

Pipistrel Information Pack – Sinus – Virus - Taurus

For some, the sky is the limit..... When flying a Pipistrel..... There are no limits.....

The **Pipistrel - Sinus, Virus and Taurus Motorgliders** are now available in Australia and New Zealand. They are type certified and approved for training, hire or private flying when registered through Recreational Aviation Australia. If registered through the Gliding Federation of Australia they can be used for general flying and training of the aircraft owner or owners in a club environment.

The Pipistrel Sinus, Virus and Taurus are the world's first Ultralight certified, composite, two seater side-by-side motorgliders, made from the same JAR 22 long life composite materials as fully certified gliders, the aircraft are economical to buy and own, and simple to fly and maintain. The clean design, low drag and superb construction make these designs some of the most economical, high performance aircraft ever made.

The aircraft statistics at a glance follow....

Sinus



- § 14.97 meter wingspan
- § Glide ratio 30:1
- § 110 to 115 knot cruise with Rotax 912
- § Rotax 503 also available
- § 12 lph at 110 knots
- § Available in tail dragger or nosewheel configuration
- § Up to 7.5 hours endurance
- § Perfect for thermalling or slope soaring
- § Comfortable touring aircraft
- § Feathering propeller
- § Large luggage capacity

Virus



- § 12.46 meter wingspan
- § Glide ratio 24:1
- § 120 to 125 knot cruise with Rotax 912
- § 13.5 lph
- § Up to 7.5 hours endurance
- § Available in tail dragger or nosewheel configuration
- § Perfect for thermalling or slope soaring
- § Fantastic touring aircraft
- § Feathering propeller
- § Large luggage capacity
- § Easy to hangar

Virus SW (Short Wing)



- § 10.7 meter wingspan
- § Glide ratio 20:1
- § 120 to 125 knot cruise with Rotax 912
- § 13.5 lph at 120 knots
- § Up to 7.5 hours endurance
- § Available in tail dragger or nosewheel configuration
- § Great for thermalling, slope soaring or just having fun
- § Fantastic touring aircraft
- § Feathering propeller (not on LSA)
- § Large luggage capacity
- § Easy to hangar being 30 ft wingspan
- § LSA Version supplied with 3 blade fixed pitch propeller

Taurus



- § 14.97 meter wingspan
- § Glide ratio 40:1
- § Rotax 503 retractable engine and propeller
- § Unique side-by-side seating - perfect for training
- § Retractable undercarriage
- § 78 knot cruise under power
- § 3.1 gph at 90 knots
- § Perfect for thermaling or slope soaring
- § Comfortable training or pure sports aircraft
- § Selling NOW !

Pipistrel Trikes



- § Hundreds flying worldwide
- § Available as kits or ready to flt
- § Strong, durable composite undercarriage
- § 2 seats with training controls
- § Castoring nosewheel
- § Strong brake on front wheel
- § 3 models available
 - Rotax 503
 - Rotax 583
 - Rotax 912
- § Unbeatable pricing

The Aircraft in Detail

Sinus



§ 14.97 m (49' 1½") wingspan	§ Up to 7.5 hours endurance
§ Glide ratio 30:1	§ Perfect for thermaling or slope soaring
§ 110 to 115 knot cruise with Rotax 912	§ Comfortable touring aircraft
§ Rotax 503 also available	§ Feathering propeller
§ 12 lph at 110 knots	§ Large luggage capacity
§ Available in tail dragger or nosewheel configuration	

The **Sinus** motorglider is a strutless 14.97 m (49' 1½") wing span motorglider. It is normally powered by the Rotax 912 4-stroke 80 hp engine or the Rotax 503 2-stroke engine.

The Sinus is equipped with positive and negative flaperons, airbrakes and tail wheel (optional nosewheel). It is manufactured from hi-tech epoxy resin, fibreglass, carbon and kevlar composites. The airfoil used on the wings is IMD 029-b (Orlando, Venuti).

The cabin is properly insulated from noise and very comfortable for even those long flights. The seats are ergonomic with an adjustable head rest. Both the pilot and passenger pedals have differential toe brakes fitted. The pedals are adjustable forward and aft in flight and are manufactured from stainless steel. All controls are easy to use and reach from both seats. Pedals and sticks are dual. The wing tanks have the fuel cap on top, as well as a visual check within the cockpit for the fuel level. The standard capacity is 60 liters with a long range option increasing the capacity to around 100 litres.

The main landing gear is aerodynamically profiled and made of composite materials. The main wheels have strong hydraulic disk brakes and the tail wheel or nosewheel option is directly controlled by the pedals. The airbrakes on top of the wing allow landing the Sinus in very short distances over high obstacles.

The Sinus assembly is very simple, just like conventional gliders, and the wing control connections are automatically locked on connection of the wings. It takes most owners about 20 minutes to rig or de-rig the aircraft.

The **Sinus 503** is our entry level aircraft. It is reasonably priced, some would say cheap, and is light and comfortable to fly. The Sinus 503 is powered by the Rotax 50 hp, air-cooled, two stroke engine and even as our basic aircraft it comes complete with all engine and flight instruments, cabin heaters and all the other options described in the price list. The Sinus 503 may be cheap in price but it isn't lacking in features. I would highly recommend the Sinus 503 as a thermaling and soaring aircraft. Whilst it has the ability to tour under engine, it is not as suitable for Australia as the Sinus 912.

The **Sinus 912** is our most popular aircraft. It uses the legendary Rotax 912 80 hp 4 cylinder 4-stroke engine and it allows the Sinus to become a 'super sophisticated' motorglider just like the 'real ones' but at a 1/3 of the price. If you want to spoil yourself and your passenger, the Rotax 912 is the engine of choice for the vast distances we travel in Australia.

MODEL	SINUS 503	SINUS 912
ENGINE ROTAX	503 UL DCDI 2V	ROTAX 912 UL2
max power(with 2 carb.)	50 hp at 6600 rpm	80 hp at 5500 rpm
PROPELLER	Pipistrel VARIO	Pipistrel VARIO
SIZES		
wing span	14.97 m 49' 1½"	14.97 m 49' 1½"
length	6.6 m 21.65 ft	6.6 m 21.65 ft
height	1.70 m 5.57 ft	1.70 m 5.57 ft
wing area	12.26 m2 131.97 ft2	12.26 m2 131.97 ft2
rudder area	1.1 m2 11.84 ft2	1.1 m2 11.84 ft2
tail area	1.63 m2 17.55 ft2	1.63 m2 17.55 ft2
aspect ratio	18.3	18.3
positive flaps	9 deg. 18 deg	9 deg. 18 deg
negative flaps	5 deg	5 deg
center of gravity	25% - 39%	25% - 39%
WEIGHTS		
empty weight	268 kg 590 pounds	284 kg 626 pounds
max take off weight (MTOW)	472.5 kg 1042 Pounds	472.5 kg 1042 Pounds
fuel tanks capacity	2 x 30 l or 2 x 50 l 2x7.93 or 2x13.2 US G 2x6.6 or 2x11 Imp G	2 x 30 l or 2 x 50 l 2x7.93 or 2x13.2 US G 2x6.6 or 2x11 Imp G
useful fuel	57 litres or 97 litres	57 litres or 97 litres
PERFORMANCES		
stall with flaps	63 km/h 34.0 Knots 39.2 MPH	63 km/h 34.0 Knots 39.2 MPH
stall without flaps	66 km/h 35.6 Knots 41.0 MPH	66 km/h 35.6 Knots 41.0 MPH
cruising speed	170 km/h 91.8 Knots 105.6 MPH	220 km/h 118.8 Knots 136.7 MPH
max speed with airbrakes out	160 km/h 86.4 Knots 99.4 MPH	160 km/h 86.4 Knots 99.4 MPH
max speed with flaps down	130 km/h 70.2 Knots 80.8 MPH	130 km/h 70.2 Knots 80.8 MPH
manoeuvring speed	135 km/h 73.0 Knots	135 km/h 73.0 Knots

	83.9 MPH	83.9 MPH
max. horizontal speed	186 km/h 100.5 Knots 115.6 MPH	240 km/h 129.6 Knots 149.1 MPH
VNE	250 km/h 135.0 Knots 155 MPH	250 km/h 135.0 Knots 155 MPH
best climb speed	115 km/h 62.11 Knots 71.5 MPH	120 km/h 64.8 Knots 74.5 MPH
max climb rate (MTOW)	3.2 m/sec 630 fpm	6.5 m/sec 1280 fpm
climb rate at 140 km/h	2.8 m/sec 551 fpm	6.3 m/sec 1240 fpm
min.sink speed	90 km/h 48.6 Knots 60.0 MPH	90 km/h 48.6 Knots 60.0 MPH
min.sink (prop. 90 deg.)	0.96 m/sec 189 fpm	1.03 m/sec 202 fpm
max. sink with airbrakes	5.5 m/sec 1082 fpm	5.5 m/sec 1082 fpm
best glide ratio speed	95 km/h 51.3 Knots 59.0 MPH	95 km/h 51.3 Knots 59.0 MPH
best glide (prop. 90 deg.)	1:28	1:27
glide at 150 km/h (prop 90 deg)	1:18	1:18
take off run MTOW	118 m 387 ft	88 m 288 ft
take off over 15 m MTOW	210 m 689 ft	148 m 485 ft
service ceiling MTOW	6100 m 20000 ft	8800 m 29000 ft
45°- 45° roll time	4.2 sec	4.2 sec
endurance	5.3 hours	5.8 hours
range distance	900 km 485 N Miles	1200 km 650 N Miles
max load factor permitted (x1.8)	+4g - 2g	+4g - 2g
max load factor tested	+ 7.2g - 7.2g	+ 7.2g - 7.2g
fuel consumption at cruise speed	10.2 l/hour	9.2 l/hour
ERGONOMICS		
cabin width	110 cm 43 1/3 inches	110 cm 43 1/3 inches
Max Pilot Height	+195 cm + 6' 4"	+195 cm + 6' 4"

Virus



- § 12.46 m (40' 10½") wingspan
- § Glide ratio 24:1
- § 120 to 125 knot cruise with Rotax 912
- § 13.5 lph
- § Up to 7.5 hours endurance
- § Available in tail dragger or nosewheel configuration
- § Perfect for thermalling or slope soaring
- § Fantastic touring aircraft
- § Feathering propeller
- § Large luggage capacity
- § Easy to hangar

The **Virus 912** is similar to the Sinus range except it only comes fitted with the Rotax 912 engine. It's wingspan, at 12.46 m (40' 10½"), is smaller than the Sinus and this makes the aircraft fly faster but the compromise is a reduced glide ratio.



The Virus is equipped with steerable nose wheel or tailwheel as an option.

The Virus is a very capable touring aircraft. With long range tanks it has 7 hours endurance at 120 knots and with a higher wing loading it cuts through heavy turbulence with ease.



From A-to-B the Virus is certainly an efficient and economical aircraft, but don't let this fool you - slope soaring is a breeze in the Virus. The fast roll rate and excellent visibility make it a substantial wave or slope soaring aircraft and with a glide ratio of 24:1 it can still be thermaled. Overall, the Virus is an extremely nice package which will fit in most hangars.



MODEL	VIRUS 912
ENGINE ROTAX	ROTAX 912 UL2
max power(with 2 carb.)	80 hp at 5500 rpm
PROPELLER	Pipistrel VARIO
SIZES	
wing span	12.46 m 40' 10½"
length	6.4 m 20.99 ft
height	2.00 m 6.56 ft
wing area	11.0 m2 118.41 ft2
rudder area	1.1 m2 11.84 ft2
tail area	1.63 m2 17.55 ft2
aspect ratio	13.1
positive flaps	10 deg. 18 deg
negative flaps	5 deg
center of gravity	25% - 37%
WEIGHTS	
empty weight	285 kg 628 pounds
max take off weight (MTOW)	472.5 kg 1042 Pounds
fuel tanks capacity	2 x 30 l or 2 x 50 l 2x7.93 or 2x13.2 US G 2x6.6 or 2x11 Imp G
useful fuel	57 litres or 97 litres
PERFORMANCES	
stall with flaps	64 km/h 34.6 Knots 39.8 MPH
stall without flaps	74 km/h 39.9 Knots 46.0 MPH
cruising speed	225 km/h 121.5 Knots 139.8 MPH
max speed with airbrakes out	160 km/h 86.4 Knots 99.4 MPH
max speed with flaps down	130 km/h 70.2 Knots 80.8 MPH

manoeuvring speed	135 km/h 73.0 Knots 83.9 MPH
max. horizontal speed	238 km/h 128.5 Knots 147.9 MPH
VNE	250 km/h 135.0 Knots 155 MPH
best climb speed	130 km/h 70.2 Knots 80.8 MPH
max climb rate (MTOW)	6.2 m/sec 1220 fpm
climb rate at 140 km/h	7.0 m/sec 1378 fpm
min.sink speed	96 km/h 48.6 Knots 60.0 MPH
min.sink (prop. 90 deg.)	1.72 m/sec 338 fpm
max. sink with airbrakes	5.5 m/sec 1082 fpm
best glide ratio speed	110 km/h 59.4 Knots 68.4 MPH
best glide (prop. 90 deg.)	1:24
glide at 150 km/h (prop 90 deg)	1:15
take off run MTOW	96 m 315 ft
take off over 15 m MTOW	155 m 508 ft
service ceiling MTOW	8100 m 26500 ft
45°- 45° roll time	3.1 sec
endurance	5.6 hours
range distance	1260 km 680 N Miles
max load factor permitted (x1.8)	+4g - 2g
max load factor tested	+ 7.2g - 7.2g
fuel consumption at cruise speed	9.7 l/hour
ERGONOMICS	
cabin width	110 cm 43 1/3 inches
Max Pilot Height	+195 cm + 6' 4"

Virus SW (Short Wing)



- § 10.7 m (35' 1½") wingspan
- § Glide ratio 20:1
- § 120 to 125 knot cruise with Rotax 912
- § 3.6 gph at 120 knots
- § Up to 7.5 hours endurance
- § Available in tail dragger or nosewheel configuration
- § LSA Version supplied with 3 blade fixed pitch propeller
- § Great for thermalling, slope soaring or just having fun
- § Fantastic touring aircraft
- § Feathering propeller (not on LSA)
- § Large luggage capacity
- § Easy to hangar being 30 ft wingspan

The **Virus SW 912** is identical to the Virus except it's wingspan, at 10.7 m (35' 1½"), is smaller than the standard Virus making this aircraft easier to hangar. Performance is slightly up with the aircraft flying faster but the compromise is a reduced glide ratio.



The Virus SW is equipped with steerable nose wheel or tailwheel as an option.

The Virus SW is a very capable touring aircraft. With long range tanks it has 7 hours endurance at 120 knots and with a higher wing loading it cuts through heavy turbulence with ease.

From A-to-B the Virus SW is certainly an efficient and economical aircraft, but don't let this fool you - slope soaring is a breeze in the Virus SW. The fast roll rate and excellent visibility make it a substantial wave or slope soaring aircraft and with a glide ratio of 20:1 it can still be thermaled. Overall, the Virus SW is an extremely nice package which will fit in most hangars because of the shorter wingspan.

MODEL	VIRUS 912 SW
ENGINE ROTAX	ROTAX 912 UL2
max power(with 2 carb.)	80 hp at 5500 rpm
PROPELLER	Pipistrel VARIO
SIZES	
wing span	10.7 m 35' 1½"
length	6.4 m 20.99 ft
height	2.00 m 6.56 ft
wing area	TBA m2 TBA ft2
rudder area	1.1 m2 11.84 ft2
tail area	1.63 m2 17.55 ft2
aspect ratio	13.1
positive flaps	10 deg. 18 deg
negative flaps	5 deg
center of gravity	25% - 37%
WEIGHTS	
empty weight	285 kg 628 pounds
max take off weight (MTOW)	544 kg 1200 Pounds
fuel tanks capacity	2 x 30 l or 2 x 50 l 2x7.93 or 2x13.2 US G 2x6.6 or 2x11 Imp G
useful fuel	57 litres or 97 litres
PERFORMANCES	
stall with flaps	64 km/h 34.6 Knots 39.8 MPH
stall without flaps	74 km/h 39.9 Knots 46.0 MPH
cruising speed	225 km/h 121.5 Knots 139.8 MPH
max speed with airbrakes out	160 km/h 86.4 Knots 99.4 MPH
max speed with flaps down	130 km/h 70.2 Knots 80.8 MPH
manoeuvring speed	135 km/h 73.0 Knots

	83.9 MPH
max. horizontal speed	238 km/h 128.5 Knots 147.9 MPH
VNE	250 km/h 135.0 Knots 155 MPH
best climb speed	130 km/h 70.2 Knots 80.8 MPH
max climb rate (MTOW)	6.2 m/sec 1220 fpm
climb rate at 140 km/h	7.0 m/sec 1378 fpm
min.sink speed	96 km/h 48.6 Knots 60.0 MPH
min.sink (prop. 90 deg.)	1.72 m/sec 338 fpm
max. sink with airbrakes	5.5 m/sec 1082 fpm
best glide ratio speed	110 km/h 59.4 Knots 68.4 MPH
best glide (prop. 90 deg.)	1:20
glide at 150 km/h (prop 90 deg)	1:13.5
take off run MTOW	96 m 315 ft
take off over 15 m MTOW	155 m 508 ft
service ceiling MTOW	8100 m 26500 ft
45°- 45° roll time	3.1 sec
endurance	5.6 hours
range distance	1260 km 680 N Miles
max load factor permitted (x1.8)	+4g - 2g
max load factor tested	+ 7.2g - 7.2g
fuel consumption at cruise speed	9.7 l/hour
ERGONOMICS	
cabin width	110 cm 43 1/3 inches
Max Pilot Height	+195 cm + 6' 4"

Taurus



- § 14.97 m (49' 1½") wingspan
- § Glide ratio 41:1
- § Rotax 503 retractable engine and propeller
- § Unique side-by-side seating - perfect for training
- § Retractable undercarriage
- § 78 knot cruise under power
- § 3.1 gph at 90 knots
- § Perfect for thermaling or slope soaring
- § Comfortable training or pure sports aircraft
- § Selling NOW !

The **Taurus** is a high performance two-seater glider, with a glide ratio of 41:1 and a fully retractable engine. The Taurus sets new standards in efficiency for light aircraft.

The main idea of the Taurus was completely different from the Sinus and the design criteria for the team was to



- § Offer pilots a high performance glider, or it's self-lauchable version, with an auxiliary, yet fully retractable engine and glide ratio of at least 1:40
- § Make gliding cheap
- § Provide a fully equipped aircraft, including a parachute rescue system, all instruments, radio etc. at a reasonable price
- § Provide the owner with complete freedom and independence - even the helper holding the wing tip during take-off is no longer needed
- § Have the most comfortable cockpit on the market with a separate ventilation system for each pilot
- § Be pilot-friendly oriented with simple & straight-forward systems handling.

In order to reduce development costs, Pipistrel decided to fit the Taurus with an already existing wing, which has proved to be excellent on Sinus and the single-seat ultralight Apis glider. The fuselage of the Taurus has, however, been developed and shaped from scratch. Using special

lifting body shape concepts, it features enough room for an auxiliary, yet fully retractable engine and an incredibly spacious cockpit.



Cockpit

It was not easy to decide how to shape the pilot's workspace, but in the end the fact that the World's population is growing in all measures prevailed. The pilots in the Taurus are seated side-by-side for comfort and ease of communication. Furthermore, this kind of seat placement saves some weight, since some of the control systems do not have to be made separately. The Taurus is also intended for training, therefore all control levers are well within reach of both pilots.



Handling

Both pilots have individual control columns and rudder pedals with hydraulic wheel brakes levers. The landing gear operation lever, flaps, airbrakes and trim levers are for joint use of both pilots and are therefore located in the middle, between both seats. The instrument column not only fits all instruments, but also the throttle push-lever, choke lever, tow-rope disconnection handle, ventilation handle and engine retraction system interface. All handles and levers ensure sensitive, yet reliable aircraft systems handling. For added comfort pilots enjoy adjustable headrests, adjustable rudder pedals, separate vent window for each pilot and a central ventilation system for efficient de-fogging of glass surfaces. The canopy is a moulded single transparent plexi piece with no support columns. The entrance to the cockpit is therefore simple and unobstructed as is the visibility out of the cockpit in all flight stages.

Retractable engine

The version of Taurus with an auxiliary retractable engine is fitted with a 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 & starts-up all by itself after the covers have been opened. 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 Taurus comes equipped with a rocket charged parachute rescue system which is fired out of the fuselage in case of extreme emergency. 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.

The airbrakes, flaps, trim and their drives are all mechanical and identical to the ones used in the Sinus.

One can also take-off with the Taurus being towed behind a tow-plane as there is a tow-hook with disconnection mechanism on board.



One of the unique features of the Taurus is the mass trim system. There are two fluid reservoirs in the aircraft, one in the nose and one in the tail section. Since both pilots sit in front of the

CofG, the CofG range can move quite considerably. In case only one pilot is on board, the trim fluid is pumped into the front reservoir. Should there be 2 persons on board, the trim fluid is pumped into the tail section. By using the mass trim system the aircraft becomes safe and insensitive to big differences in pilot weights. Additionally the unpleasant carrying and insertion of metal weights is eliminated.



Technical data and provisional flight characteristics

Aircraft model	TAURUS 503
Engine	ROTAX 503 UL DCDI 2V max. output (2 carb.) 53 HP @ 6600 RPM
Propeller	Twin blade Pipistrel - dia. 1600 mm
DIMENSIONS	
Wingspan	14.97 m (49' 1½")
Length	7.17 m
Height	1.41 m
Wing area	12.33 m ²
Vertical fin area	0.9 m ²
Horizontal fin area	1.36 m ²
Aspect ratio	18.6
Pos. flap settings	9 deg - 18 deg
Neg. flap setting	-5 deg
CofG safe range	22% - 41% MAC
WEIGHTS	
Empty aircraft weight	279 kg
Minimum crew weight	60 kg
Max. crew weight	180 kg
Max take-off mass (MTOM)	472,5 kg
Fuel capacity	30 l
Usable fuel	27 l
FLIGHT CHARACTERISTICS	
Stall speed with flaps	33.7 knots
Stall speed clean	35.4 knots

Manoeuvring speed	73 knots
Max. speed with flaps	70 knots
Max. speed with airbrakes	86 knots
Max. operational speed	110 knots
VNE	121 knots
Minimum sink	128 fpm
Minimum sink speed	43 knots
Max. sink with airbrakes	1082 fpm
Best glide ratio	41:1
Best glide ratio speed	59 knots
Glide ratio at 75 knots	34.5:1
Glide ratio at 97 knots	26:1
Max. speed in tow	81 knots
45°- 45° roll time	3,9 s
Take-off distance at MTOM	115 m
Take-off dist. over 15 m obstacle at MTOM	230 m
Cruise speed at 75% power	78 knots
Best climb speed	59 knots
Best climb at MTOM	767 fpm
Ceiling MTOM	22,300 feet
Max. service load (safety factor 1,8)	+4g -2g
Max. tested load	+ 7.2g - 7.2g
Consumption at cruise speed	12 lph

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