AIRCRAFT INFORMATION

Pipistrel Taurus 503 LSA & Taurus Electro

Rotax 503 & Electro Versions

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Introduction

This document is published for the purpose of providing general information about the Pipistrel Taurus Aircraft. Distributors/promoters and customers should familiarize themselves with this document to assist in their evaluation of this aircraft.

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This document has been produced for the Pipistrel Taurus aircraft in May 2012. With the ongoing development of the aircraft Pipistrel reserves the right to revise this document whenever occasioned by product improvement, government/authority regulations or any other good cause.

IMPORTANT NOTE: Currently only be Pipistrel Taurus fitted with the Rotax 503 engine is approved in the LSA category.
The Taurus Electro, or in fact any aircraft with an electric engine does not currently comply with ASTM standards because the standards have not been published by the ASTM committee.

General Description

All information herein applies to the LSA compliant Pipistrel Taurus aircraft fitted with Rotax 503 engine and the Taurus Electro. The Pipistrel Taurus aircraft is a pre-molded, composite built, two seat, single engine, mid wing, retractable, tailwheel design, high performance and very economical Light Sport Aircraft (LSA).

The aircraft is available in a various configurations of instrumentation and is targeted directly to recreational flyers but can also be used in flight schools looking for a fully featured aircraft at a very reasonable price.

Basic Information

Dimensions	**Taurus 503 LSA**
wing span	49 ft 1 inch (14.97 m)
length	23 ft 12 inch (7.30 m)
height (propeller extended)	8 ft 10 inch (2.70 m)
wing surface	132 sqft (12.26 m^2)
vertical fin surface	12 sqft (1.1 m^2)
horizontal stabilizer and elevator surface	17.5 sqft (1.63 m^2)
aspect ratio	18.3
flap positions	-5°, -0°, +5°,+9 °, +18 °

Weights, center of gravity and fuel information, Gas Version

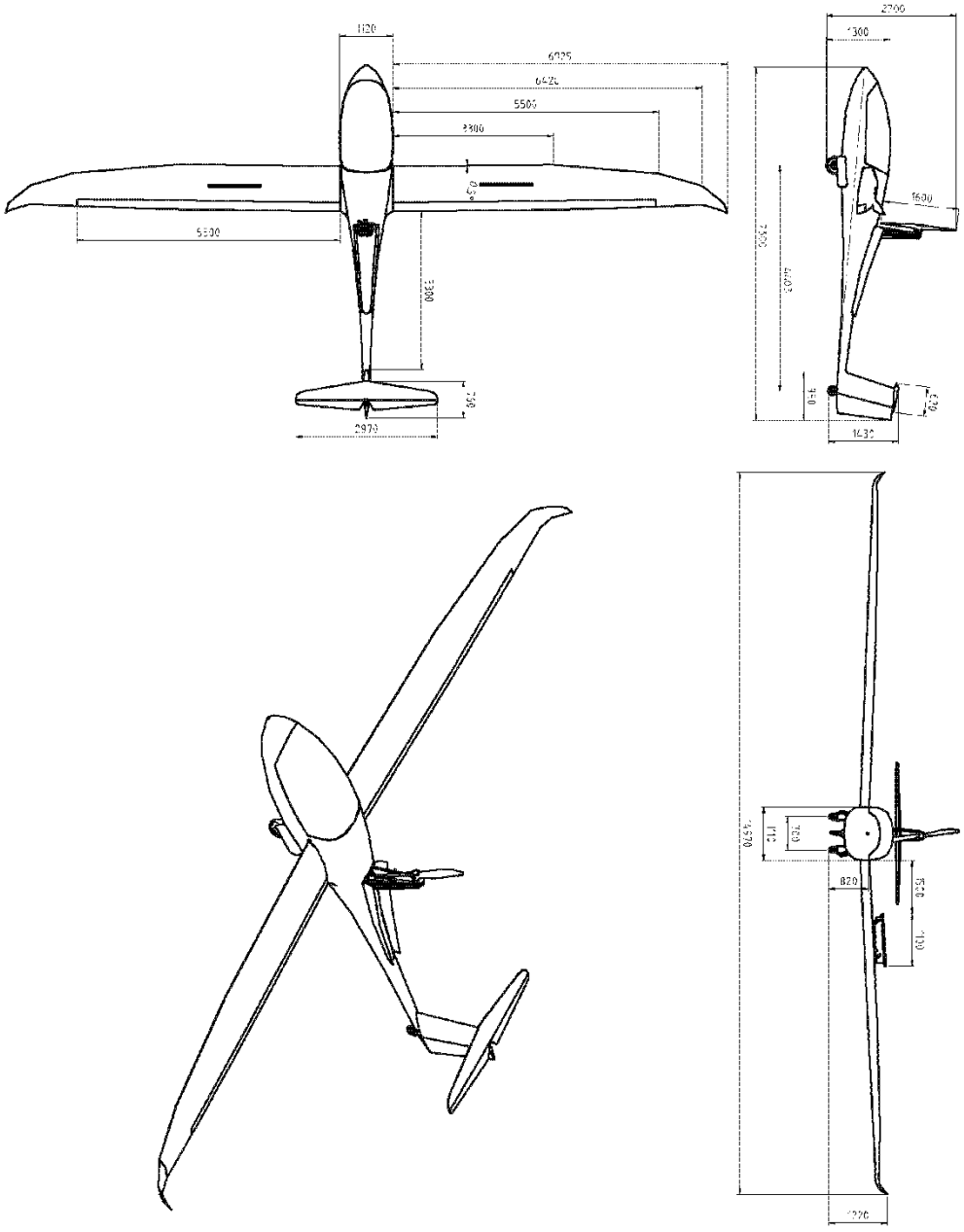
Taurus 503 LSA	Rotax 503
maximum weight takeoff	1210 lbs (550 kg)
maximum weight landing	1210 lbs (550 kg)
empty aircraft weight (excl. parachute rescue system)	627 lbs (285 kg)
empty aircraft weight (incl. parachute rescue system)	655 lbs (297 kg)
maximum useful load	583 lbs (265 kg)
baggage allowance	22 lbs (10 kg)
centre of gravity (MAC)	23% - 45%
fuel capacity, usable US gal	7.1 / 7 US gal
fuel capacity, usable Liters	27 L / 26 L
fuel/oil premix	recommended 2%
engine	Rotax 503 50 hp
propeller	fixed pitch* dia. 62'' (1600 mm)

Weights, center of gravity, Electo Version

Taurus Electro	Electric Engine
maximum weight takeoff	1210 lbs (550 kg)
maximum weight landing	1210 lbs (550 kg)
empty aircraft weight (excl. parachute rescue system)	645 lbs (293 kg)
empty aircraft weight (incl. parachute rescue system)*	673 lbs (306 kg)
maximum useful load	565 lbs (257 kg)
baggage allowance	22 lbs (10 kg)
centre of gravity (MAC)	23% - 45%
performance standard battery pack	4000 ft AGL climb
performance extended battery pack	6000 ft AGL climb
engine electric	40 kW toff / 30 kW climb
propeller	fixed pitch* dia. 62'' (1600 mm)
* weight is with basic battery pack, add 14 kgs for the optional large battery pack.	

3-view drawing

Showing the Pipistrel Taurus aircraft, dimensions are in mm.



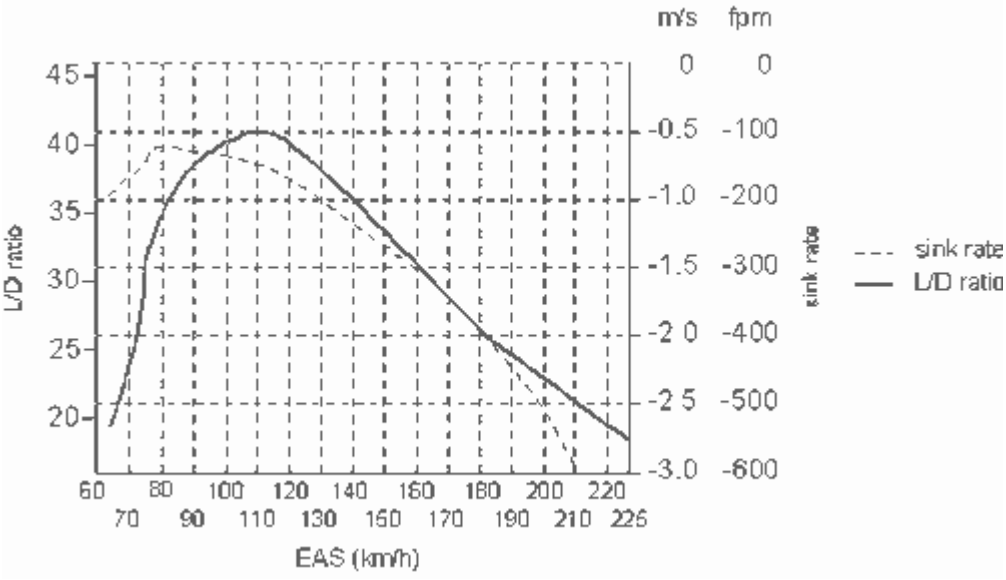
Performance

Data published here is for take-off weight of 1212 lbs (550 kg), ISA conditions at sea level.

FLIGHT CHARACTERISTICS	
Stall speed with flaps	33.7 knots (62 kmh)
Stall speed clean	35.4 knots (66 kmh)
Manoeuvring speed	88 knots (163 kmh)
Max. speed with flaps	70 knots (130 kmh)
Max. speed to open airbrakes	86 knots (160 kmh)
VNE (LSA Category)	120 knots (222 kmh)
VNE (Normal Category)	121 knots (224 kmh)
Minimum sink	156 fpm (0.78 m/s)
Minimum sink speed	50 knots (94 kmh)
Max. sink with airbrakes	1082 fpm (5.5 m/s)
Best glide ratio	41:1
Best glide ratio speed	57 knots (107 kmh)
Glide ratio at 75 knots	33:1
Glide ratio at 97 knots	23:1
Max. speed in tow	81 knots (150 kmh)
45°- 45° roll time	3.9 s
Take-off distance at MTOM	590 feet (180 m)
Take-off dist. over 15 m obstacle at MTOM	870 feet (265 m)
Cruise speed at 75% power	64 knots (120 kmh)
Best climb speed	54 knots (100 kmh)
Best climb at MTOM	580 fpm (2.9 m/s)
Ceiling MTOM with gasoline engine running	12,795 feet (3,900 m)
Max. service load (safety factor 1.875)	+4.6 g -2.3 g
Max. tested load	+ 7.2g - 7.2g
Consumption at cruise speed 78 knots	3.1 US gph (11.7 lph)
Consumption at full throttle climb	4.7 US gph (17.8 lph)

Speed Polar

Speed polar in clean glider configuration (gear & engine retracted, at typical flying weight of 480 kgs)



What is New?

Pipistrel is proud to announce the Taurus, the first ever high-performance two-seat side-by-side, self-launching glider with all the advantages of the LSA category. The MTOW has been increased to 550 kg (1210 lbs) which provides for an impressive payload of more than 250 kg (550 lbs)!

Great performance

The Taurus is equipped with an impressive 50 HP retractable power pack, allowing for completely unassisted powerful takeoffs even on super short runways and glider fields. Takeoff distance is less than 600ft (183 m) at MTOW and the rate of climb settles at the 600 fpm (3 m/s) mark. In the world of two-seat self-launching gliders, such take-off and climb performance are not common.

In the Taurus you will reach 3000 ft AGL)915 m) in less than 6 minutes and this is where the Intelligent Ibis II Engine Control System takes over. The system is fully automated; making sure that the propeller has positioned itself correctly and retracts the engine for you while you concentrate on finding that perfect lift. Built-in safety even prevents inadvertent start-ups or retractions of the engine!

Great glide

As a glider, Taurus sports a glide ratio of 41:1 and features 5-stage flaperons to improve the performance at both low and high speeds.

Spacious large cockpit

One thing you notice immediately on the Taurus is the luxurious, incredibly spacious and comfortable side-by-side cockpit, specially optimized for tall pilots. Side-by-side seating arrangement makes communication between the pilots perfect, unlike conventional tandem two-seaters. Full dual controls are reachable to both pilot and passenger and the pedals, seats, headrest and ventilation can be adjusted to suit your body and needs in just seconds even during flight.

Luggage storage

For convenient storage and luggage hauling there are side pockets for each pilot and a roomy baggage compartment behind the seat with space for an oxygen system as well. The baggage compartment is accessible during flight, a major breakthrough in gliding!

Independence

With the Taurus gliding really does become independent. Gone are the requirements for assistance during assembly, flying (including take-off) and disassembly, you really can go gliding whenever wish and wherever you wish!

The Taurus features two main landing wheels to achieve ground stability and taxing is effortless because of the steerable tail wheel.

Glowing references

Klaus Ohlmann, a World authority in gliding and holder of a multitude of World Records, owns a Taurus and confirms the great advantages over other gliders.

- the Taurus has enough space in the cockpit for two very large pilots and the luggage compartment is an excellent addition;
- side-by-side seating arrangement is a real reward in comparison to the tandem-seating. Flying the Taurus is a lot more fun;
- the ballistic total-rescue system is huge advantage when compared to conventional motorgliders;
- taxi with the double-wheel undercarriage is a real luxury, especially for training flights;
- the overall quality and finish is second to none;
- it has self-fitting connections for all flight controls - big plus;
- although being a light sport aircraft, the Taurus feels like a real glider;
- at the price of about 50% of what you would pay for another self-launching two-seat glide, Taurus will be a success story in the world of gliding!

Safety and rescue parachute

Safety is Pipistrel's primary concern; Taurus features the Safety Cockpit Concept. The entire cabin area is encased with energy absorbing structures made from Kevlar, an amazing material which maintains the integrity of the cabin and makes it safer in stronger impacts. Together with our special Safety Cockpit Concept the Taurus is also equipped with a ballistic parachute rescue system, which saves the complete aircraft together with the crew in case of severe emergencies. The parachute opens instantly and the aircraft slowly descends to the ground without the pilots leaving their seats. Furthermore, the aircraft is not additionally damaged by use of rescue system; the cabin and pilots remain completely intact.

Electric option

Ready for the future? Have you ever wondered what is it like to fly all electric? Virtually silent and vibration free? With no emissions whatsoever and for the fraction of the usual cost? The Taurus Electro, a fully electric-powered version of Taurus with same performance numbers and it’s available now.

Handling and instrument column

Both pilots have individual control sticks and rudder pedals. The landing gear operation lever, flaps, airbrakes, wheel brakes and trim levers are positioned for easy use of both pilots and are conveniently located in the middle, between both seats. The instrument column not only fits all instruments, but also the throttle push-lever, the optional tow-rope disconnection handle, ventilation handle and engine retraction system interface. All handles and levers ensure sensitive, yet reliable aircraft handling.

Comfort

For added comfort pilots enjoy adjustable headrests, adjustable rudder pedals and separate vent window for each pilot and a central ventilation system for efficient de-fogging of glass surfaces. The canopy is a molded single piece Lexan with no support columns. Entering the cockpit is simple and unobstructed as is the visibility out of the cockpit in all flight stages.

Retractable engine

The gas version of Taurus is fitted with a retractable ROTAX 503 twin carbureted engine which drives a Pipistrel propeller. This power configuration provides the aircraft with short-field takeoff and very decent climb performance. The system for extending and retracting the engine and propeller is fully automated. The pilots take advantage of a dedicated interface on the instrument column and all he/she has to do is flick the switch to 'Engine IN' or 'Engine OUT' position – everything else is done completely automatically. When retracting, the propeller is first positioned vertically before the engine gets retracted and the covers close. To restart the engine on the ground or in-flight, the pilot selects the 'engine OUT' option and the engine extends & is ready for start-up in just seconds. The entire engine retraction system is incredibly light and reliable. All switches and sensors used to monitor the operations are electromagnetic-induction type and as such are not sensitive to vibration, mechanical damage and/or dirt.

Undercarriage

The Taurus has a taildragger undercarriage. The two main, retractable wheels are equipped with separate hydraulic brake systems for easy ground handling. The undercarriage retracting system is fully mechanical but only needs very light forces on the cockpit lever during operation. The tail wheel is not retractable but fully steerable, which makes taxiing a walk in the park.

Other systems

The airbrakes, flaperons, trim are all mechanical and identical to the ones used in other Pipistrel models.

The Taurus can also take-off being towed behind a tow-plane with the optional tow-hook with quick disconnection mechanism on board. It is also possible to order a winch launch hook on the belly of the Taurus.

Leather interior

People often ask – is the leather upholstery offered as optional equipment truly leather? Yes, we use 100% genuine NAPA leather with Bovine texture in a wide choice of colors which are published on our website (see Gallery). The customer can choose the color of the seats and surrounding upholstery in a single color.

Solar Panels

Solar panels can be installed as an option; they cover all electrical consumption during gliding. They will recharge the battery on ground as well.

Can I do aerobatics in the Taurus?

The design basis of the Taurus follows the strictest German Ultralight regulations, the LTF-UL. In some cases, the EASA CS-22 is considered, as well as their FAA FAR counterparts. Taurus is a high-performance airplane and not suitable for aerobatics, despite the +4.6 G, -2.30 G allowable loads. Pipistrel cannot prevent people doing aerobatic manoeuvres in the Taurus, but we do not approve it – the reason is in aerodynamics. The Taurus has so little drag that it picks up speed MUCH quicker than other aircraft. This can be dangerous in aerobatic manoeuvres (also spins, which are completely recoverable) and an average pilot can very quickly overstress the airframe because of high airspeeds. The aircraft can reach VNE in a dive in only 3 seconds!

Exterior paint

The paint used on the Taurus is a special acrylic based pigment, which is applied to the molds during the manufacturing process. Pipistrel aeroplanes are not after-painted like many other aeroplanes – instead, paint is applied onto/into the structure while molding. This makes the paint much more durable and resistant to UV light and environmental contaminants. Recommendations for care and cleaning of the aircraft can be found in the Flight manual and Maintenance manual, section Handling and Maintenance, chapter. Keeping your aircraft in perfect shape.

What is the Pipistrel Taurus warranty?

The warranty on Pipistrel aircraft is 12 months or 100 hours whichever comes earlier. The airframe is covered by Pipistrel, the engine is covered by Rotax International warranty and individual warranties are carried by the instrument and avionics manufacturers. A full copy of the warranty conditions is available on request.

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