

RotorSport UK Ltd Service Bulletin (Permit)

Title: Stainless steel after-muffler tube		
SB-114 Iss1	Related documents Modification: MC-336 CCAR No.: None	Compliance Category:
Applicability		OPTIONAL or RECOMMENDED or MANDATORY
Aircraft type & model: Calidus with 914UL only Cavalon with 914UL only	Aircraft serial Nos. affected: RSUK/CALS/028 RSUK/CALS/029 RSUK/CVLN/018 Also see note below	
The maintenance manual to be referenced is this stated or subsequent issue.		Calidus RSUK0060 Iss6 Cavalon RSUK0288 Iss5
This form is the response from RotorSport UK Ltd either against a problem found in the product in service requiring a containment or rectification action, or as service information for aircraft modification incorporation. For help, contact RotorSport on 44(0)1588 505060, or email compliance@rotorsport.org . The technical content of this document is approved under the authority of the UK CAA Design Organisation Approval Ref: DAI/9917/06		

Documentation (Service Bulletin Completion action)

- a) Entries within the aircraft logbooks, eg CAA BCAR A3-7 Authorised Person to certify that the work is completed by writing 'SB-114 Stainless-steel after-muffler tube incorporated' in the aircraft logbook white pages, and record the action in the pink pages entitled 'Aircraft Modifications'. Both entries must be signed by the CAA Authorised Person together with their CAA Authorisation number.
- b) Completion of the SB worksheet attached, This must contain a PMR statement, and a final check item that no tools or equipment have been left within the aircraft.
- c) No Type Approval change application document is required
- d) Any other Permit Maintenance Release to Service form requirements.

Document approval signatures			
Engineering Manager	CVE (as required) Not required as MC-336 approved	Chief Test Pilot (if flight performance or safety effect) Not required as no flight changes	Head of Airworthiness

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Reason and overview of the Service Bulletin (cause of problem if known)

RotorSport gyroplanes have an after-muffler suspended below the main silencer of the Rotax engine. Under MC-326 the four rivets retaining the after-muffler outer tube to the inner construction are placed at the "hot" end of the after-muffler. In a few cases high thermal load has resulted in damage to the aluminium after-muffler tube and under this service bulletin SB-114 the aluminium tube is replaced by a stainless-steel tube.

SB-114 has a "Recommended" status for those aircraft listed in "Applicability" above, but may be considered to have "Optional" status for any Calidus or Cavalon gyroplane.

Manpower estimates

Accomplishment of this Service Bulletin requires the following personnel

- (i) A3-7 Authorised engineer

Estimated man-hours to complete the task as a stand-alone item are; 1 hour

Tooling required

Hand tools only

Weight and Balance Effects

No significant effect

Manuals affected

Calidus POH RSUK0060 and Cavalon POH RSUK0287 are not affected.

Calidus AMM RSUK0061 and Cavalon AMM RSUK0288 to describe the different construction by minor amendment at next issue.

Previous Modifications that affect the SB

MC-326 introduced rivets at the hot end of the after-muffler. Prior to this the rivets were located at the "cold" end and a different clamp configuration used

Accomplishment instructions (Action required to implement this bulletin):

Effective date of this SB is 15.04.16

There is no relevant MPD or other outside body documentation to be referenced.

Instructions

Full instructions are given in Auto-Gyro Service Bulletin AG-SB-2016-04-C-EN attached as Appendix to this RSUK Service Bulletin SB-114

Material information (Parts required to be made to implement this service bulletin):

No parts manufactured during embodiment

List of components (with purchasable part nos)

See Appendix

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Interchangeability

After-mufflers with aluminium tubes (which continue to be available for aircraft with 912ULS engine) must not be used to replace stainless-steel tubes (which are now used with 914UL engine)

Parts disposition

- a) Disposal requirements – Normal waste
- b) Environmental hazards of parts containing hazardous materials –N/A
- c) Scrap requirements (eg mutilate scrapped items beyond use) – N/A

AG-SB-2016-04-C-EN – Replacement Muffler Tube Cavalon and Calidus

Category C

EFFECTIVE DATE

17.05.2016

SUPERSEDES/REPLACES

N/A (initial issue)

APPLICABILITY

This Service Bulletin is applicable for all Cavalon and Calidus, engine type 914 UL, where the rivets are fitted at the hot end of the mufflers.

COMPLIANCE

To be performed with the next maintenance or at latest within the next 10 operating hours.

BACKGROUND

In few cases, high thermal load caused damage to the aluminium muffler tube.

RISK OF NEGLECT

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

- Vibration of the stick
- Loss of related warranty.

SCOPE OF WORK

- Replacement of the aluminium muffler tube with the stainless and heat-resistant steel muffler tube.

AFFECTED AREAS

N/A

SPECIAL TOOLS & CONSUMABLE MATERIALS

N/A

PARTS

78-20-00-S-42441 (L1) Conversion Kit muffler shell I

71-00-00-S-33478 (L1) Replacement kit wool aftersilencer

LABOR AND REQUIREMENTS

To accomplish 1 h

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

SUPPORT POLICY

Parts are free of charge

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 **WARNINGS**, **CAUTIONs** and **NOTEs** 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

- 15 Fix the bottom cowling according to chapter 52-00-00 4-1. Make sure that the pipe of muffler tube is placed in the middle opening (surrounding 15 mm). If necessary, adjust the position of the muffler tube (Fig.7).
- 16 Remove the bottom cowling and tighten the two hose clamps and hinge pin clamp.
- 17 Secure the screws of hose clamps with locking wire (Fig.8).
- 18 Install the cowling according to chapter 52-00-00 4-1.

PARTS LIST

Fig.	Pos.	Description	PC PIT	Remark
		Conversion Kit Overflow muffler shell	L1 78-20-00-S-42441	
		Replacement kit wool aftersilencer	L1 71-00-00-S-33478	

ILLUSTRATIONS

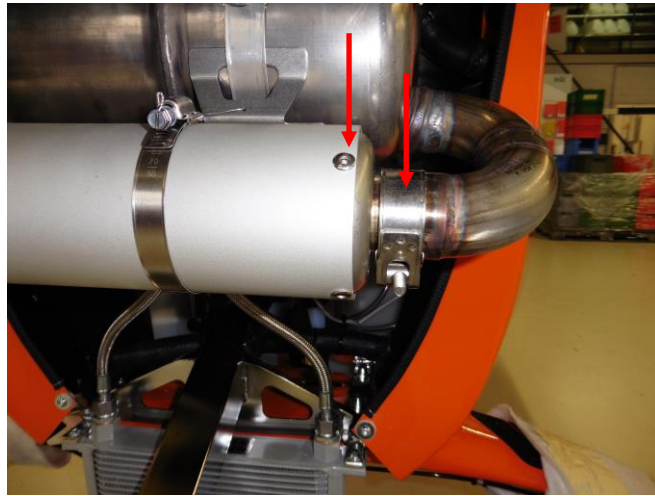


Fig.1 Rivets and hinge pin clamp

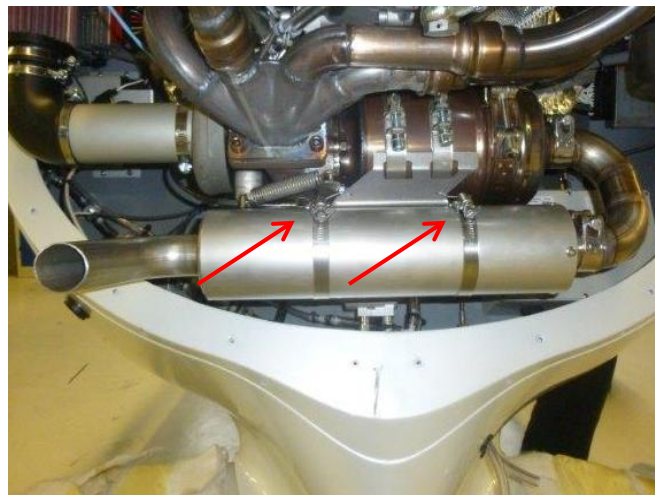


Fig.2: Hose clamps

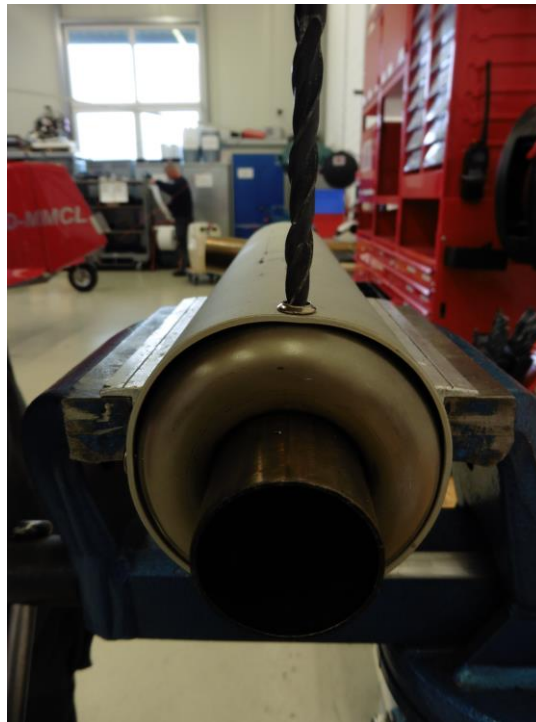


Fig.3: Drill out the rivet pin

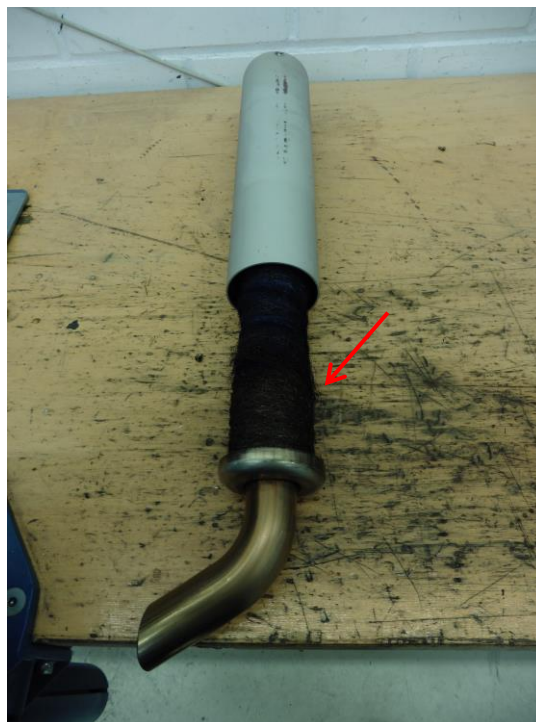


Fig.4: Wool

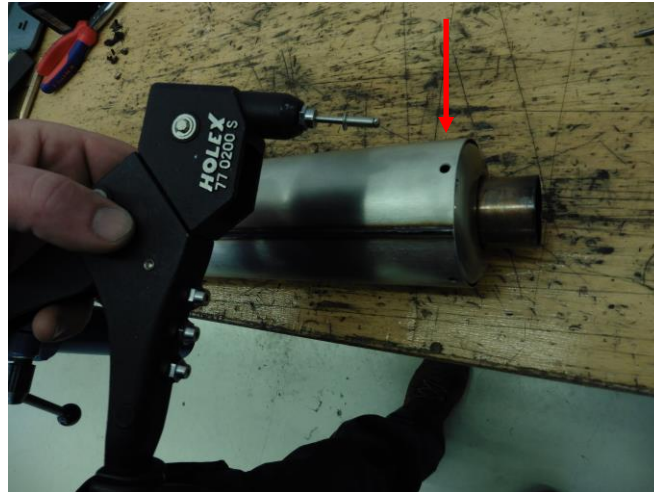


Fig.5: Riveting of steel tube

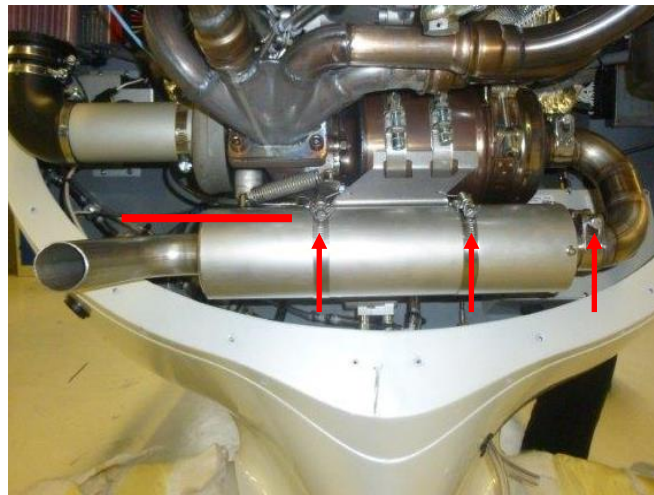


Fig.6: Installation of hose clamps and hinge pin clamp



Fig.7: Position of the muffler tube

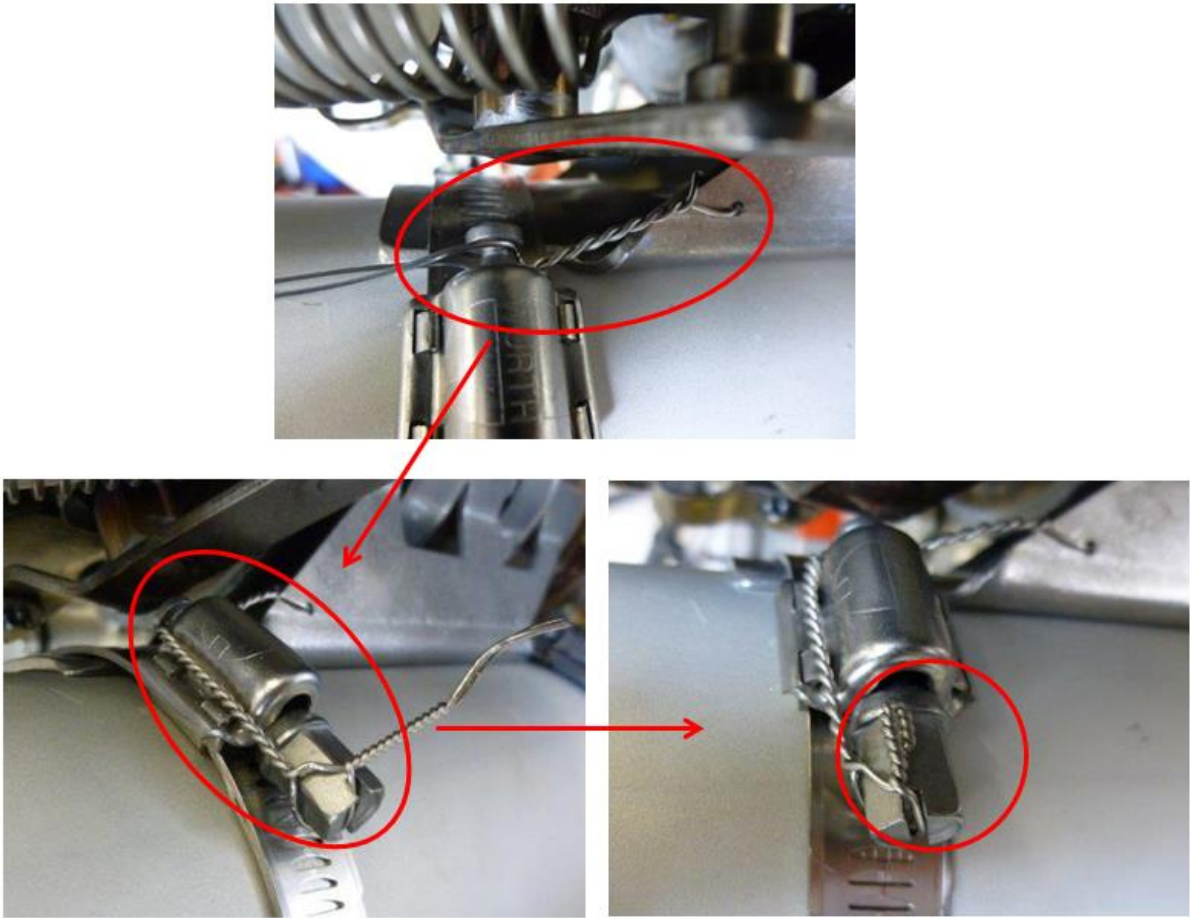


Fig.8: Installation of locking wire

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Service Bulletin implementation Worksheet

Aircraft type:	Serial no:	G-
Worksheet completed by:		Document ref: SB-114 Iss 1
Worksheet cross-checked by (if applicable):		

Purpose – record service bulletin implementation actions taken to inspect aircraft and return to service.

Maintenance manual referred-to and issue level:	
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Note: attach SB sheets to this document

Task	Notes	Eng'r check/date	Inspector check/date
Remove after-muffler assembly			
Remove aluminium tube, check no secondary damage to aftermuffler construction			
Check status of steel wool	Replace if needed		
Fit and rivet stainless-steel tube in place			
Reinstall after-muffler assembly			
Clamps tight			
Wirelock in place.			

Customer acceptance:

Name: Signature/date:	Aircraft hobbs meter reading: Confirm logbooks annotated:
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Permit Maintenance Release:
'The work recorded above has been completed to my satisfaction and in that respect the aircraft is considered fit for flight. I confirm that no tools, equipment or debris have been left in the aircraft'

Engineer signature and date: CAA PMR Authorisation ref :	Location where work completed
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