



CRUISER
AIRCRAFT

No.: SB-SC-095

DATE: 2023-03-24

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SERVICE BULLETIN

Czech Aircraft Group s.r.o.
Na Záhonech 212
686 04 Kunovice
Czech Republic
info@cruiseraircraft.cz

REV.: -

DATE: -

MODEL AFFECTED:	SportCruiser / PiperSport operating outside EASA rules
SUBJECT:	Replace fuel quantity sensor
AIRCRAFT AFFECTED:	All SportCruiser / PiperSport aircraft up to S/N C0416
COMPLIANCE:	Apply this Service Bulletin when replace of AST 250489 fuel quantity sensor is needed

DESCRIPTION:

SportCruiser / PiperSport aircraft up to S/N C0416 were equipped with AST 250489 fuel quantity sensor. AST 250489 is no more available as a spare part. New fuel quantity sensor was designed as suitable replacement.

AUTHORISATION TO PERFORM:

Repairman (LS-M) or Mechanic (A&P)

REASON:

AST 250489 is no more available as a spare part.

MANPOWER:

8 hours

SPECIAL TOOLS:

Common tools for aircraft maintenance.
Pressurization equipment.

WEIGHT AND BALANCE:

N/A

ELECTRICAL LOAD DATA:

N/A

PUBLICATIONS AFFECTED:

SC-AMM-1-0-00 – Airplane Maintenance Manual (AMM)

MATERIAL AND COSTS:

All costs to be covered by the aircraft owner / operator.



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MATERIAL:

ITEM No.	NOMENCLATURE	DESCRIPTION	QUANTITY
001	CW0155N	Fuel quantity sensor	1 pc
002	3171T030	Rivet	12 pcs
003	3111X518	Bolt	5 pcs
004	3131X502	Washer	5 pcs
005	4610A002	Loctite 221	1 pc
006	6501DY04 ¹	Fuel level gauge	1 pc

¹ only for analog equipment

ACCOMPLISHMENT INSTRUCTIONS:

NOTE: During the implementation of this SB follow AC43-13 and AMM, Chapter 15.

- 1) Move the aircraft to a place suitable to perform the work.

NOTE: Fuel quantity sensor is located in each wing fuel tank.

- 2) Remove engine cowlings and disconnect positive (+) battery terminal (see AMM, Chapter 11).
- 3) Set fuel selector to OFF.
- 4) Drain all fuel from fuel tank (see AMM, Chapter 9).
- 5) Drill out all 12 pcs of rivet in cover for access to the sensor.

NOTE: There is danger of fuel tank damage. Drill carefully only head of rivet.

- 6) Remove old sensor. Take a note or picture of electrical connection for further sensor installation (see AMM, Chapter 9).

SPORTCRUISER / PIPERSPORT AIRPLANES UP TO S/N C0416

SPORTCRUISER AIRPLANES FROM S/N C0416

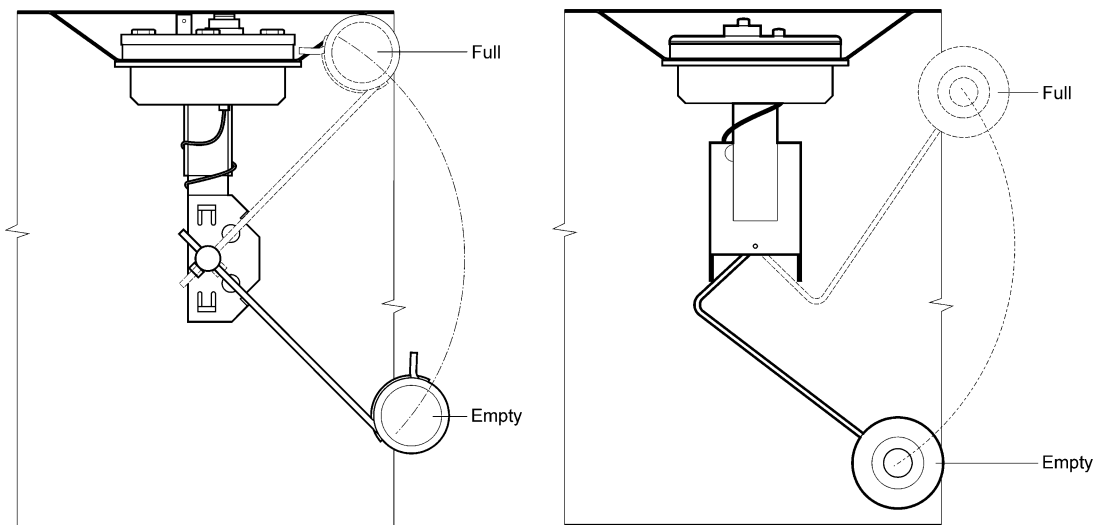


Fig. 1: Float mechanism

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- 7) Clean flange of the tank.
- 8) Install the new fuel quantity sensor and connect all connectors.
- 9) Use new bolts and washers. Bolts secure with Loctite.

NOTE: Make sure that the float (the ball) in lower position is not in contact with bottom of the tank. There has to be minimum 2mm gap (1/16"). The stops of float sensor can be slightly bend to obtain required gap (see Fig. 2). The gap can be checked via hole for fuel tank cap using mirror and flashlight.

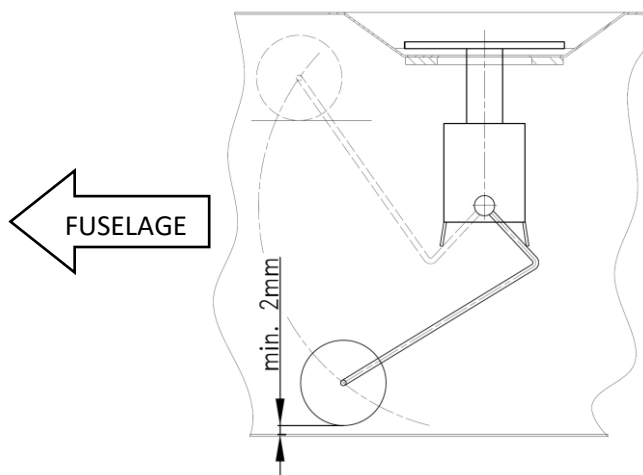


Fig. 2: Gap between float and tank skin

DEPENDS ON AVIONIC CONFIGURATION, FURTHER PROCEDURE IS DIVIDED INTO TWO SECTIONS (A AND B).

A-SPORTCRUISER / PIPERSPORT AIRCRAFT EQUIPPED WITH ANALOG INDICATOR:

- 10) Fuel level gauge is located in the right dashboard. Dismount old gauge corresponding to affected fuel float sensor.
- 11) Install and connect new gauge.
- 12) Perform following test:
 - a. Orient your plane into level flight attitude. Level the airplane according to the rivet line located on the fuselage (on LH and RH sides), under the canopy frame.
 - b. Ensure that airplane is secure against swinging.
 - c. Add fuel into tank according to Tab. 1 below and verify proper indication.

INDICATOR	ADD FUEL [LITER]	ADD FUEL [US GAL]
1/4	15	3.96
1/2	29	7.66
3/4	42	11.10
1	50 (or more)	13.21 (or more)

Allowed tolerance: ± 4 l (1.06 gal)

Tab. 1: Verification of proper analog system indication

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Fig. 3: Fuel level gauges

- d. Check indication of empty tank. The gauge is required not to indicate any quantity of fuel when tank is empty. Conversely when indicator indicates empty tank, there are 1-3 liters (0.26-0.79 US gal) of non-measurable quantity in the tank.

13) Go to point 15.

B-SPORTCRUISER / PIPERSPORT AIRCRAFT EQUIPPED WITH DYNON EMS D120:

14) Change fuel quantity sensor in EMS D120 system require fuel level calibration.

- a. Orient your plane into level flight attitude. Level the airplane according to the rivet line located on the fuselage (on LH and RH sides), under the canopy frame.
- b. Remove engine cowling.
- c. Connect aircraft to external power source via main battery connectors.
- d. It is highly advised that create a backup of your EMS-D120 via the Dynon Product Support Program. Keep the firmware backup file on your computer, flash drive or other appropriate storage.
- e. Perform fuel level calibration according to Dynon Avionics EMS-D120 Installation Guide P/N 100591-000 (<http://www.dynonavionics.com/d10-d100-series-documentation.php>).
- f. In section "Enter the approximate number of gallons or liters the tank can hold." enter 55 liters (14.53 US gal).
- g. Create a backup of your EMS-D120 firmware backup file on your computer (this time with new calibration data).
- h. Verify full range of fuel quantity indication on EMS-D120. Both precise adding and precise drain fuel is possible method.
- i. Check indication of empty tank. The indicator is required not to indicate any quantity of fuel when tank is empty. Conversely when indicator indicates empty tank, there are 1-3 liters (0.26-0.79 US gal) of non-measurable quantity in the tank.
- j. Disconnect external power.

15) Check airplane fuel system tightness by air (see AMM, Chapter 9).

16) Connect positive (+) battery terminal (see AMM, Chapter 11).

17) Install engine cowling.

18) Install original fuel sensor cover using blind rivets.

19) Clean and degrease cover and surrounding surface. Head of rivet paint suitable metal paint.

20) Restore the aircraft to airworthy condition.



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21) Update aircraft records to reflect compliance with this Service Bulletin.

APPROVAL:

This Service Bulletin has been approved by:

TITLE:	Head of Design Organisation	Airworthiness Manager
NAME:	David Bilík	Jan Pejchar
HAND WRITTEN SIGNATURE:		



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