AG-SB-2016-06-B-EN – Cavalon fuel-tank inlay ring

Category B

EFFECTIVE DATE	SUPERSEDES/REPLACES
06.09.2016	N/A (initial issue)

APPLICABILITY

This Service Bulletin is applicable for all Cavalon that are affected by fuel smell in the cockpit.

COMPLIANCE

To be performed with the next maintenance.

BACKGROUND

Some Cavalon owners have complained of a fuel smell in the cockpit, noticeable mainly after standing a longer period of time with the doors closed. This has been traced sometimes to small gaps in the sealing between the fuel tank flange and the composite body.
At the affected Cavalon an aluminium “inlay ring” is placed inside the filler neck and by means of a new rubber seal combined with longer fuel filler mounting screws allows the fuel tank flange to be pulled uniformly against the body – squeezing the new rubber seal between to ensure a perfect sealing (see fig. 1).

RISK OF NEGLECT

Failure to comply with this instruction/information will result in:

- Possible damage to the aircraft
- Loss of related warranty.

SCOPE OF WORK

- Check for seepage from the fuel outlet, failure of fuel level sender unit gasket, poor seal between tank lids and the tank, or poor seal tank to body.

AFFECTED AREAS

Fuel tank

SPECIAL TOOLS & CONSUMABLE MATERIALS

xx-00-00-S-xxxxx (L) 7mm ring spanner bent to fit fuel inlet (see fig.3)

PARTS

xx-00-00-S-42901 (L1) Inlay tank insert - kit

LABOR AND REQUIREMENTS

To accomplish 1.5 h

Task may only be performed by an organization or individual trained and entitled to do 'Line Maintenance'!

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SUPPORT POLICY

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REFERENCES

Manufacturer Maintenance Manual (MMM) in latest revision.

DOCUMENTATION

The accomplishment of this Service Bulletin, or the decision of its rejection, must be properly documented, if such procedure is required by the relevant authority.

Warnings Caution and Notes

This instruction uses **WARNING**s, **CAUTION**s and **NOTE**s in bold italic letters to indicate especially critical and important instructions. The call-outs appear at the top of the Maintenance Job Card if of general nature or applicable for the complete task, or will directly precede the individual Work Step.

The meaning of each call-out is defined below:

WARNING: A warning means that the neglect of the appropriate procedure or condition could result in personal injury or fatal accidents.

CAUTION: A caution means that the neglect of the appropriate procedure or condition could result in damage to or destruction of equipment.

NOTE: A note stresses the attention for a special circumstance, which is essential to emphasize.

Category Codes

A Safety critical - failure to comply may result in a significant reduction of flight safety, injury or death

B Important - failure to comply may result in reduced safety margin, injury and/or equipment damage

C Beneficial - improves operating behaviour, reliability and/or maintainability

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COMPLIANCE PROCEDURE

GENERAL, REFERENCES AND REQUIREMENTS

Task may only be performed by an organization or individual entitled and trained to do line maintenance.

Secure gyroplane against unauthorized or unintended operation.

Execute procedure only in cold engine condition.

Position the aircraft on level ground with the brakes applied.

The work detailed below may be carried-out with some fuel in the tank, but the tank(s) must not be full. Ensure that a suitable fire-extinguisher is to-hand. When drilling through the filler-neck flange ensure that no debris falls into the tank – use of slow rpm will assist, but if this does occur the fuel must be "vacuumed" out of the tank with a large-bore syphon tube and the tank must be cleaned.

SPECIAL TOOLS, CONSUMABLE MATERIALS AND PARTS

SP	IMPORTANT NOTE: Procedure involves spare parts. Check parts list below for ordering details of affected components!
xx-00-00-S-xxxxx (L)	7mm ring spanner bent to fit fuel inlet (see fig. 3)

PRECAUTIONS AND SAFETY MEASURES

CAUTION: Failure to comply with this instruction will cause the loss of warranty referred and/or related components!

NOTE: Procedure involves handling and disposal of special materials. For your health and environmental aspects respect all applicable regulations!

NOTE: Absolute cleanliness at any time during execution of the procedure must be ensured

PROCEDURES

1 Using the specially formed spanner to hold and retrieve the nuts and plain washers inside the filler neck remove the 6-off M4 countersunk screws. The top screw retains the braided earth strap – attach a safety string to this to avoid loss inside the fuel tank (fig 2-5).

2 The two most fwd screw positions do not pass into the fuel tank void but into rivnuts secured in the body moulding. These must be carefully and progressively drilled-thru 4.1mm diameter. If the drill bites into the rivnut and causes it to spin in the body the fuel cap mounting plate must be removed completely by prising it off the cork gasket between it and the body.(The gasket is bonded in place with Loctite 5331 sealant). The rivnut heads may then be slotted (using a Dremmel or similar tool) to enable the rivnut heads to be held still during drilling (fig 6).

3 Replace the fuel cap mounting plate into position with its gasket and sealant.

4 Place the rubber seal between the the fuel tank flange and the body (fig 9).

5 Form the inlay ring so that it may be "spiralled" into position inside the filler neck. Position the open slot to the front of the aircraft (fig 7-8).

6 Fit M4 x 50 screws on the front two mountings and M4x40 screws on the others. Use an M4 stiff nut and plain washer on each screw. Ensure that the earth strap is refitted to the top-most fastener. When all fasteners are in place tighten in sequence, hand-tight only to avoid distortion of the filler neck flange

Note: the screw and nut are both stainless-steel and the threads may "pick-up" during tightening – this can be mitigated by use of a thread lubricant compatible with petrol (e.g. LM-grease or engine oil)

7 Replace the filler cap, adjusting the back nut if required to give a positive clamping action.

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PARTS LIST

Fig.	Pos.	Description	PC PIT	Remark

ILLUSTRATIONS

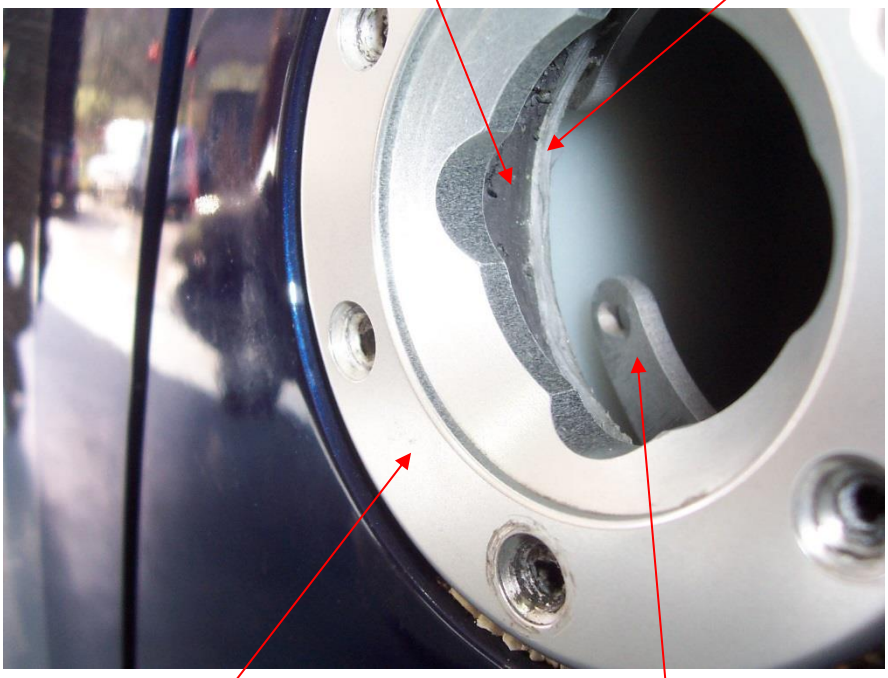

Fig. 1: Fuel filler

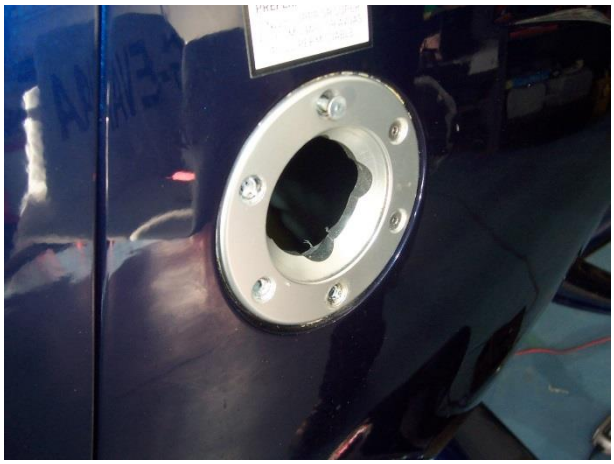

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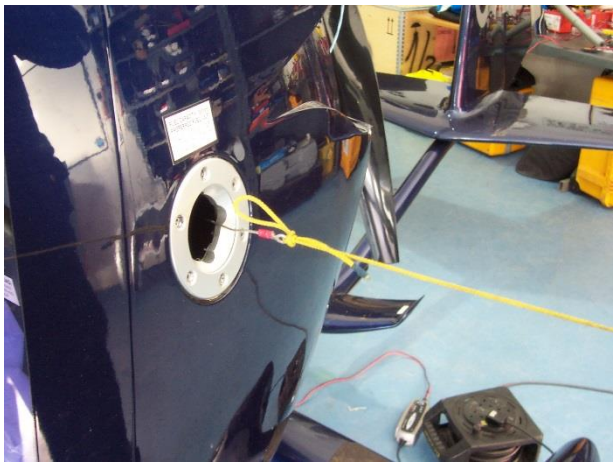
Fig. 2+3: Fuel filler and specially formed spanner



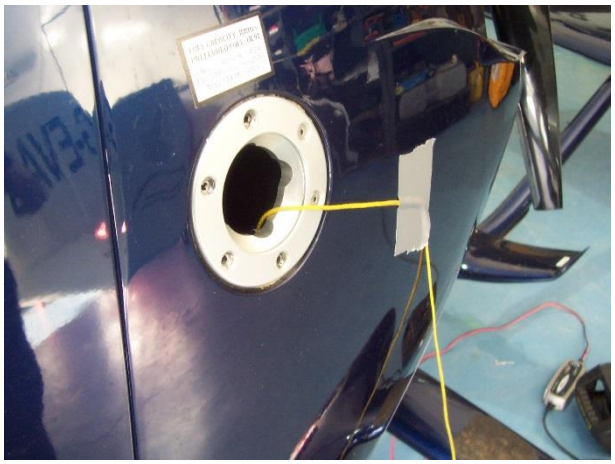


Fig. 4+5: Fuel filler and earth strap safety string

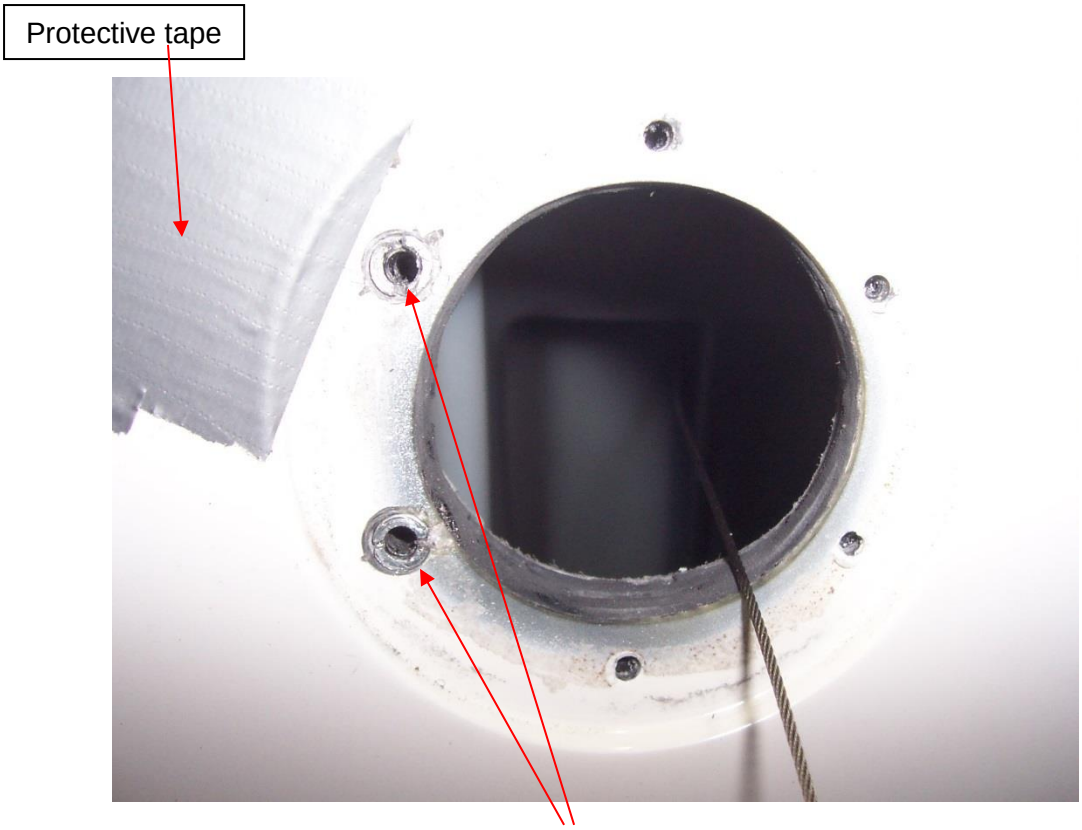


Fig. 6: Two rivnut heads slotted for drilling

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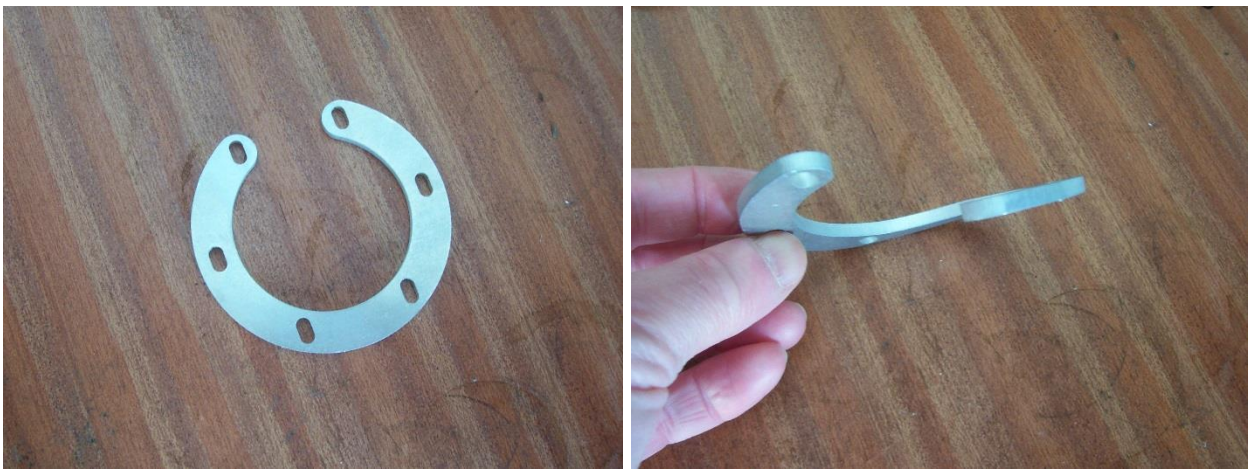

Fig. 7+8: inlay ring

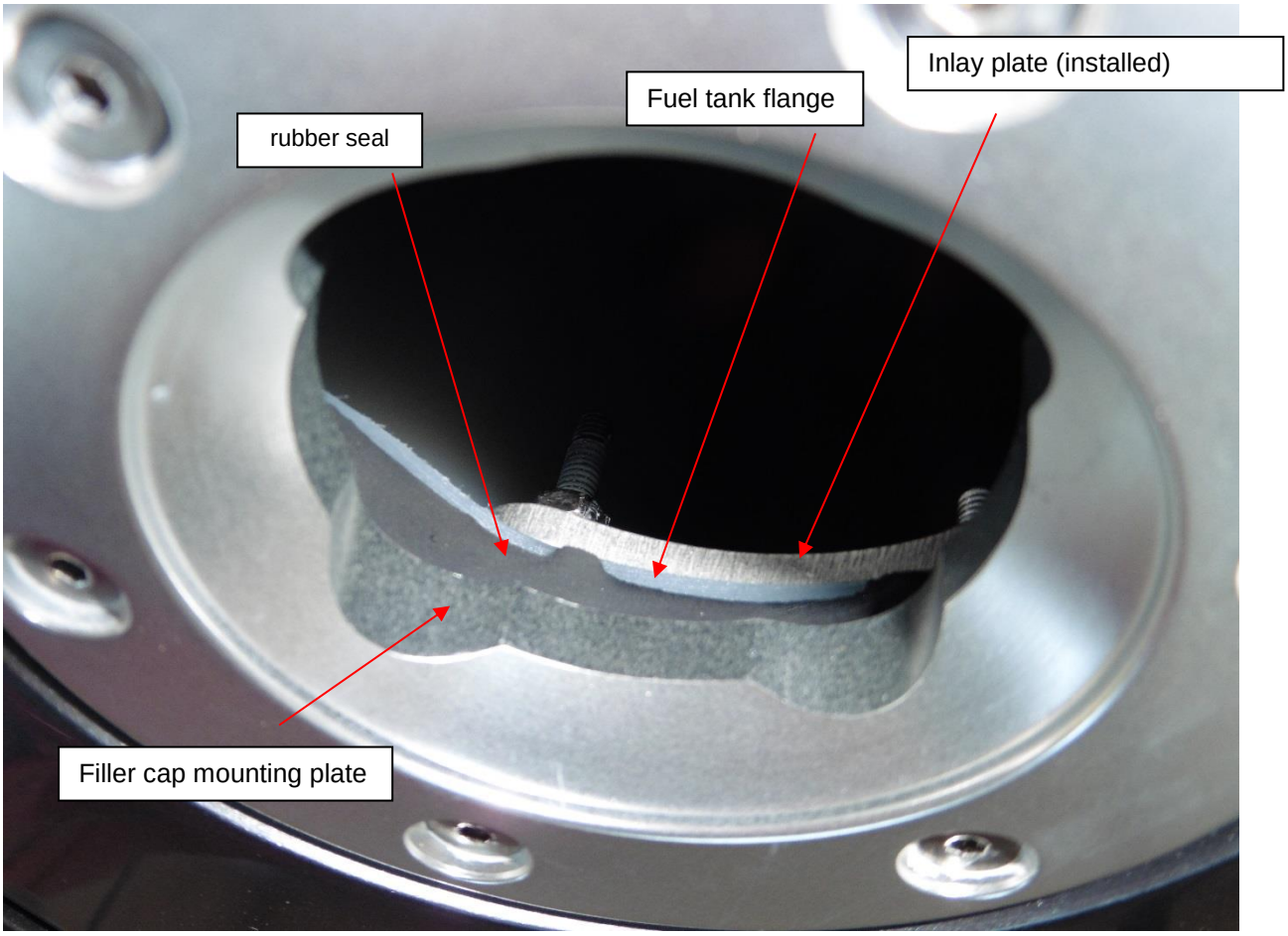

Fig. 9: fuell filler with attached inlay ring and rubber seal

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