

Auto-G2V2

INSTRUCTION MANUAL



Please read this manual carefully before operating this plane.



WARNING:

Read this instruction manual fully so as to become completely familiar with the features of this product before operating. Failure to operate this product correctly could result in damage to the product, personal property and cause serious injury. This is a sophisticated hobby product and is NOT a toy. It must always be operated with caution, common sense and some basic mechanical ability. This manual provides instructions as to the assembly, safe operation and maintenance of this hobby product. It is highly recommended that you follow and read fully the instructions and warnings stated in this manual including safety, assembly, set-up and flying guidelines in order to operate this product correctly and avoid damage or serious injury.

SAFETY PRECAUTIONS:

As the user of this product you and you alone are responsible for operating it in a manner that does not endanger yourself and others around you or result in damage to the product or property of others. This product is operated via a radio controlled system that in some cases can be subject to interference from sources outside of your control. Interference may result in a momentary loss of control so it is always recommended that this product be used in a suitably open outdoors space.

- This is a radio controlled flying model and as such must always be flown with caution and care. This is not a toy.
- This model is designed for intermediate to advanced pilots.
- Always exercise great caution when using the recommended battery to power this product. For full safety notes and operating procedures, please see information provided by your battery supplier.
- Take great care when connecting/disconnecting the battery. See battery supplier for full safety procedures.
- Never power up the model in confined spaces and always keep the prop clear of obstructions.
- This product is not a toy. Children must be accompanied by an adult at all times if operating this product.
- Only fly this model in an open area away from crowds, people, buildings, tree's, power lines and obstructions.
- Always put safety first when operating this model and consider the warnings stated above.
- The supplier/manufacturer accepts no responsibility for damage or injury caused through the use of the product. Not suitable for children under the age of 14. THIS IS NOT A TOY.

CONTENTS

Introduction -----	1
Specifications -----	1
Kit Contents -----	2
Required to complete the model -----	2
Assembly -----	3-7
Setting up the Auto-G2 V2 -----	8
C of G location -----	9
Model flying precautions -----	9
Pre-flight checks -----	9
Flying the Auto-G2 V2 -----	10
Spare parts list -----	11
Trouble shooting -----	12
Contacts -----	13
Notes -----	13-15

INTRODUCTION:

Thank you for choosing the Auto-G2 V2 gyro-copter. The Auto-G2 V2 will bring you a flying experience like no other, it is pure fun to fly and have you smiling every time the wheels lift into the air. The original Auto-G raised the bar by being the first Plug-N-Fly autogyro on the market, the Auto-G2 V2 has raised that bar even higher. It is still very simple to assemble, looks amazing, and is brilliant fun to fly, in fact, it is everything you have come to expect from the Duraflly brand.

Take-offs are very straightforward as the Auto-G2 V2 has an auto-start rotor run-up system. This system uses a small electric motor which you engage via a separate channel to spin up the rotors prior to take-off. Once up to speed you perform a normal take-off, the one-way bearing assembly allows the rotors to spin even faster as you accelerate and once airborne you switch the run-up motor off. Landings are a dream, you can land the Auto-G2 V2 very similar to a conventional fixed-wing model. But with practice, very short almost vertical landings are achievable with next to no ground run.

Autogyros are very unique aircraft utilizing an unpowered free-spinning main rotor to develop lift, and a powered propeller to provide thrust. This makes them quite different from traditional fixed wing aircraft. The Auto-G2 V2 offers you this very interesting design in an easy and simple to use plug and fly model.

For those of you looking for a new flying experience, the Auto-G2 V2 is just the ticket. This model will be especially appealing to those who fly both helicopters and fixed wing aircraft as this model falls somewhere between the two. With its very unique flight characteristics, the Auto-G2 V2 is by far one of the most interesting models you'll ever have flown. In addition to its super slow flight and auto-rotation capability, it can even perform simple aerobatics such as gentle stall turns.

This being the Auto-G2 V2, it has the following improvements over the original version.

- Upgraded more durable rotor-head plate.
- Fibre reinforced pushrods.
- The rotor mast has now be fully encased and is more streamlined.
- Landing gear is wider giving more stability on the ground.
- Larger wheels so that it can be flown off of a variety of flying strips
- Landing gear has been braced to make it stronger.
- Motor has been cowled in.
- New color scheme.
- 3D printed pilots head.

The Auto-G2 V2 has been designed for intermediate and experienced model pilots, so you will need some experience in assembling, and flying models.



SPECIFICATIONS:

- **Length** : 795mm (31.3 inch)
- **Height** : 392mm (15.43 inch)
- **Weight** : 720g
- **ESC** : Duraflly 20A brushless ESC
- **Motor** : Brushless motor x 1 (800kv)
- **Servo** : 9g x 4
- **Radio** : 5+ Channel
- **Rotor Diameter (Three rotor blades)** : 821 mm (2.33 inch)
- **Battery** : LiPo 11.1 v 1300mAh 30-50C x 1

CONTENT:



1. Fuselage
2. Rotor-Head Button
3. Vertical Stabilizer
4. Rotor Blades & Rotor Head
5. Propeller
6. Spinner
7. Landing Gear
8. Wheels
9. Horizontal Stabilizer
10. Tail Wheel Assembly
11. Accessory Pack
12. Quick Start Guide

REQUIRED TO COMPLETE MODEL:

In its 'Plug-N-Fly' format the Auto-G2 V2 will still require some additional accessories to get it 'flight ready'. Durafly recommends the products below for optimum performance and great value. All are available at HobbyKing.com



Turnigy TGY-i6S Digital Proportional Radio Control System

SKU: 9114000053-0



OrangeRx Tx10i Mode 1 EU Version 10ch 2.4GHz DSMX Compatible Radio System

SKU: 9171001398-0



OrangeRx R615X DSM2/DSMX Compatible 6Ch 2.4GHz Receiver

SKU: 9101800001-0



Turnigy iA6C PPM/ SBUS 8CH 2.4G AFHDS 2A Telemetry Receiver

SKU: 9114000063-00



Turnigy Graphene 1300mAh 3S 45C LiPo Pack w/ XT60

SKU: 9067000125-0



Turnigy Nano-Tech 1300mAh 3S 25~50C Lipo Pack

SKU: N1300.3S.25



ZIPPY Compact 1300mAh 3S 25C Lipo Pack

SKU: ZC.1300.3S.25



IMAX B6AC V2 Professional Balance Charger/Discharger

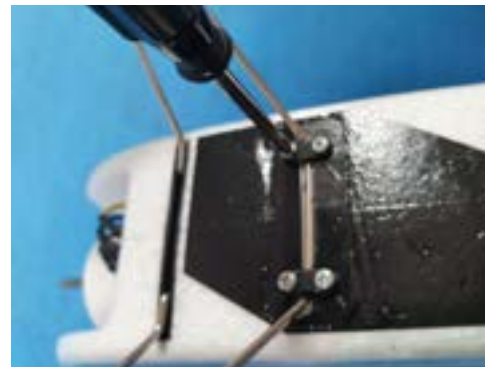
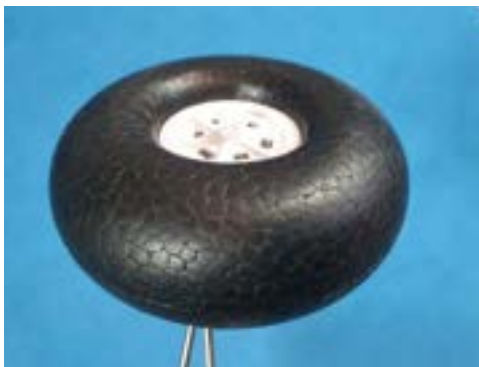
SKU: 9052000068-2

ASSEMBLY (PNF):



1 The first step in the assembly is to fit the landing gear, your ESC to motor wires should be supplied disconnected. If not, then unplug the ESC from the motor and slide the ESC wires out of the way of the area where the landing gear is attached.

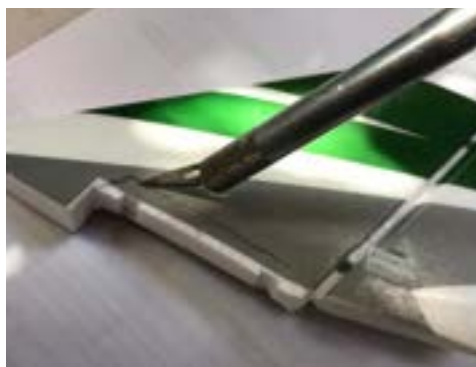
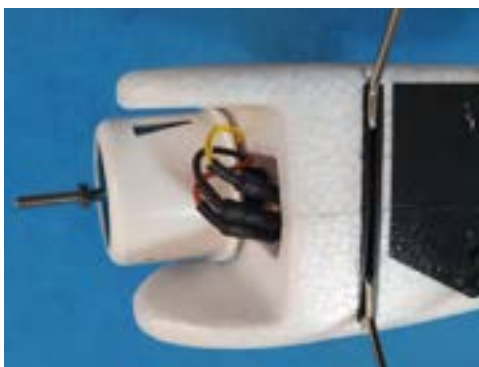
2 With a sharp knife, remove the covering over the rear landing gear slot as shown.



3 Attach the wheels to the landing gear and retain using the white plastic screw-on domed fittings.

4 Landing gear ready to be attached. Tip: Use some silicone grease on the axles, this will reduce the acoustics caused by the large wheels whilst flying.

5 Squeeze the front of the landing gear into the front slot (this is quite a tight fit). Retain the rear cross brace using the black landing gear straps and the 4 x self-tapping screws provided.



6 Feed the ESC cables back through the landing gear and plug into the motor connectors, don't forget to check the motor rotation when you get to setting up your radio.

7 Before gluing the vertical stabilizer to the horizontal stabilizer, remove the covering from the area shown with a sharp knife.

8 Glue the vertical stabilizer to the horizontal stabilizer.



9 Slide the tail assembly onto the tail boom, position the rear clamp so that it is flush with the end of the boom.



10 Using the M2 x 10mm nuts and bolts provided, clamp the tail assembly to the tail boom.



11 Check before fully tightening the bolts that the assembly is in alignment to the rotor mast.



12 Apply a spot of glue to the spigot on the tail wheel assembly then slide it into the end of the tail boom.



13 Check the alignment of the tail wheel assembly as the glue sets, ensure it remains perpendicular to the tail assembly.



14 Connect the tail wheel and elevator horns to the pushrod clevises.



15 Connect the rudder pushrod clevis to the rudder horn. Ensure on all the clevises you slide the rubber security keeper up as close to the clevis pin as possible.



16 Centralize the rudder, then slacken the grub-screw of the tail wheel control rod collet, centralize the tail wheel then re-tighten the screw.



17 Make sure that the tail wheel is in-line with the tail boom when the rudder is central.



17 At this point it is best to install your receiver to set up your radio and the servos. Don't forget to check the direction of the motor. See further on in this manual for the control throws.



18 Most small receivers should sit nicely at the rear of the battery compartment, just in front of the servos. Use some doublesided tape to fix the auto-start controller to the side of the compartment.



19 Position your 1300mAh 3S as shown in the battery compartment. Please note: The auto-start system has a built-in safety device, and will not start when the battery is connected, regardless of the switch position.



20 Check that the hex-nut on the motor shaft is wound down to the end of the thread, slide the prop on and locate the backplate of the prop over the nut.



21 Thread the spinner onto the shaft and tighten fully by hand. Note: The prop should be balanced, but it is always advisable to check the balance before fitting.



22 The next step is to assemble the main rotor. The rotor blades are supplied with one blade attached to the rotor hub as a pattern on how to attach the other two.



23 View of the finished assembly center hub looking from the top.



24 View of the finished assembly looking from underneath. Note that the angled end of the nut plates match the triangular molding in the middle.



25 View of the completed assembly from the top. Note that the blades have a negative incidence.



26 We highly recommend that you balance the rotor-head as shown with a good quality prop balancer.



27 Before you fit the rotors, check that the 2 nuts at the top of the shaft are locked together.



28 Slide the rotor-head center plate onto the main shaft until it touches the two lock-nuts, rotor blades must be on the top of the center-plate.



29 Screw the head button into place to hold the rotor-head on.



30 The basic assembly of your Auto-G2 V2 is almost there.



30 The Auto-G2 V2 comes with a 3D printed pilots head for gluing to the battery hatch. This can be either painted, or colored in with marker pens.



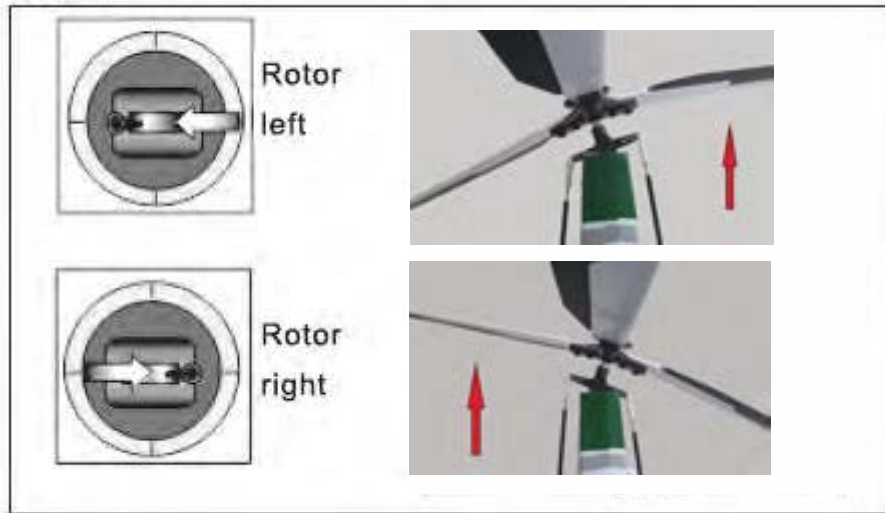
Congratulations, assembly of your Auto-G2 V2 is now complete.

Please perform a final check of all the screws, nuts, bolts and components, ensuring they are secure and firmly in place.



SETTING UP THE AUTO-G2 V2:

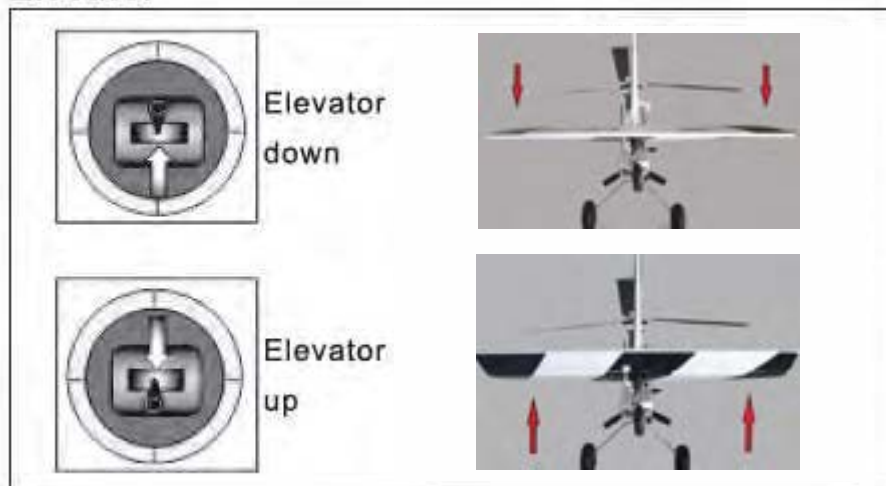
Rotor



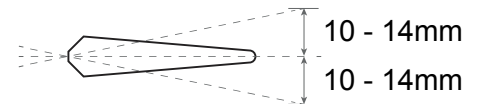
CONTROL THROWS

Roll/Aileron Controls (Rates/Expo)
 Normal flying: 75% rates, 25% expo
 Initial Flights: 100% rates, 30% expo

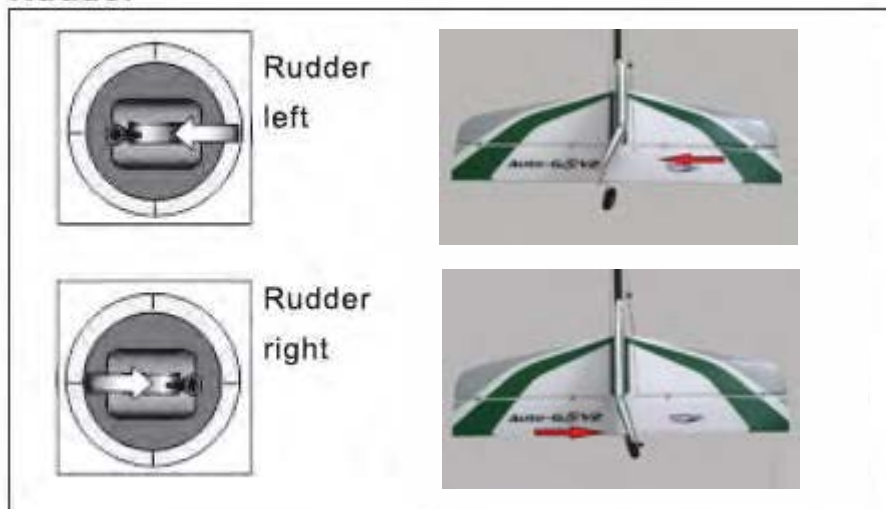
Elevator



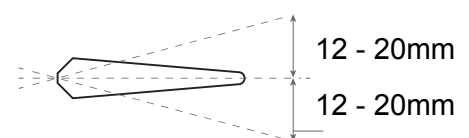
Elevator:
 10mm low, 14mm high



Rudder



Rudder:
 12mm low, 20mm high



CG LOCATION:



With the recommended battery installed, lift the AutoG2 V2 by the head and the nose should drop to approximately 3-5 degree's below the horizon. This indicates you are within the correct CG range. Add weight to the nose or tail until you find a balance point you are comfortable with within this range when flying.

MODEL FLYING PRECAUTIONS:

- Select your flying area carefully, always choose an open space that is free from obstructions and away from crowded areas. Avoid flying in areas with roads, electric/telephone poles/wires, or within close proximity to full size air traffic.
- Do not fly this model in poor weather, high winds, fog or mist, inclement temperatures, and rain and storms are to be avoided.
- Never attempt to catch this model whilst in flight. Even a slow moving model can cause harm to yourself and others, and risks damage to the model.
- This model is recommended for children no younger than 14 years old. All children, no matter what age, should always be supervised by a capable and responsible adult when operating this model.
- Remember to keep clear of the propeller at all times when the flight battery is connected.
- Before flying, always turn on your transmitter first, then plug your flight battery into the model.
- After flying, always unplug your flight battery first, then turn off your radio transmitter. Never leave the battery plugged in when not in use.
- Exercise caution when charging your battery, follow in full the manufacturers safety and charging guidelines.

PRE-FLIGHT CHECKS:

1. Always range check your model before any flight (especially when flying a new model for the first time). Follow your radio manufacturers guidelines for performing this check.
2. Check all screw bolts and mounting points are firmly secure, including control horns and clevises. Also check that the rotor head is secure and installed correctly (not upside down).
3. Only fly with fully charged batteries (both in your radio and model). Failure to do so could result in loss of control, damage to the model and/or persons/property around you. Check your batteries are fully charged.
4. With the model powered up (transmitter on first, then receiver/model) check that all surfaces are free from damage/obstructions, moving in the correct directions and freely with the stick inputs.
5. Inspect the model, prop and rotors for any damage that may have occurred during transit and listen for any unusual sounds from the electronics when powered up. If in doubt, do not fly.
6. With the model held securely and the prop free of obstructions, increase the throttle just slightly to confirm the rotation of the prop is correct. The model should want to pull straight forward with throttle.

HINTS AND TIPS ON FLYING THE AUTO-G2 V2:

First, just a little insight into the differences between flying an autogyro and a conventional fixed-wing airplane. Autogyros are often regarded as "unstable" by fixed-wing airplane pilots, this is certainly true if you try to fly an autogyro using fixed-wing principles. Flown properly, an autogyro is actually safer and easier than flying a fixed-wing airplane as it is unable to stall. A fixed-wing will stall if it is flown too slowly for the wing to produce lift, since the rotor of an autogyro is always spinning, it simply cannot stall. If the forward airspeed becomes zero, the autogyro will slowly drift to the ground rotors still spinning. Ok, a vertical landing in this manner will not be a smooth affair, but it should not damage the model.

The one weakness they do have is that they can lose rotor control authority if you subject the rotor to negative-G forces such as pushing the elevator stick forward (like going over a hump back bridge). Remember that a flying autogyro hangs from the rotor much like an object hanging on a piece of string. As long as the autogyro is hanging from the rotor, stability is maintained. The instant zero or negative-G is introduced, the rotor speed begins to decay and stability is lost. If this situation occurs whilst flying then ease back on the elevator, this increases the angle of attack causing the airflow to pass back up through the rotors allowing them to spin back up to speed and resume stability. This is why in normal flight the rotors are angled backwards, this causes the airflow to pass up through the rotors from underneath to keep them spinning at speed. Now you understand a little more about the differences in flying your Auto-G2 V2 you should be ready for your first flights.

Set your rates to high and start with a bit of taxiing around to get used to the ground handling, make sure you hold in full up elevator while taxiing. With the big bush-style wheels and wider, sturdier landing gear, you will notice that taxiing around is much better with the Auto-G2 V2 than earlier versions of this model.

Once lined up for take-off into wind, hold a little bit of right roll (ailerons), as it will try to roll a little to the left as you accelerate to lift-off, also hold in some up elevator. Flick the auto-start switch and wait for the rotors to spin up to full-speed, once at full-speed gently open the throttle and keep the model straight using rudder. Ease of the elevator as the speed increases and as the tail lifts up your Auto-G2 V2 should lift smoothly into the air and steadily climb-out, you will most probably not be anywhere near full throttle to achieve a nice smooth climb-out. Switch the auto-start off at this point and keep steadily climbing, then try a banked turn left or right to bring the model back towards the take-off area. You will find when turning you will need to use the rudder a lot more than the roll control, this is something bank and yank pilots will have to get used to, this method does not work with the Auto-G2 V2 or any autogyro for that matter. If you have flown helicopters, or large scale models, you will be well used to this style of flying and coordinating your turns using roll (ailerons), and rudder. Be careful not to fly too far away, as orientation with this style of model is more difficult than with conventional fixed-wing airplanes.

Once at a safe height, throttle back a little and get used to the delightful flying characteristics of your Auto-G2 V2. Once you are settled and getting familiar with the handling turn it into wind and slow it down by easing back on the elevator and using the power to control the height. You will find that it will almost hover by using quite a lot of up elevator, and quite a bit of power. We do not recommend that you aerobat the Auto-G2 V2, but it will do very nice stall turns. Just remember that once you have completed the stall turn at the top of the maneuver, you will need to throttle back ease back more on the elevator as the nose drops to slow the model down, this will keep the rotors spinning nicely and not allow the model to over-speed.

By now you should be ready to attempt a landing approach, as normal, fly a nice left or right hand circuit and set yourself up on the final approach to the landing area. Initially, just treat it the same as any fixed-wing airplane and fly it down the approach using elevator and throttle control to achieve a steady descent. Once near the ground just round out gently as normal, and with a bit of power still on gently flare, you don't need too much elevator to achieve a nice 3-point landing. Once you have flown the Auto-G2 V2 a few times, you will find you can really slow it up on landing using lots of elevator and quite a bit of power, and land with very little forward speed for super short landings.

We hope you enjoyed your first flight with your Auto-G2 V2, and have many more enjoyable flights in the future.

Don't forget to watch our flying demo video: <https://www.youtube.com/watch?v=aNTVGCxbk3w>

Have fun, and happy flying.

The Durafly team.

AUTO-G2 V2 SPARE PARTS LIST:

**FULL RANGE OF SPARES
COMING SOON!**



TROUBLE SHOOTING:

Problem	Cause	Solution
Motor does not turn	<ol style="list-style-type: none"> 1. Battery is not fully charged. 2. Transmitter battery low. 3. Motors not connected. 4. The motor is damaged. 5. Receiver is not bound to Tx. 6. ESC in set-up mode. 	<ol style="list-style-type: none"> 1. Charge the batteries. 2. Install a full charged battery. 3. Check for connection between the ESC and motor. 4. Replace motor. 5. Consult radio manual and go through bind procedure again. 6. Hold model and move throttle to full position then back down to idle.
<p><u>Model moves backwards</u></p> <p><u>Control surfaces not moving with stick input</u></p>	<ol style="list-style-type: none"> 1. Prop installed backwards 2. Motor direction reversed 1. The servo lead is connected to Rx incorrectly. 2. The servo is damaged. 	<ol style="list-style-type: none"> 1. Turn the prop around . 2. Disconnect any two motor wires from ESC, swap around and reconnect. 1. Make sure the servo leads are connect properly. 2. Replace servo.
<u>Model does not fly straight</u>	<ol style="list-style-type: none"> 1. Control surfaces not centered. 2. CG is not in the correct position. 	<ol style="list-style-type: none"> 1. Adjust the trims on the transmitter. 2. Re-position LiPo as suggested.
<u>Model does not climb</u>	<ol style="list-style-type: none"> 1. The battery is not fully charged. 2. Elevator servo is reversed. 3. CG too far backwards. 	<ol style="list-style-type: none"> 1. Charge the battery. 2. Change servo direction via Tx. 3. Move battery forwards.
<u>Limited Radio Range</u>	<ol style="list-style-type: none"> 1. Transmitter/ Receiver batteries are flat. 	<ol style="list-style-type: none"> 1. Charge/replace batteries.

CONTACTS:

For more information on this model and the entire range from Duraflly please visit us at:

- duraflly.com

Or see our Facebook page at:

- facebook.com/duraflly

And don't forget you can see the product video for this model and the entire Duraflly range at:

- youtube.com/hobbykinglive

For your next Duraflly purchase be sure to visit:

- hobbyking.com

Notes:



Made in China