



## **BushCat Systems Guide**

**Rotax 912 ULS**



**Note: This systems guide is to be used in conjunction with the BushCat Pilot Operating Handbook.**

**A. Powerplant**

a. Rotax 912 ULS

- i. 100HP
- ii. 4 cylinder horizontally opposed.
- iii. 2:1 gearbox reduction.
- iv. Dual carburetors and air filters.
- v. Dual magneto ignition system.
- vi. Air cooled cylinder bodies.
  - 1. Liquid cooled cylinder heads.
- vii. Naturally aspirated.

**b. Engine Controls**

- i. Controlled by the T throttle integrated into each armrest.
- ii. Choke, to be used on a cold start.

**c. Engine Lubrication System**

- i. Dry sump forced lubrication system.
- ii. Oil tank mounted to the right side of the engine.
- iii. Cooled via 2 radiators in sequence with each other.
  - 1. One radiator on top of the engine and the second mounted below the engine.
  - 2. Cooler ambient temperatures may require the use of blanking strips.
- iv. 3.5 to 3.6 liters of oil.
- v. Oil Type: Aeroshell Sport Plus 4

**d. Cooling System**

- i. The Rotax 912ULS is both a liquid and air cooled engine.
- ii. Cylinder heads are liquid cooled with ram air.
- iii. Cylinder bodies are air cooled.
  - 1. Cooling liquid is cooled via a radiator on the front of the engine.
- iv. Coolant type: Prestone DEX-COOL



**e. Carburettor Heat**

- i. Carburettor heat is designed as an “always on system”.
- ii. Warm cooling liquid is bled off the engine cooling system and ran through aluminum jackets around the carburettor intake manifolds.
- iii. Requires no pilot action.

**B. Propeller**

- a. 3 Bladed.
- b. Ground adjustable pitch.
- c. Composite construction.
- d. Type: Kiev Prop.

**C. Electrical System**

- a. 12 Volt system.
- b. 12 volt 18 amp hour battery.
- c. Electrical system charging is done by a generator like fly wheel system via an electro mechanical pick up that produces 14.2 volts and 22 amps of charging to the system.
- d. Electricity is then sent to a regulating unit that turns the AC current into a 14.2 DC current.
- e. Master switch “On” position turns on electrical supply from the battery.
- f. Switches on the instrument panel such as “radio”, “strobe lights”, “transponder”, etc all pull electricity from this system.
- g. Electrical system is monitored by an ammeter, check for your specific aircrafts ammeter location and operating functions.
- h. The electrical system is protected by a set of 10 resettable circuit breakers (number of breakers can vary).
  - i. Note: Some BushCat aircraft have fuses instead of circuit breakers.
- i. Engine ignition system consists of 2 independent electric ignition systems. For ease of understanding think of them as “Mag 1 and Mag 2”.
- j. EFIS equipped BushCats will have a backup battery that supplies limited power to the EFIS when power is lost.



#### **D. Fuel System**

- a. Single 24 gallon fuel tank located behind the pilot and co pilot seats.
- b. Dual fuel pickups and fuel filters.
- c. Electric fuel pump equipped and to be used during critical phases of flight and is mounted against the fuel tank support tube.
- d. Fuel selector allows or shuts off fuel flow to the engine and can be turned either “on” or “off”.
- e. MoGas or 100LL AVGAS can be supplied to the engine, fuel types can be mixed.
  - i. AeroSport only fuels our BushCat fleet with 100LL AVGAS.
- f. The use of 100LL AVGAS requires a 50 hour maintenance interval.

#### **E. Landing Gear**

- a. Single piece aluminum spring gear system that is bolted to the underside of the aircraft.
- b. Landing gear is fixed.
- c. Nose gear is connected directly to the rudder pedals for steering on the ground.

#### **F. Brake System**

- a. Hydraulic brake system.
- b. Toe brake system on both the pilot and co-pilot side of the aircraft.
- c. Master cylinders are located on pilot and co-pilot toe brakes.
- d. Hydraulic fluid reservoir is located on the co-pilots side firewall.
- e. Brake system consists of a rotor and brake pad system (1 rotor and 2 brake pads per side) on the main landing gear.
- f. A parking brake is equipped on the floor of the pilots side. To activate the parking brake, brakes must be pressed and then parking brake activated or the brake may be set and the toe brakes pressed. Either method locks hydraulic fluid in the lines and holds the brake pads against the rotors.

#### **G. Flight Controls**

- a. Cable and pulley system for the ailerons, rudder, and elevator.
- b. Flaps are mechanical and operated by pulling down on the flap handle in the cockpit and locking the nut into the reserve slot.
  - i. Flaps are controlled via a pushrod system.



# NOTES