them together.



2.

Glue parts E_L_2 and E_R_2 to the E_L_1 and E_R_1. Apply medium CA glue on elevon parts and then slide them on the carbon rods all the way to the previous part of the elevon.











Elevons assembly

Elevons assembly

5. Elevons are done.



3. Glue parts E_L_3 and E_R_3 to the E_L_2 and E_R_2 . Apply medium CA glue on elevon parts and then slide them on the carbon rods all the way to the previous part of the elevon.



4.

Glue parts E_L_3_Rib to the and and E_R_3 with medium CA glue.







Completion

You will need



Use as elevons axles. Don't insert them all the way in at this point in case that you will need to make pushrods or other adjustments.



Completion

3.

If everything moves freely and pushrods are installed correctly, insert all the way in and secure them with small drop of CA glue to the elevons.



2.

Set elevons to neutral position and install pushrods. Make sure, that everything moves freely. If not, use sand paper or drillbit and make necessary adjustments.



4.

Install RX and y. Now you are ready to start programming servos and set right CG.







Center of gravity

CG is marked on W_L_1 and W_R_1 on the bottom side and it is 206mm from the very tip of the F_1 part. After maiden flight you can shift CG slightly front or back to fit your flying style perfectly. Don't shift CG position too much at once, wing can lose it's stability. It is also possible to change a little bit angle of the motor with small washers to adjust behavior of the wing during flight. (It is a bit tricky with assembled wing, but it is possible)

Elevons setup



Before first flight

Make sure, that your battery is properly charged. Check position of CG and elevon mix. Good luck.

Always fly in safe zone and in good conditions. In case of accident designer or seller is not responsible for incurred damages.

o not share your files with friends or other **p**

Flight video



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