

RotorSport UK Ltd Service Bulletin (Permit)

Title: Replacement expansion tank MTOS		
SB-110 Iss1	Related documents Modification: MC-348 CCAR No.: None	Compliance Category:
Applicability		OPTIONAL or RECOMMENDED or MANDATORY
Aircraft type & model: MTOsport	Aircraft serial Nos. affected: RSUK/MTOS/057 RSUK/MTOS/059 RSUK/MTOS/060 RSUK/MTOS/061	
The maintenance manual to be referenced is this stated or subsequent issue.		RSUK0044 Iss: 6
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-110 MTOS coolant expansion tank 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 contains 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 modification MC-348 approved	Chief Test Pilot (if flight performance or safety effect) Not required	Head of Airworthiness

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<p><u>Reason and overview of the Service Bulletin (cause of problem if known)</u></p> <p>See text of Auto-Gyro document AG-SB-2016-01-B-EN appended</p>
<p><u>Manpower estimates</u></p> <p>Accomplishment of this Service Bulletin requires the following personnel</p> <p>(i) A3-7 Authorised engineer</p> <p>Estimated man-hours to complete the task as a stand-alone item are; 1 hour</p>
<p><u>Tooling required</u></p> <p>Hand tools only</p>
<p><u>Weight and Balance Effects</u></p> <p>No significant effect</p>
<p><u>Manuals affected</u></p> <p>POH RSUK0043 affected only by description of new installation for reference during daily inspection AMM RSUK0044 to describe the change in detail at next revision</p>
<p><u>Previous Modifications that affect the SB</u></p> <p>The composite expansion tank/overflow bottle was introduced in 2014 under MC-293</p>
<p><u>Accomplishment instructions (Action required to implement this bulletin):</u></p> <p>Effective date of this SB is 01.07.16</p> <p>There is no relevant MPD or other outside body documentation to be referenced.</p> <p><u>Instructions</u></p> <p>See text of Auto-Gyro document AG-SB-2016-01-B-EN appended</p>
<p><u>Material information (Parts required to be made to implement this service bulletin):</u></p> <p>See text of Auto-Gyro document AG-SB-2016-01-B-EN appended</p>
<p><u>List of components (with purchasable part nos)</u></p> <p>See text of Auto-Gyro document AG-SB-2016-01-B-EN appended</p>
<p><u>Interchangeability</u></p> <p>Not affected</p>
<p><u>Parts disposition</u></p> <p>a) Disposal requirements – conventional waste disposal b) Environmental hazards of parts containing hazardous materials –N/A c) Scrap requirements (e.g. mutilate scrapped items beyond use) – N/A</p>

Service Bulletin implementation Worksheet

Aircraft type: MTOsport	Serial no: RSUK/MTOS/	G-
Worksheet completed by:		Document ref: SB-110 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 all SB sheets to this document

Task	Notes	Eng'r check/date	Inspector check/date
Remove rear seat and ease fuselage fairing			
Drain coolant	Visually inspect for contamination		
Change expansion tank			
Install new hoses	Ensure no risk of movement/abrasion		
Refill coolant	Add new coolant to level described		
Refit fuselage cowling and seat			
Following safe practice test-run the engine			

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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AG-SB-2016-01-B-EN – Replacement Expansion Tank MTOsport

Category **B**

EFFECTIVE DATE

09.02.2016

SUPERSEDES/REPLACES

N/A (initial issue)

APPLICABILITY

MTOsport serial numbers from M01152 up to including M01335.

MTOsports, which are retrofitted with the water tank II (see figure 3 in chapter **Compliance Procedure**).

COMPLIANCE

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

BACKGROUND

In few cases fatigues in composite expansion tanks occurred by high thermal load. These fatigues may result in loss of engine coolant.

Furthermore, relocation of coolant system bleeder port for higher reliability.

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

- Replacement of the composite expansion tank with the aluminium tank
- Relocation of the coolant system bleeder port (only for the configuration state with one radiator at the rear of the engine).

AFFECTED AREAS

N/A

SPECIAL TOOLS & CONSUMABLE MATERIALS

88-00-00-S-30488 (L1) Loctite 542 Thread Sealant

88-00-00-S-31195 (L0) Coolant Protect Plus 1.5 ltr

PARTS

71-70-00-M-38988 (L1) Conversion Kit Overflow bottle III rea

71-70-00-M-39034 (L1) Conversion Kit Overflow bottle III rad

LABOR AND REQUIREMENTS

To accomplish 1 h

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

Contact & Info:

airworthiness@auto-gyro.com
www.auto-gyro.com

AutoGyro GmbH

Dornierstr. 14
31137 Hildesheim

SUPPORT POLICY

Parts are free of charge. Dispose the used parts in an environmentally friendly way.

REFERENCES

Manufacturer Maintenance Manual (MMM) in latest revision.

ROTAX Maintenance Manual (Heavy Maintenance) for ROTAX Engine Type 912 and 914 Series

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

Contact & Info:
airworthiness@auto-gyro.com
www.auto-gyro.com

AutoGyro GmbH
Dornierstr. 14
31137 Hildesheim

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.

Engine coolant must be drained sufficiently.

Execute procedure only in cold engine condition.

Battery must be disconnected, see 24-30-00 4-1, steps 1-2.

SPECIAL TOOLS, CONSUMABLE MATERIALS AND PARTS

SP	IMPORTANT NOTE: Procedure involves spare parts. Check parts list below for ordering details of affected components!
88-00-00-S-30488 (L1)	Loctite 542 Thread Sealant
88-00-00-S-31195 (L0)	Coolant Protect Plus 1.5 ltr

PRECAUTIONS AND SAFETY MEASURES

WARNING: Risk of severe burns and scalds! Hot engine parts! Always allow engine to cool down to ambient temperature before start any work.

WARNING: Risk of severe burns and scalds. Never open the cap of the expansion tank when the cooling system is hot. For safety sake, cover cap with a rag and open slowly. Sudden opening of the cap could provoke the escape of boiling coolant and result in scalding

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

PROCEDURES

- 1 Undo the screw of the rear seat and push the seat forward.
- 2 Remove the fastenings restraining the fuselage fairing right to get access to the expansion tank.
- 3 Disconnect coolant outlet on cylinder 2, open expansion tank and drain coolant. Collect the coolant in a suitable container.
- 4 When no further coolant comes out, reconnect the coolant outlet to cylinder 2.

Effectivity: Cooling system with two radiators in side scoops

- 5 Disconnect the hose between expansion tank and water thermostat.
- 6 Install a dummy plug to the vent. Use Loctite 542 (Fig.1).
- 7 Remove the radiator hose and install the T-connection to the highest point of the cooling system (Fig.2).

Effectivity – End

Effectivity: Cooling system with one radiator at the rear of the engine

- 8 Remove the hose between expansion tank and water thermostat. The water thermostat is the highest point (Abb.7).

Effectivity – End

- 9 Remove the hose coming from the expansion tank to the water distribution pipe.
- 10 Unscrew and remove the nuts and washers of expansion tank (Fig.3).
- 11 Unscrew and remove the screws and expansion tank (Fig.3).

- 12 Install the nipple with the copper washer and the crimp to the new expansion tank. Avoid any abrasions (Fig 4).
- 13 Install the new expansion tank with new screws, washers and nuts (Fig. 5 and 6).
- 14 Install the new hose to the expansion tank and the highest point. Fix the hose with crimp. Avoid any abrasions. Use cable ties and spacers. Fig. 2 shows the configuration state with two radiators in side scoops and Fig. 7 with one radiator at the rear of the engine.
- 15 Connect the 90 degree bow coming from the expansion tank to the water distribution pipe. Fix the hose with crimp. Avoid any abrasions. Use cable ties and spacers (Fig. 8, 9 and 10).
- 16 Do a visual inspection of the installed parts.
- 17 For coolant mixtures refer to chapter 12-40-00.
- 18 Fill the coolant up to the mark (tolerance +/- 1cm). If necessary, use a flashlight and/or mirror (Fig.11).
- 19 Install the fuselage fairing right.
- 20 Install the rear seat.
- 21 Test the engine functions according to engine manufacturers manual.

PARTS LIST

Fig.	Pos.	Description	PC PIT	Remark
		Conversion Kit Overflow bottle III rea	L1 71-70-00-M-38988	
		Conversion Kit Overflow bottle III rad	L1 71-70-00-M-39034	

ILLUSTRATIONS

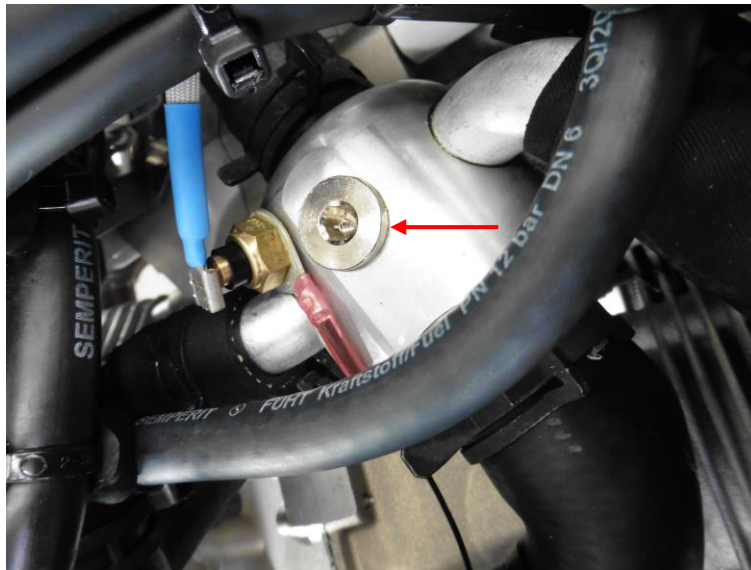


Fig.1: Dummy plug



Fig.2: Connection between expansion tank and highest point at T-connection



Fig.3: Composite expansion tank II



Fig.4: Nipple with copper washer and crimp

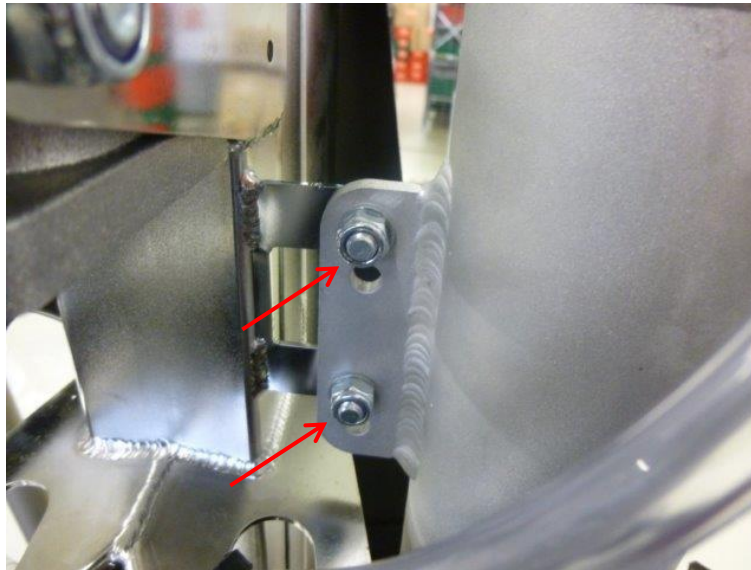


Fig.5: Installed expansion tank III

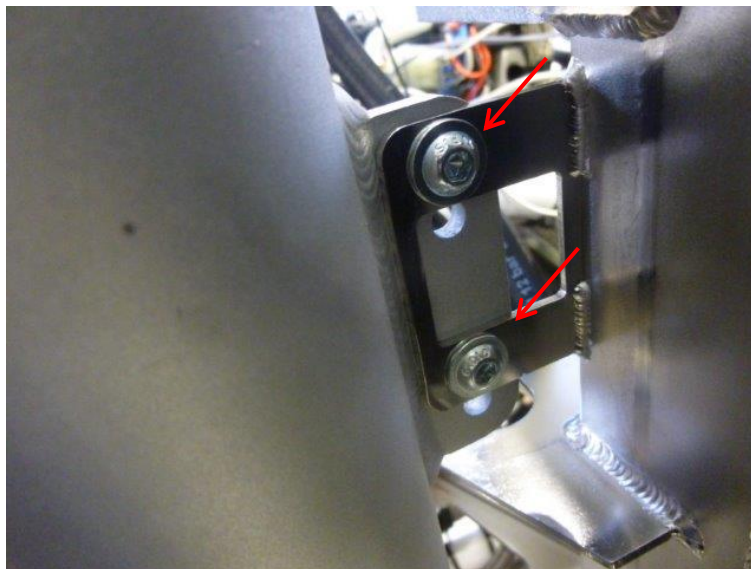


Fig.6: Installed expansion tank III

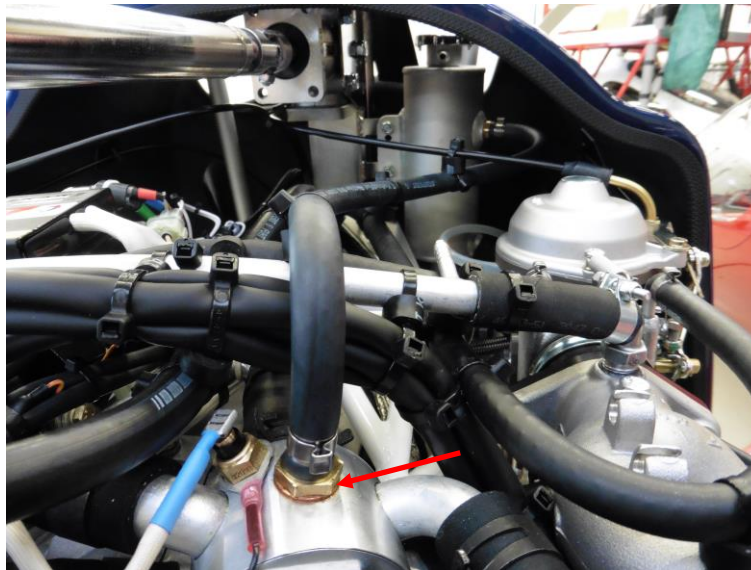


Fig.7: Connection between expansion tank and highest point



Fig.8: Connection between expansion tank and water distribution pipe with one radiator at the rear of the engine



Fig.9: Connection between expansion tank and water distribution pipe with one radiator at the rear of the engine



Fig.10: Connection between expansion tank and water distribution pipe with two radiators in side scoops

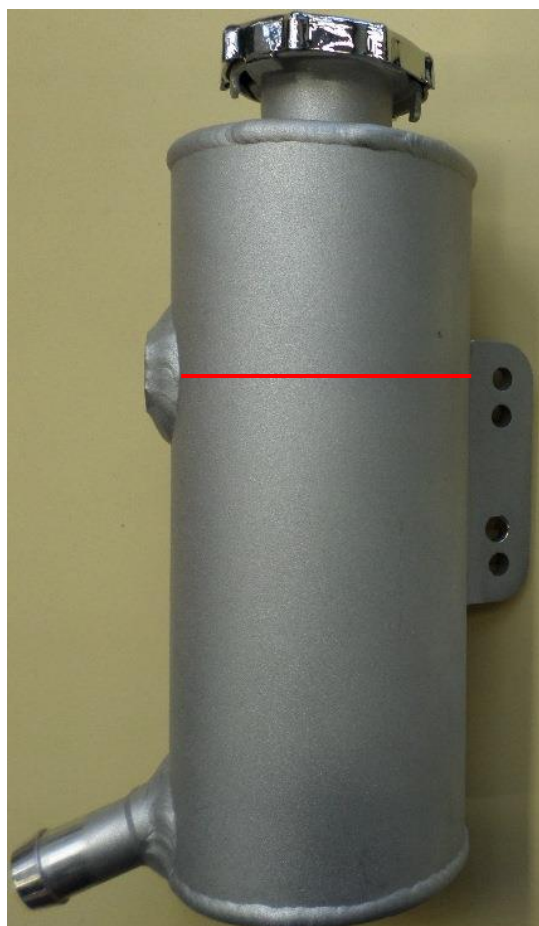


Fig.11: Filling quantity of coolant