

AVIOMANIA

AIRCRAFT



Product Catalogue 2022

G1sB "Genesis CE"



Specification:

Engine (standard)	Rotax 582 UL/ 912UL
Max level speed	170 Kmph
Cruising speed	110 - 130 Kmph
Never exceed speed	180 Kmph
Min level speed (MTOW) ..	30 Kmph
Max rate of climb	1400 fpm
Max take off weight (depending on regulations).....	300-390 Kg
Empty weight (with, battery, prerotator, ready to take off, no fuel) from.....	174 Kg
Rotor diameter (depending on pilot weight & airfield elevation).....	23 ft.
Propeller diameter	64"
Engine options.....	Rotax 912ULS
Fuel capacity.....	36 Ltrs
Max endurance (at cruise power)	2 Hours 50 min.



G1sE "Genesis Sport"

Our new Convertible Gyroplane !!!!!

Fully enclosed & Open canopy included in the price



Specification:

Engine	Rotax 582 UL - Rotax 9xx
max level speed	180 Kmph
Cruising speed	120 - 140 Kmph
Never exceed speed	200 Kmph
Min level speed (MTOW)	30 Kmph
Max rate of climb	1500 fpm
Max take off weight	300 Kg (400 Kg)
Empty weight (with, battery, prerotator, ready to take off, no fuel) from.....	178 Kg
Rotor diameter (depending on pilot weight & airfield elevation).....	23 -25 ft.
Propeller Diameter	64"
Engine Power range.....	65 -120Hp
Fuel Capacity.....	42-55 Ltrs
Max Endurance (at cruise power)	3 Hours 30 min.

G2sa-2 "Genesis Duo



Specification:

Max level speed (115Hp)	180 Kmph (115 mph)
75% cruise speed (115 Hp)	120 - 140 Kmph (70 - 85 mph)
Min level speed (MTOW)	50 Kmph (30 mph)
Max rate of climb (115Hp)	1500 fpm
Max pilot weight (115Hp) with full fuel.....	125 Kg (275 lbs) per seat
Empty weight (ready to take off, no fuel) from..	230Kg (530 lbs)
Max take off weight (depending on your country's regulations).....	450 - 560 Kg (990 - 1230 lbs)
Rotor diameter (depending on pilot weight & airfield elevation).....	28-30 ft.
Propeller diameter	70" -72"
Engine power	100 – 130 Hp
Fuel capacity.....	75 Ltrs (20 US Gal)
Optional external fuel tanks	+ 30 Ltrs (8 U S G a l)
Engines	Rotax 912 ULS, 912iS, 914, Hirth 3701, 3003

G1sa "Genesis Solo" **Discontinued Model**



Specification:

Engine.....	Rotax 582 UL
Max level speed	170 Kmph
Cruising speed	110 - 130 Kmph
Never exceed speed	180 Kmph
Min level speed (MTOW) ..	30 Kmph
Max rate of climb	1400 fpm
Max take off weight	300 Kg
Empty weight (with, battery, prerotator, ready to take off, no fuel) from.....	164 Kg
Rotor diameter (depending on pilot weight & airfield elevation).....	23 ft.
Propeller diameter	64"
Engine power range.....	55 – 80 Hp
Fuel capacity.....	36 Ltrs
Max endurance (at cruise power)	2 Hours 30 min.

G1sa "Genesis 912 " Discontinued Model. NOW Available as Genesis CE 912



Specification:

Engine.....	Rotax 912 UL
Max level speed	170 Kmph
Cruising speed	120 - 140 Kmph
Never exceed speed	180 Kmph
Min level speed (MTOW) ..	35 Kmph
Max rate of climb	1600 fpm
Max take off weight (depending on your countries regulation)	300- 400 Kg
Empty weight (with, battery, prerotator, ready to take off, no fuel) from.....	198 Kg
Rotor diameter (depending on pilot weight & airfield elevation).....	23-25 ft.
Propeller diameter	68"
Engine power range.....	80 Hp
Fuel capacity.....	36 Ltrs
Max endurance (at cruise power)	3 Hours 15 min.



General Info

Before releasing these gyroplanes into the market back in 2009, we spent 18 Months testing them for safety, stability, maneuverability and performance. During testing more than 200 hours have been accumulated on each model, in aggressive and intensive tests, which resulted in proving that these Gyroplanes are some of the best available to date, with ALL the latest understanding in Gyroplane Aerodynamics and Stability. Further more the airframe on both the single and twin seat were carefully designed for the best possible PILOT PROTECTION with a light, but very strong triangulated airframe and the positioning of the Kevlar reinforced fuel tank in a protected airframe area.



Some key features are: True Center Line Thrust (CLT) design. The specially designed tail compensates for most of the Engine's TORQUE, preventing torque over, bunt over, power push over and PIO as much as possible keeping the airframe always parallel with the rotor's flight path, thus offering exceptional stability in all aspects of flight. All materials and hardware used in the construction of "Genesis" are Aircraft Grade. (6061 T6, 4130 Steel, AN Hardware)

The bolt on construction is VERY strong. Most Gyroplanes have a single tube or 2 tubes welded on top of each other, in front of the mast to support the pilot and nose wheel. The "Genesis" gyroplane line uses a TRIANGULATED construction (3 tubes forming a pyramid), that is light, and offers the best pilot protection in the event of an accident. It is much superior to the single metal tube (or 2 stacked on top of each other) that is commonly used on other gyroplanes.

Also the bolted frame can be easily repaired, compared to the welded construction that needs the complete frame to be replaced. Only damaged parts need to be replaced. The aluminum Alloy and construction method we use has been around for many decades and proved to be very reliable, strong, service and crack free as well as corrosion resistant.

The design is perfectly balanced with the engine thrust passing at the center of mass and the tail is designed to offer great dynamic stability and ENGINE TORQUE compensation, making this gyroplane one of the easiest and safest to fly. Aggressive engine power changes have **NO effect** on roll, pitch or yaw. Changing power will have a gentle attitude change to maintain trim speed. The controls are crisp, responsive and very light.



We strongly believe that, we are offering the best gyroplane that combines excellent safety, stability, performance, maneuverability and good looks.

Quick built Kits.



Quick built kits are primed or painted. Only hand tools are required and they can be built in 4-9 days
No welding is done by the builder and the gyroplane can be assembled with hand tools.

The critical parts like rotor head, controls, prerotator are fully assembled and require installation only.





The tails are all aluminum and come Ready built and primed or painted



The instrument panel is supplied ready and pre-wired.



The ARAMID (Kevlar) reinforced fuel tank was tested to withstand 15G and is protected by the triangulation of the frame.



Assembly booklet and drawings are supplied with the kits as well as videos with step by step demonstration of the complete assembly.

NO FABRICATION IS NEEDED WITH THE QUICK BUILT KIT.



The Ready to Fly Genesis line of Gyroplanes include:

Prerotator, Instruments (Compass*, ALT, ASI, water and exhaust gas temperature gauges, Engine and Rotor RPM, fuel gauge, hour meter), 3 blade Prop, suspension undercarriage, High performance Rotor Blades, 12V outlet, strobe and landing light, electric starter, rotor brake and wheel covers.

*The compass can be replaced by a VSI without charge

Optional: Radio, Transponder, external fuel tanks, electric trim.



AVIOMANIA

AIRCRAFT

Why compromise safety or performance! - Get an Aviomania gyroplane!

Aviomania Aircraft is the largest ultralight aircraft manufacturer in Cyprus.

The founder of Aviomania Aircraft, Nicolas Karaolides, has been involved in Aviation since 1983. He has always been involved in flying, maintaining, designing and building aircraft. He holds licences and degrees in aircraft engineering, electronics and flying. Due to his experience and advanced understanding of gyroplane aerodynamics, Aviomania Aircraft offer some of the best and safest gyroplanes available today.

Not only are our gyroplanes some of the safest and most stable gyroplanes in the world but they are also some of the most maneuverable and high performance aircraft in their class. For example, our open frame single seat gyroplane has a maximum sustained straight and level airspeed of 165 Kph (90 Kt., 105 Mph) and sustained climb of 900 fpm with only 65 HP! A performance that is similar to, if not better than, other open frame gyroplanes with 100 HP or more!

Why choose Aviomania aircraft:

Our effort and dedication is focused on designing, developing and manufacturing gyroplanes that offer the best performance and safety. Our gyroplanes (Genesis solo, Genesis CE, Genesis Sport and Genesis Duo) have worldwide recognition thanks to the “no compromise” design philosophy.

Integrating new safety systems with state-of-the-art gyroplane airframe & rotor design in an attractive body design is what gives the “Genesis” line its outstanding safety and performance.

The range of Genesis gyroplanes are probably the only European manufactured gyroplanes that incorporate all the aerodynamic safety mechanics that enable safety even at the extreme edges of the gyroplane flight envelope.

Facts:

Active Tail Design (ATD). – Aviomania's own tail design offers the best possible engine torque compensation and frame stability. Most other manufacturers use a vertical tail that is covered by the lower half of the propeller diameter and a horizontal stabiliser placed low on the keel. Although this design is good for reducing PIO (pilot induced oscillation), it does not offer ANY torque or power push over compensation. It also requires constant rudder correction with power changes especially during take-off and landing.

Aviomania's ATD design has the vertical tail covered by 75% of the propeller diameter and with the horizontal stabiliser positioned 60% in the prop wash and 40% in free air, most engine torque and yaw tendencies are eliminated. No need for “rudder dancing” by the pilot during takeoff, landing or power changes. The ATD works even in very low G situations, at high or low speed and at high or low power settings. The frame flies straight and is not affected by power changes making the “Genesis” gyroplanes some of the easiest and most forgiving to fly, take-off and land. A lot of accidents have occurred during take-off, landing, and low G situations; our ATD design greatly reduces the chance of such accidents occurring. We strongly feel that this design will soon be the standard.

Why compromise - Choose our ATD design, offered as standard, with all of our “Genesis” gyroplanes.

Center Line Thrust (CLT) – Aviomania is probably the only European manufacturer that offers CLT gyroplanes. Why is CLT better? Physics, in simple terms, states that all forces are applied to a body in relation to its center of mass (CM). In other words, if the propeller is pushing / pulling an aircraft above its CM (the case with most gyroplanes available today) the aircraft will want to nose over. To correct this we need to apply another force to reduce the imbalance.

Most manufacturers are “correcting” the High Trust Line (HTL) by having a very heavy rotor and vectoring the rotor thrust (Lift) ahead of the CG in order to pull the nose up against the engine pushing the nose down. This “solution” makes the gyroplane unstable. A stable aircraft has its lift passing slightly aft (behind) the CG. Also this “solution” does not offer good thrust offset compensation at reduced G because the rotor thrust that is used to “keep” the nose up when reduced cannot compensate for the engine's power offset that is pushing the nose down.

Another “solution” is by aerodynamically downloading the horizontal stabiliser which adds “artificial” weight on the gyroplane, reducing its performance and maneuverability, but this “solution” works only at higher airspeeds.

Some other manufacturers choose to do nothing to compensate the thrust offset, which makes their gyroplanes unstable, power change sensitive and dangerous in reduced G situations.

A center line thrust (CLT) gyroplane has the engine thrust passing through, or very near its CG, therefore engine power will have no effect on pitch stability, increasing the performance, stability and safety.

Why compromise - Choose our CLT design, offered as standard with all of our “Genesis” gyroplanes.

High performance rotor – we are using a modified VR7 semi-symmetrical aerofoil that offers better performance over the 8H12 aerofoil used by other manufacturers. The blades are also twisted thus offering greater Lift/Drag ratio over the untwisted rotor blades other manufacturers are using.

Our current rotor is of bonded aluminium design. This process makes for a strong and light rotor blade construction compared to the aluminium extruded or composite rotor used by other manufacturers. Our rotor blades have NO life limit and are usable as long as their condition is satisfactory. We have rotor blades that have logged more than 2,500 hours and are still in good shape. This is a significant advantage over other type of rotor blades. Some of the extruded aluminium blades developed cracks in about 1,000 hours and some are lifed to 1,000 – 1,500 hours.

Our light rotors use tip weights to maintain the inertia that is needed for an auto rotating rotor. This technique offers many advantages like safety, low weight, increased maneuverability and stability.

Why compromise- Choose our High performance rotor design, offered as standard with all of our “Genesis” gyroplanes.

Frame - Aviomania uses aviation grade aluminium bolt together construction, using AN (aviation grade) bolts. This construction method has been used in gyroplane construction for many decades and has proved to be very reliable, strong, service and crack free as well as corrosion resistant. Most Gyroplanes have a single tube or 2 tubes welded on top to each other in front of the mast to support the pilot and nose wheel. The "Genesis Solo" uses a TRIANGULATED construction (3 tubes forming a pyramid). This is light but offers the best pilot protection in the event of an accident. It is far superior to the single metal tube (or 2 stacked on top of each other) that is commonly used on other gyroplanes. Also the bolted frame can be easily repaired compared to the welded construction that needs the complete frame to be replaced. Only damaged parts need be replaced.

Why compromise - Choose our triangulated modular bolted frame design, offered as standard with all of our “Genesis” gyroplanes.

Fuel Tank - Our Fuel tank is made using fuel resistant resin and Aramid (Kevlar) / Glass fabrics making for a strong but light construction that resists impact and piercing. Our Kevlar reinforced fuel tank is positioned in a protected area within our light, but very strong triangulated airframe offering the best possible pilot protection.

Why compromise - Choose our protected, Kevlar reinforced fuel tank design, offered as standard with all of our "Genesis" gyroplanes.

Landing Gear - Our landing gear is made from 4130 Chrome-moly alloy (aviation grade) which is very strong and light. The wide track offers exceptional stability. Our own developed soft coupled castoring (SCC) nose wheel offers a narrow turn radius at low speeds and minimises nose wheel turn angles at high speeds offering excellent back tracking capabilities as well as directional stability, straight tracking and increased safety during landings by minimising the risk of tip over.

Why compromise - Choose our SCC design, offered as standard with all of our "Genesis" gyroplanes.

