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SERVICE BULLETIN

IMPORTANCE	Very High
AREA AFFECTED	Electrical
SB SERIAL NUMBER	Cheetah/002/09-2009

SUBJECT: 912s power supply cables gauge to small.

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1) Planning Information

1a) Affectivity

Cheetah XLS aircraft fitted with the Rotax 912s Engine

1b) Reason

Rotax 912s starter draws more Amperes than anticipated.

1c) Description

Recently we received feedback from a client that his 912s motor failed to start in the mornings, this led to the conclusion that the choke system was malfunctioning. After a few start attempts the battery was depleted and had to be changed. After the battery had been changed the 912s would start. Upon further inspection into the possibility of loose connections it was found that the power supply cables from the battery to the starter were very hot, i.e. not of sufficient thickness (gauge) to compensate for the higher current draw of the Rotax 912s engine.

1d) Compliance

Immediate compliance: On the 1st start of the day, where the 912s takes longer than 5 seconds to start, **abort the start**. Wait 1 minute and attempt to start the 912s again keeping the starter engaged for not more than 5 seconds, if the 912s has not fired yet, **abort the start**. The Pilot / Owner should open the top engine cowling and touch the electrical power supply cables to feel the temperature. **CAUTION: the cables could inflict burn injuries**. If the electrical cables are hot. Replace immediately. Refer to replacement parts.

Long term compliance: If the electrical supply cables are not hot, replace with part identified by Rainbow aircraft within 5 flight hours.

1e) Man power

1 person will be able to accomplish this task.

1f) Weight and balance

Weight and balance is not effected

1g) Publications effected

100 hour / Annual inspection checklist. (for A&P approved personnel use)

2) Material information

2a) Replacement parts

No.	Description	Quantity	Part Number
1	AWG4 wire 2400mm Battery to Starter Solenoid	1	-
2	JST 22-6 Plain Bolt Attachment	4	STD-000556
3	Ø12.7x50mm Black Heat Shrink Tubeing	4	STD-000339
4	200x4.7mm Tie Wrap	10	STD-000218

2b) Required tooling

Rainbow Aircraft only recommends the following tooling to be used as these are the tooling used by us to facilitate the repair.

- Wire cutters
- Scissors

2c) Required special tooling

Electrical lug Crimping tool (Aviation Standard)
Heat gun

3) Accomplishment procedures

3a) General information

The battery must be disconnected first before any work is carried out.

3b) Work instructions

1. Remove the engine cowling to gain access to the engine bay.
2. Disconnect the wire running from the battery to the starter solenoid, as well as the wire running from the starter solenoid to the starter motor.
3. Cut the cable ties joining the cables to one another.
4. Prepare the replacement AWG 4 wires (Item 1) by cutting the provided wire to the required lengths. Then insert heat shrink (Item 3) onto the wires followed by the JST 22-6 plain bolt attachment (Item 2). Attach the bolt attachment to the ends of the wires with the crimping tool before shrinking the heat shrink with a heat gun.
5. Connect the longer wire between the starter solenoid and starter motor and then connect the shorter wire between the starter solenoid and the battery.

3c) Final Inspection

1. Once the connection is secure ensure that the starter motor engages correctly (with the wheels chocked and someone competent in control of the aircraft, before cable tying the cables together and attaching the cowling.

4) Feedback

Rainbow Aircraft would greatly appreciate your feedback to further improve our customer after sale service.

Information required: Cheetah registration number, aircraft hours, findings on the bolt and the repair you chose to take. Send to soutdelange@gmail.com Rainbow Quality Assurance.