

1.1.4 General Dimensions

DIMENSIONS	Australian	European	USA
Wing Span	9.97 m	9.97 m	32.7 ft
Wing Area	13.5 sq m	13.5 sq m	146 sq ft
Aspect Ratio	7.4		
Wing Weight	50 kg	50 kg	110.23 lbs
Overall Height (Control Bar Fwd)	3.65 m	3.65 m	11.98 ft
Trike Width	1.91 m	1.91 m	6.27 ft
Trike Length	2.745 m	2.745 m	9.01 ft
Wheel Track	1.7 m	1.7 m	5.58 ft
Wheel Base	1.89 m	1.89 m	6.20 ft
Trike Height	2.53 m	2.53 m	8.30 ft
Cockpit Width	0.7 m	0.7 m	2.30 ft
Wing (Packed) Length	5.6 m	5.6 m	18.37 ft
Wing Length (Short Packed)	4.2 m	4.2 m	13.78 ft

Table 1 Section 1. General Dimensions

1.1.5 General Description

1.1.5.1 Base

The XT 912 trike base is a two seat (in line) weight shift controlled aircraft. A Rotax 912 four-stroke engine producing 80 HP powers the base. The layout is typical of this class of two seat trike design, with the pilot passenger “pod” being suspended by a triangular frame, hinged from the mast head about the pitch and roll axes, to provide for weight shift control.

The cockpit has a tall windscreen for improved wind deflection and is cut away at the sides to allow for easier pilot access. The wide rear 6-inch wheels remain a feature of the XT base but the wheel pants/spats have been redesigned and include integrated aerodynamic fins to improve base yaw stability.

1.1.5.2 Wing

The Streak 3 wing is the result of continued refinement of the Streak series wing since 1999. The wing is fairly typical of an established class of swept, tapered, flexible fabric wings. The wing has a relatively high aspect ratio, enclosed cross bars with 80% double surface. It is very stable, and has been designed primarily for cross-country flying.

The Streak sail has several cloth and velcro shear ribs, which combined with an excellent sail “fit”, produces a wing that has light handling with impressive “feel” in turbulence. The battens ends are a unique design, which can be adjusted to vary tension for tuning the wing. The batten mechanism allows easy installation and removal of the battens.

An airfoiled aluminium section is used for the down tubes and king post. Clever engineering features fittings that look smart and are positioned to achieve minimum drag.

1.1.5.3 Aircraft

The XT 912 combined with the Streak 3 wing has proven to be an excellent combination. The total fuel capacity is 70 litres and combined with the Rotax 912 delivering a smooth 80 HP allows long cross-country flights.

2 LIMITATIONS

2.1 General

The limitations section of this POH outlines the various operating limitations, instrument function and placards necessary for the safe operation of this aircraft, engine and standard equipment.

2.2 Airspeed Limitations

Speed	KIAS	KCAS	Comments
Never Exceed Speed (V_{ne})	85 knots (98 mph)	74 knots (80 mph)	Do not exceed this speed in any operation
Maximum Manoeuvring Speed (V_a)	80 knots (92 mph)	70 knots (85 mph)	Do not make full or abrupt control movements above this speed

Table 1 Section 2. Airspeed Limitations

2.3 Airspeed Indicator markings

The standard pressure airspeed indicator on the left side of the dash has a red radial marking indicating 85 KIAS V_{ne} .

2.4 Power Plant Limitations

2.4.1 Engine

Manufacturer: Rotax Bombardier
Model: Rotax 912 UL 2 (4 Stroke)
Gearbox ratio: 2.43: 1

2.4.2 Engine Limitations

ENGINE LIMITATIONS	Metric	Imperial
ENGINE SPEED		
Take Off (Max 5 mins)	5800 rpm	5800 rpm
Maximum Continuous	5500 rpm	5500 rpm
PERFORMANCE		
Take -off Performance	59.6 kW	80 hp
Maximum Continuous Performance	58 kW	78 hp
OIL PRESSURE		
Max (Allowable for short period at cold start)	7 bar	102 psi
Minimum (Below 3500 rpm)	0.8 bar	12 psi
Normal (Above 3500 rpm)	2.0 - 5.0 bar	29 - 73 psi
OIL TEMPERATURE		
Maximum	140 deg C	285 deg F
Minimum (Note 1)	50 deg C	120 deg F
Normal Operating Temperature	90 -110 deg C	190-230 deg F
CYLINDER HEAD TEMPERATURE		
Maximum	150 deg C	300 deg F
EXHAUST GAS TEMPERATURE		
Maximum at Max TO power	880 Deg C	1620 deg F
Maximum at Max Continuous Power	850 Deg C	1560 deg F
Normal Temperature	800 Deg C	1472 deg F
AMBIENT START & OPERATING TEMPERATURE		
Maximum	47 deg C	116 deg F
Minimum	-25 deg C	13 deg F
Maximum at Max Continuous Power	800 Deg C	1472 deg F

Table 2 Section 2. Engine Limitations

NOTE

Minimum Oil Temperature of 50 deg C should be reached before take off. Operate for 2 min at 2000 rpm continue at 2500 rpm until minimum temperature is reached.

2.4.3 Fuel Grades

FUEL	
Fuel type	En228 Premium/Regular. Super grade gasoline, lead free, min RON 90

Table 3 Section 2. Fuel Specification

NOTE

Due to higher lead content in AVGAS, the wear of the valve seats and deposits in the combustion chamber will increase. Therefore, use AVGAS only if you encounter problems with vapour lock or if the other fuel types are not available.

2.5 Weight limits

	Metric	Imperial
Max take off weight	445 kg	981 lb
Typical empty weight *	223 kg	492 lb
Maximum empty weight *	260 kg	573 lb
Permitted range of pilot weights (Front seat)	55-100 kg	121-220 lb
(Rear seat)	0-100 kg	0-220 lb
Total maximum crew weight	200 kg	440 lb
Maximum under seat storage load per bag	2kg	4 lb

Table 4 Section 2. Weight Limits

* Includes 3 liters (2kg) unusable fuel. Empty weight is defined in section 6.2.

2.6 Operational Limits

2.6.1 Centre of Gravity limits

Centre of gravity limits are not critical on the base of a flex wing microlight. Having the trike unit attached to the wing from a single universal bracket, variations of cockpit loading and fuel loading cannot influence the aircraft's balance. The Edge XT is therefore not critical in regards to centre of gravity although the distribution of load in the trike base has a minor affect on the in-flight attitude of the trike base.

Base Suspension Range	Dimension
(Measured from the line joining the leading edge nose bolts to the suspension point.)	
STREAK III WING	1245 mm +/- 15mm

Table 5 Section 2. Centre of Gravity Limits

NOTE

The rear hole on the wing suspension bracket has been blanked off so that it cannot be used. Using the rear hole was found to show non-compliance to the minimum trim speed of 1.3 Vs.

2.6.2 Manoeuvring Limits

All aerobatic manoeuvres including spinning is prohibited.

Aerobatic manoeuvres including whipstalls, stalled spiral descents and negative "G" manoeuvres are not permitted. It must be emphasised that a whipstall, spiral descent or negative G manoeuvre can never be conducted safely. These manoeuvres put the aircraft outside the pilots control and put both the aircraft and its occupants in extreme danger.

Do not pitch nose up or nose down more than 45 degrees from the horizontal. The front support tube of the trike and the pilot's chest limits the fore and aft movement of the control bar respectively.

2.6.3 Bank Angle

Do not exceed 60 degrees of bank angle. In roll there is no stop for the control movement. For the purpose of pre-flight freedom, check by lowering each wing to within 10 cm of the ground (on ground level).

2.6.4 Flight Load Factor Limits

Max positive manoeuvring load factor	4.0 G
Negative load factors	Prohibited
Load factors below 1.0 G	To be avoided

Table 6 Section 2. Flight Load Factor Limits

2.6.5 Flight Crew Limits

Minimum flight crew is 1 person (Front Seat)

2.6.6 Kinds of Operation Limits

The aircraft is only to be flown under visual flight rules (VFR), and the minimum equipment required to operate under VFR conditions are an Air speed indicator, Altimeter and instruments required by the engine manufacturer.

In Australia, when operated at a public aerodrome or on a cross country flight, a compass and reliable time piece are required. Additional equipment may be required for some overseas operations.

2.6.7 Fuel Limitations

Maximum Usable Fuel	67 litre	17.7 US Gal
Unusable Fuel capacity	3 litre	.8 US Gal
Sump Capacity	500 ml	0.132 US Gal

Table 7 Section 2. Fuel Limitations

CAUTION

SIGHT GAUGE 10 LITRE GRADUATIONS INDICATE TOTAL FUEL, NOT USABLE FUEL. ZERO USABLE FUEL IS INDICATED WHEN THE FUEL IS LEVEL WITH THE BOTTOM OF THE SITE GAUGE

2.6.8 Maximum Passenger Seating Limits

One passenger maximum allowed.

2.6.9 Minimum Pilot Weight

The microlight aircraft must only be flown solo from the front seat. Minimum pilot weight flown solo shall not be below 55 kg. Maximum power at minimum TOW can cause an abrupt climb rate that, if uncorrected, may cause climb angles of greater than the placarded maximum of 45 degrees. Approximately 2/3 of maximum take off power is considered comfortable for a minimum weight takeoff. Take off distance will be extended at reduced power.

2.6.10 Other Limitations

Maximum Cross Wind	12 Knots	13 mph
Maximum Wind Strength	20 Knots	23 mph
Maximum Ambient Operating Temperature	47 deg C	116 deg F

Table 8 Section2. Other Limitations

No person who is untrained or unqualified in weight shift controlled flight or, who is unfamiliar with the wing and base combination, should ever attempt to pilot the aircraft unless under professional instruction.

The effect of light rain on the aircraft can increase the stall speed. It is extremely important to maintain speeds in excess of the take off and landing safety speeds when the wing is wet. If the aircraft has been left out in the rain or heavy dew it is necessary to wipe the wing down prior to take off. It is also recommended that the aircraft be flown solo first to ensure all excess moisture is removed. A chamois or sponge is recommended to remove the water.

Continued operation in heavy rain is not recommended due to the abrasive effect of raindrops on the propeller. Do not use waterproofing agents on the wing as the consequent beading of water droplets can significantly increase the stall speed.

CAUTION

MOISTURE ON THE WING CAN INCREASE STALL SPEED AND SHOULD BE REMOVED PRIOR TO TAKE OFF.

4 NORMAL PROCEDURES

4.1 General

This section of the POH describes procedures for normal operations of this aircraft.

WARNING

NO ATTEMPT SHOULD BE MADE TO FLY THE AIRCRAFT WITHOUT APPROPRIATE WEIGHT SHIFT AIRCRAFT FLIGHT TRAINING WITH AN APPROVED INSTRUCTOR.

4.1.1 Speeds for Normal Operation

Trim Speed	55-60 knots (63-75 mph)
Stall Speed at Maximum Take Off Weight	35.0 knots (40 mph)
Take Off Safety Speed & Nominated Approach Speed at MTOW	49 knots (56 mph)
Maximum Speed in Turbulence (Va)	80 knots (92 mph)
Maximum Level Speed (Vh)	80 knots (92 mph)
Max wind operating conditions (At ground level)	20 knots (23 mph)
Cross winds of up to	12 knots (14 mph)

Table 1 Section 4. Speeds for Normal Operation

4.1.2 Normal procedures Check List

This section is provided to supply the pilot with more comprehensive information of the normal procedures required to operate this aircraft and is written assuming the pilot has been trained in the assembly and use of a weight shift controlled microlight.

The ultimate responsibility for determining whether the aircraft is in a safe condition to be flown is with **YOU** the pilot in command. Pre-flight inspections are outlined in the following sections and are your responsibility if you are the pilot in command. Unlike the highway, there is no place to pull over and remedy an unsafe problem once you are airborne.

4.2 Wing Assembly Procedure

The following sequence of procedures assumes that the wing is packed up. If the wing and base were already assembled this section is not required.

4.2.1 Wing Assembly Procedure

Your instructor should demonstrate the correct assembly and disassembly procedures for your Microlight. This section is intended as a reference only and assumes prior knowledge of assembly. AirBorne trike wings should be assembled standing on the control frame. Assembling the wing on the control frame keeps the sail off the ground and therefore less prone to being soiled or damaged. The suggested assembly procedure is as follows:

UNZIP THE BAG. Lay the wing down with the zip up and the nose facing approximately 120 degrees from the wind direction. Unzip the bag but do not completely remove it from the wing. Undo centre 2 clips.

5 PERFORMANCE

5.1 General

The performance data in the following section has been computed from actual flight tests with the aircraft and power plant in good condition and using average piloting techniques. It should be noted that piloting techniques, climatic conditions and aircraft condition will cause significant variation to these performance figures.

5.2 Take Off and Landing

Take Off

Performance at MTOW	Australian	European	USA
Take off Distance to 15 m (50 ft)	247 m	247 m	810 ft

Table 1 Section 5. Take Off

Takeoff distances are specified for:

Sea Level with:

Max Take Off Power

A level dry runway

With short grass

Still wind

And temperature of 15 deg C.

The following factors will increase takeoff distance:

Reduced Power Take Off

Higher drag runway surfaces such as wet or long grass

Tail wind

Uphill takeoff

OAT above 15 deg C

Runway altitude above sea level

The pilot is required to take into account the effect of the above when determining takeoff distance.

Landing

Performance At MTOW	Australian	European	USA
Landing Distance from 15 m (50 ft)	325 m	325 m	1066 ft

Table 2 Section 5. Landing

Landing distances are specified for:

Sea Level with

A level dry runway

With short grass

Still wind

And temperature of 15 deg C.

The following factors will increase landing distance:

Lower drag runway surfaces such as tarmac

Tail wind

Down hill landing

OAT above 15 deg C

Runway altitude above sea level.

The pilot is required to take into account the effect of the above when determining landing distance.

Crosswind components of up to 12 knots at maximum AUW are within aircraft operating limitations.

Always exercise judgement when selecting locations for take-off and landing. Leave adequate margin for appropriate control action in the event of sudden engine failure or turbulence being encountered.

CAUTION
**TAKE OFF AND LANDING DISTANCES MUST
 BE INCREASED BY 20% FOR EACH 1000
 FEET OF ALTITUDE ABOVE SEA LEVEL.**

5.3 Climb

Performance at MTOW	Australian	European	USA
Climb rate (49 kts)	825 ft/min	4.2 m/sec	825 ft/min
Best Climb Speed	49 kts	91 km/hr	57 mph

Table 3 Section 5. Climb

Climb data is for ISA conditions (Sea Level at 15 deg C)

Sea Level Gradient of Climb is 17.8%

5.4 Airspeed Calibration

All Air Speeds in this POH are expressed as Knots Indicated Air Speeds (KIAS) unless otherwise noted. Below is a table showing the relationship between Indicated Air Speed and Calibrated Airspeed. The table assumes zero instrument error.

Indicated Air Speed (KIAS)	Calibrated Air Speed (KCAS)
35	35
40	39
45	43
50	47
60	55
70	63
80	70
85	74

Table 4 Section 5. Airspeed Calibration

5.5 Stall Speeds

Performance	Australian	European	USA
Stall Speed @ MTOW	35 kt	65 km/h	40 mph
Stall Speed @ 320 kg TOW	31 kt	57 km/h	36 mph

Table 5 Section 5. Stall Speeds

5.6 Glide

Glide figures have been determined with the engine off at maximum take off weight with the trimmer set in the fast configuration

Performance - 54 kts at MTOW	Australian	European	USA
Descent Rate	770 ft/m	3.9 m/s	770 ft/m
Descent Gradient	15.3%	15.3%	15.3%
Glide Distance from 1000ft AGL	4.6 km	4.6 km	2.5 Nm

Table 6 Section 5. Glide

Glide data is for ISA conditions (Sea Level at 15 deg C)

5.7 Cruise

Performance at MTOW	Australian	European	USA
Cruise Speed	65 kts	120 km/hr	75 mph
Typical Fuel Burn @ Cruise (See Note)	12 lt/hr	12 lt/hr	3.17 gal/hr
Range @ Cruise	702 km	702 km	436 miles

Table 7 Section 5. Cruise

NOTE

Fuel consumption figures are included as a guide only. The consumption figures should not be used for planning purposes. Changes in aircraft configuration, load, altitude, wind strength and direction as well as climatic conditions will cause significant variation in fuel consumption.