THE GLIDING FEDERATION OF AUSTRALIA

GFA AD-649
(ISSUE 1)

GFA AIRWORTHINESS DIRECTIVE

TYPE AFFECTED: STEMME S-10VT. All serial no's where Fuel pressure sensor type 11AB-K01 is installed.

NOTE: From Serial No 84 & onwards a type 11AB-KD was fitted as original equipment. This AD does not apply to aircraft Serial no 84 & above ***unless*** the original equipment sensor type 11AB-KD has been replaced with a type 11AB-K01 sensor.

SUBJECT: Differential fuel pressure Sensor: Inspection / Replacement.

REASON: Failure of internal components of the type 11AB-K01 regulator has led to fuel leakage into the airbox via the air pressure sensor line. Normally this fuel would be vented safely via the drain tubes but the possibility of a fuel leak into the engine bay cannot be excluded.

DOCUMENTATION: The LBA has produced AD 2007-248, EASA has produced EAD 2007-0191-E, and Stemme has produced SB A31-10-081 which is attached & forms part of this AD. Note: Only the English translation pages of this bulletin are included.

ACTION REQUIRED: In accordance with SB A31-10-081 carry out the following actions:-

ACTION 1: ***BEFORE NEXT FLIGHT*** Identify the type of fuel differential pressure regulator fitted to the aircraft by comparison with the diagrams in the SB. If the later type 11AB-KD is fitted no further actions are required.

ACTION 2: If the aircraft is fitted with a type 11AB-K01 sensor, upgrade the requirements of the Daily Inspection by insertion of the Flight Manual page 4-2, supplied as part the SB.

ACTION 3: Replace the type 11AB-K01 regulator with the later type 11AB-KD regulator. Completion of Action 3 cancels the upgraded DI requirement & thus Page 4-2 is to be removed from the Flight Manual.

WEIGHT AND BALANCE: Negligible.

SIGNED: GFA STOA
SENIOR TECHNICAL OFFICER AIRWORTHINESS

For and on behalf of:
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IMPLEMENTATION: ACTION 1: BEFORE NEXT FLIGHT.

ACTION 2: BEFORE NEXT FLIGHT.

ACTION 3: At the next Form II inspection, but in any case not later than 30 September 2007.

COMPLIANCE: The requirements of this GFA Airworthiness Directive are mandatory. This Directive is issued pursuant to the Rules and Regulations of the Gliding Federation of Australia Inc.

SIGNED: John G Vining GFA STOA

SENIOR TECHNICAL OFFICER AIRWORTHINESS

For and on behalf of:

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STEMME F & D DO: EASA.21J.250	Service Bulletin	Document Number: A31-10-081
	Differential fuel pressure sensor – S10-VT	Am.-Index: 01.a
		Page: 3 of 9

This Service Bulletin provides from page 1 to 2 the original version in German, approved by the EASA, and page 3 to 4 a translated version in English. The translation has been performed to the best of our knowledge and judgement.

1 Subject:

Identification and if necessary mandatory replacement of the differential fuel pressure sensor 11AB-K01 by the differential fuel pressure sensor 11AB-KD

2 Affected Powered Sailplane:

Motor glider STEMME S10, model: S10-VT;
EASA Type Certificate No. EASA.A.054 / FAA-TCDS: G06CE

S/N: 11-001 up to 11-083

3 Time of compliance:

- *action 1: before next flight*
- *action 2: before next flight*
- *action 3: during the next maintenance event, mandatory replacement not later than September 30. 2007*

4 Background Information:

The differential fuel pressure sensor 11AB-KD was designed end of year 2003 after the end of production of the old differential fuel pressure sensor 11AB-K01. The old differential fuel pressure sensor 11AB-K01 was installed into the serial production until April 2004.The differential fuel pressure sensor 11AB-K01 has a life time limitation of 5 years. The new differential fuel pressure sensor 11AB-KD have no life time limitation.

As an result of a fault report of a operator of a Stemme S10-VT a investigation of this sensor was performed. The fault report describe a fuel leak through the air pressure line into the airbox. The fuel escape out via the drainage tubes.

After investigation of this differential fuel pressure sensor 11AB-K01 the possibility of a leak to the engine compartment can not be excluded.

A mandatory replacement of the old differential fuel pressure sensor 11AB-K01 will be introduced with this Service Bulletin.

32 installation kits 11AB-KIT was provided to different owners of Stemme S10-VT in the period between April 2003 and May 2007. The Stemme-Group has no response about the installation of these kits. In respect to the safety of the Stemme S10-VT fleet all serial numbers of Stemme S10-VT are affected up to the first S/N, where Stemme has installed the new differential fuel pressure sensor 11AB-KD in the serial production.

5 Actions:

Action 1:

- *Identification of the installed differential fuel pressure sensor*
  - ***old version** differential fuel pressure sensor 11AB-K01 **more actions are necessary***
  - *new version differential fuel pressure sensor 11AB-KD no more action are necessary*

Pictures for identification are placed in the annex to this SB.

Action 2

If the old differential fuel pressure sensor 11AB-K01 is identified:

- *Insertion of a Flight Manual page with reference to this SB;*
  upgrading of the third check item "Daily Inspection" according to the Flight Manual chapter 4.3. , subchapter 4.3.1 "Engine":
  "... installed differential fuel pressure sensor must be checked with fuel cock "OPEN" and main fuel pumps- "ON", for any signs of leakage in the area of case splitting."

CAUTION: If a leakage will be suppose, the manufacturer must be inform. Until a final decision or replacement of the affected differential fuel pressure sensor the further operation of the airplane is not allowed.

Action 3

- *Replacement of the differential fuel pressure sensor 11AB-K01 by the new version 11AB-KD*
- *removal of the additionally introduced Flight Manual page with reference to this SB*

6 Mass and balance:

None effect.

7 Associated documents/parts:

Action 2:

- *Flight Manual page 4-2 with reference to this SB*

Action 3:

- *installation kit 11AB-KIT.*
- *Installation Instruction A34-10-081 "Replacement of the differential fuel pressure sensor".*

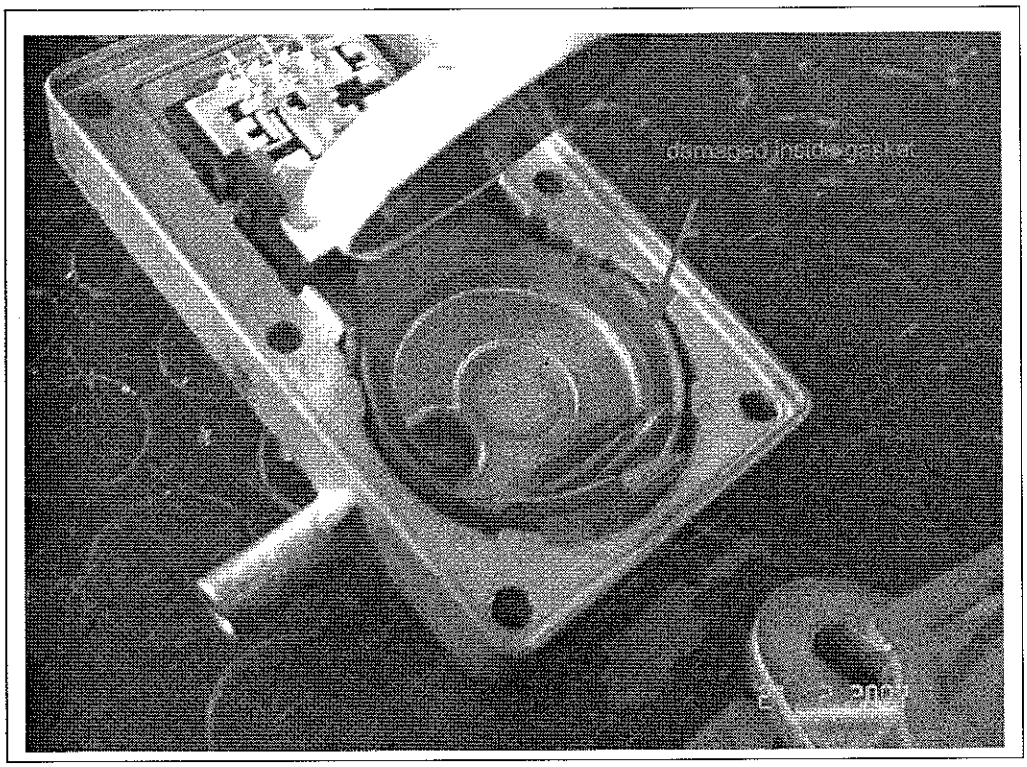
8 Accomplishment and log entry:

An authorised mechanic may carry out the actions described in this service bulletin.

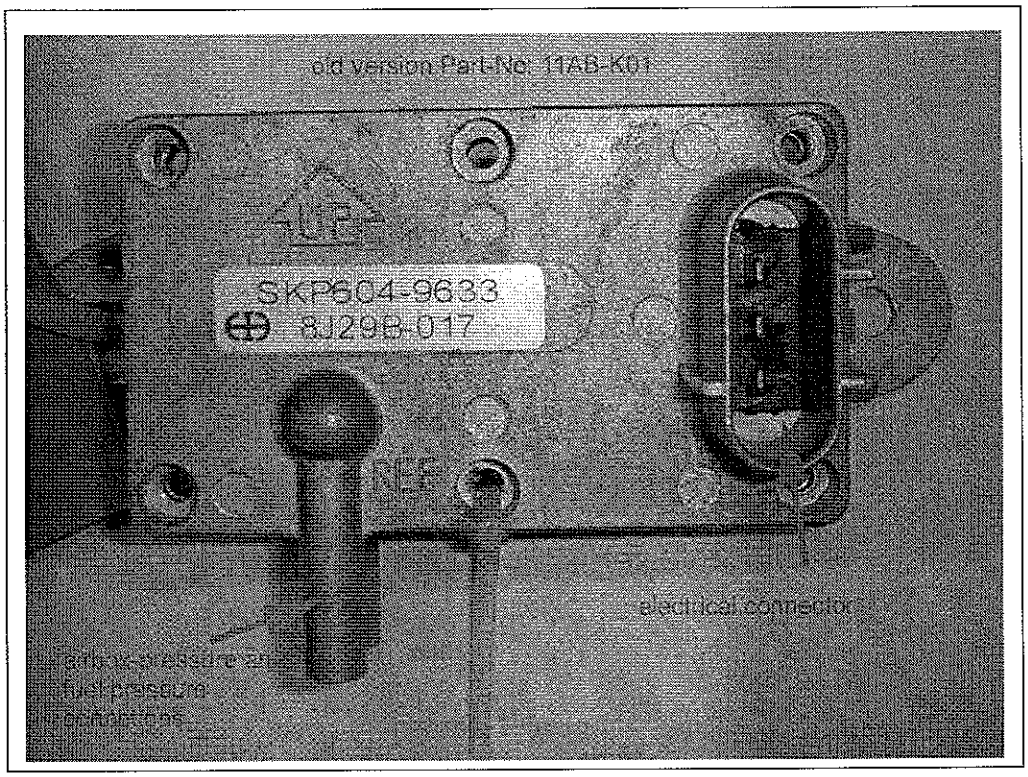
The completion of this SB must be checked and entered in the airplane's log book by a licensed inspector. The regulations on the keeping of service records must be adhered to.

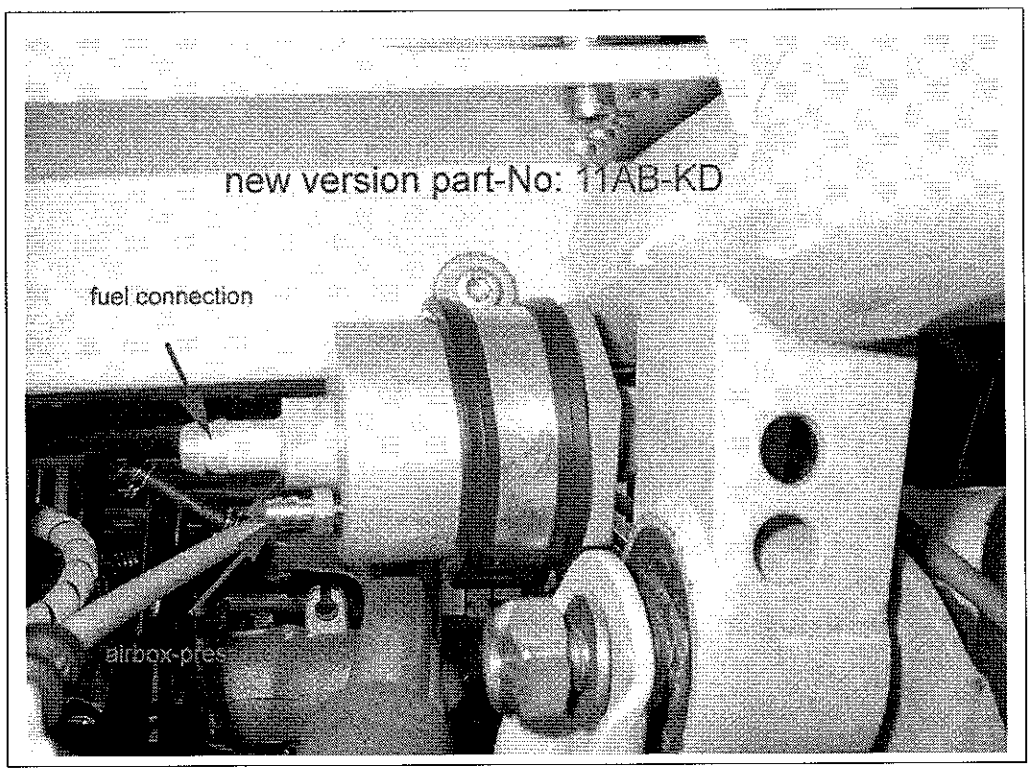
(End)

Actual Damages



Lineup for identification





4.2.1.3 Horizontal Tail

The elevator is provided with an automatic connector. It is pushed from the front to the fuselage centring bolts until the front fitting tongue fits into the receptacle slot. Then unlock the receptacle with the on-board rigging tool, push the tailplane downwards into the fitting until the spring bolt is freed. The spring bolt must engage.

- The interlocking bolt must not stick out beyond the leading edge of the fin. Only then the connection is properly secured.
- Check correct fitting of the horizontal tailplane by pushing the leading edge upwards.

4.2.1.4 Fuselage Fairings

- Install side and upper fairings. Following this, engage the two bowden cables for the cowl flaps.

NOTE: Before installing fairings, the Daily Inspection (➔ 4.3.1 and 4.3.2) has to be completed.

4.2.2. Fuelling

Fuel is filled into the wing tanks via the filler caps in the outer area of the centre wing. To open the tank caps the slotted screw is pushed in and turned to the left with a screw-driver. To close the cap, push and turn right the screw simultaneously.

Certified fuels see section 2.4.2 "Fluids", maximum fuel volume see section 2.4.1 "Engine, Propeller, Fuel".

WARNING: There must be **sufficient fuel in both tanks** for take-off. Do not perform a take-off when there is fuel in only one tank.

CAUTION: The S10-VT tends to slightly lower it's right wing during fast cruise at high power settings, which makes the fuel supply from the right wing tank more difficult (➔ 4.5.3.2 a))). For refuelling please consider that **the left tank should be at least as full as the right tank.**

NOTE: Fuel tank inlets are close to the upper part of the tanks; therefore wings must be level before opening the caps or when fuelling to avoid an overflow of fuel overboard.

NOTE: At high temperatures or when high temperatures have to be expected, tanks should not be filled completely to allow for temperature expansion and to avoid overflow through the ventilation tube.

4.3. Daily Inspection

Before commencing flight duties the pilot responsible has to carry out a visual inspection of the a/c.

It is highly important to have the a/c properly checked following each rigging or working on the a/c or its systems. The daily check prior to the first flight of a day is obvious, many accidents could have been avoided, if a proper check would have been performed.

A first walk-around is to check the surfaces for cracks in coating, for local bucklings and for roughness. If something seems unusual ask a specialist. During walk-around check any drainage and ventilation holes and pick clean if necessary (see Maintenance Manual section 6.7).

Sequence for visual check (Ignition and master switch check OFF!):

4.3.1 Engine

- remove upper and both lateral portions of the cowling;
- visual inspection of the engine - inspect cooling air ducts for foreign objects,
- check oil-, liquid cooling and fuel systems for leakage's; ***installed differential fuel pressure sensor must be checked with fuel cock "OPEN" and main fuel pumps- "ON", for any signs of leakage in the area of case splitting.***
- check level of cooling fluid in overflow reservoir when the system is cold; quantity should be between min and max marking; fill up if necessary; for details see section 2.4.2.2 "Coolant Fluid".
- check oil quantity between min and max marking and refill if necessary; for flight-times of more than 8 hours oil level should at least indicate middle between min and max marking; for details see section 2.4.2.3 Lubrication Fluids.
- reinstall side parts of engine cowling and secure;
- cooling air flaps: check for proper function by operating the Propeller dome (move forwards and backwards several times);