

RotorSport UK Ltd Service Bulletin (Permit)

Title: RSII rotor interchange		
SB-116 Iss1	Related documents Modification: MC-175, MC-328 CCAR No.: None	Compliance Category: OPTIONAL or RECOMMENDED or MANDATORY
Applicability		
Aircraft type & model: MT-03 MTOsport Calidus Cavalon	Aircraft serial Nos. affected: RSUK/MT03/any RSUK/MTOS/any RSUK/CALS/any RSUK/CVLN/any	
The maintenance manual to be referenced is this stated or subsequent issue.		RSUK0012 Iss 12 (MT-03) RSUK0044 Iss 9 (MTOS) RSUK0061 Iss 7 (Calidus) RSUK0288 Iss5 (Cavalon)
<p>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.</p> <p>The technical content of this document is approved under the authority of the UK CAA Design Organisation Approval Ref: DAI/9917/06</p>		

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-116 RSII rotor interchange. incorporated*' with the new rotor serial number 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) Rotors have a safe life of 2,500 hours. When a rotor is removed within its safe life, and is to be used again, a record of the hours flown must be retained with that rotor. The remaining safe life of the rotor fitted must be stated within the aircraft logbooks/records.
- c) 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.
- d) Type approval change application document. This is required where the SB will affect the type approval limitations, eg airspeed change or MTOW change and enables the owner to request the permit change required
- e) Any other Permit Maintenance Release to Service form requirements.

Document approval signatures			
Engineering Manager	CVE (as required)	Chief Test Pilot (if flight performance or safety effect)	Head of Airworthiness
	Not required as modifications MC-175 & MC-328 approved	Not required	

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

Under this service bulletin SB-116 gyroplanes already fitted with RotorSystemII standard variant rotor (red end caps) may be fitted with RotorSystemII TOPP rotor (blue end caps). Alternatively, gyroplanes already fitted with RotorSystemII TOPP variant rotor (blue end caps) may be fitted with RotorSystemII TOPP rotor (red end caps).

Note: RotorSystemII may have been fitted under an earlier service bulletin or as original equipment when the gyroplane was first released to service, as defined below:

- MT-03 SB-040 aftermarket only
- MTOsport SB-040 aftermarket or at release to service
- Calidus SB-039 aftermarket or at release to service
- Cavalon at release to service

The aircraft log books and Permit to Fly should be examined to confirm correct aircraft status before embodying this service bulletin SB-116. Red end cap rotors or blue end cap rotors must not (and cannot) be fitted as direct replacements for the earlier rotor system (RS1)

Manpower estimates

Accomplishment of this Service Bulletin requires the following personnel

- (i) A3-7 Authorised engineer
- (ii) Second person to provide duplicate inspection signature (another A3-7 engineer or an experienced gyroplane pilot)

Estimated man-hours to complete the task as a stand-alone item are; 1/2hr

Tooling required

Hand tools only

Weight and Balance Effects

The MTOW is not affected but the CG may be affected – see further information in instructions below. **NB: There is no change in the certified max empty weight of the aircraft, so care must be taken to ensure that the additional weight does not take the aircraft over the maximum permitted empty weight.**

Manuals affected

The aircraft POH and AMM are not affected by embodiment of this SB-116 as all already refer to both MC-175 and MC-328.

Previous Modifications that affect the SB

MC-175 and MC-328 as already noted

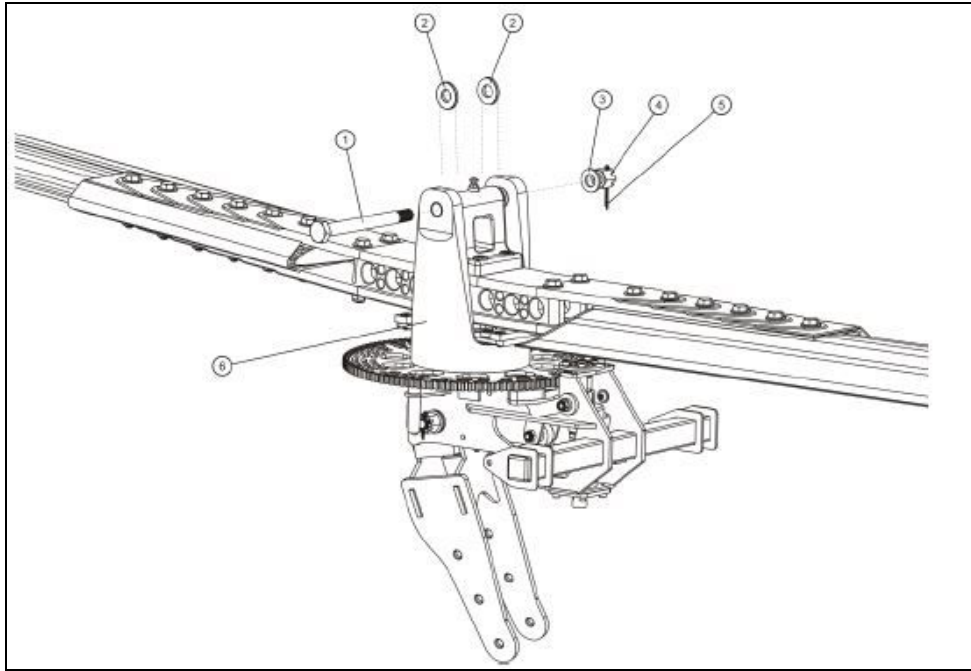
Accomplishment instructions (Action required to implement this bulletin):

Effective date of this SB is 21.06.16

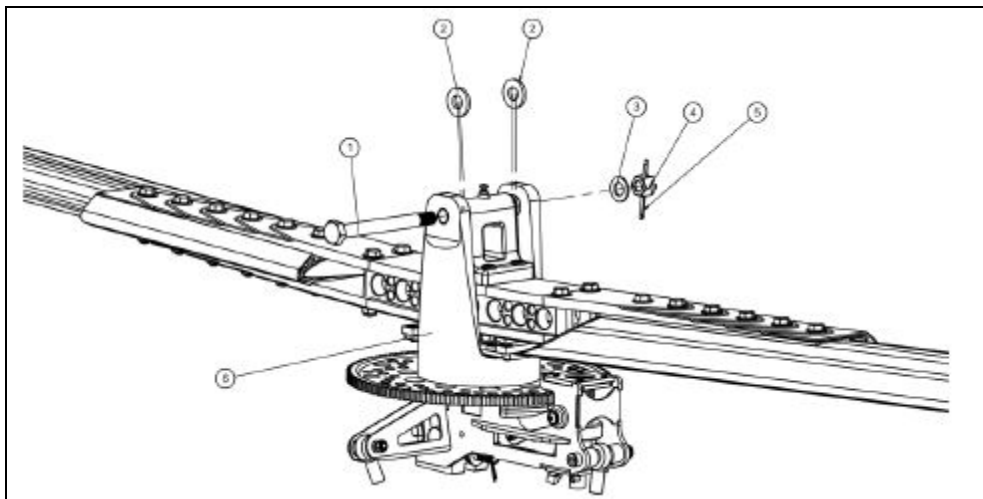
There is no relevant MPD or other outside body documentation to be referenced.

Instructions

If the gyroplane is fitted with RotorSystemII either the standard variant rotor (red end caps) or the TOPP-variant rotor (blue end caps) may be fitted. Each rotor assembly is furnished with two shim washers which are selected during initial rotor balancing (Item 2 in schematics below), and these must be retained with the correct rotor assembly. Other than this restriction the two rotor variants are mechanically interchangeable as complete assemblies. Detailed instructions for rotor removal and fitment are provided in each aircraft's POH and AMM and to avoid the risk of error in duplication these instructions are not repeated here.



RSII rotor head installation of MTOsport (MT-03 is very similar)



RSII rotor head installation of Calidus and Cavalon

However, the weight of the each rotor variant differs, so affecting the weight of the aircraft and in some cases its CG. It is therefore necessary to arrange the issue of a revised Aircraft Weighing Certificate (AWC) from RotorSport UK Ltd, and then to amend or replace the aircraft's weight placard. It may also be necessary to apply to CAA for a revised Permit to Fly (use the pro-forma appended to this bulletin). The table below provides the appropriate information.

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Aircraft type	Present RSII rotor	Intended RSII rotor	Weight change kg	New CG limits, mm
MT03 (450kg MTOW)	Standard	TOPP	+4.0	376 to 596 horizontally 819 to 972 vertically
MT03 (450kg MTOW)	TOPP	Standard	-4.0	376 to 596 horizontally 819 to 952 vertically
MT03 (500kg MTOW)	Standard	TOPP	+4.0	371 to 596 horizontally 814 to 972 vertically
MT03 (500kg MTOW)	TOPP	Standard	-4.0	371 to 596 horizontally 814 to 952 vertically
MTOS (HTC prop)	Standard	TOPP	+4.0	370 to 600 horizontally 770 to 950 vertically
MTOS (HTC prop)	TOPP	Standard	-4.0	370 to 600 horizontally 770 to 930 vertically
MTOS (Woodcomp prop)	Standard	TOPP	+4.0	343 to 600 horizontally 770 to 950 vertically
MTOS (Woodcomp prop)	TOPP	Standard	-4.0	343 to 600 horizontally 770 to 930 vertically
Calidus	Standard	TOPP	+4.0	255 to 485 horizontally 795 to 895 vertically (No change introduced)
Calidus	TOPP	Standard	-4.0	255 to 485 horizontally 795 to 895 vertically (No change introduced)
Cavalon*	Standard RAO	TOPP	+4.0	345 to 540 horizontally 750 to 940 vertically
Cavalon*	TOPP	Standard RAO	-4.0	345 to 540 horizontally 750 to 900 vertically

*Note that the Cavalon gyroplane with the RSII standard variant has black-coloured clamping profiles denoting the RAO rotor configuration. When replaced by the RSII TOPP variant conventional silver-coloured profiles are used

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

No parts manufactured during embodiment of this service bulletin SB-116

List of components (with purchasable part nos)

Standard variant 8.4m rotor BG1793 (red end caps) or TOPP variant 8.4m rotor BG8946 (blue end caps)

Interchangeability

See text above

Parts disposition

- a) Disposal requirements – return the removed rotor to RSUK for examination and/or disposal
- b) Environmental hazards of parts containing hazardous materials –N/A
- c) Scrap requirements (eg mutilate scrapped items beyond use) – N/A

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Appendix 1 to SB-116 - worksheet

Service Bulletin implementation Worksheet			
Aircraft type:	Serial no:	G-	
Worksheet completed by:		Document ref:	
Worksheet cross-checked by (if applicable):		SB-116 iss 1	
Purpose – record service bulletin implementation actions taken to inspect aircraft and return to service.			
Maintenance manual referred-to and issue level:			
Note: attach SB sheets to this document			
Task	Notes	Eng'r check/date	Inspector check/date
Original rotor removed; teeter bushings verified in good condition			
Replacement rotor fitted; confirm teeter bolt split pin formed in place			
Confirm amended weight and balance certificate issued			
Weight placard amended			
Flight test/balance satisfactory			
Record serial number of rotor blades fitted Identify variant below: <ul style="list-style-type: none"> • Standard (red end caps) • TOPP (blue end caps) 	Blade serial no: Blade serial no:		
Confirm completed F206 is inserted in the Aircraft logbook 'Repetitive Requirements'	RSII Rotor safe life is 2,500 hrs		
Customer acceptance:			
Name:		Aircraft hobbs meter reading:	
Signature/date:		Confirm logbooks annotated:	
Permit Maintenance Release:			
<i>'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'</i>			
Engineer signature and date:		Location where work completed	
CAA PMR Authorisation ref :			

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Appendix 2 to SB-116 – Permit change application form

<h2>Permit Change Application</h2>	
The purpose of this document is to provide sufficient information to the CAA to allow a change of the Permit to Fly to incorporate a specific aircraft modification or upgrade.	
Aircraft reg no G-	Aircraft serial No. RSUK/
AAN that has been incorporated: (cross out as required below)	Service Bulletin number incorporated: SB-116 Iss1 RSII rotor interchange
For MT-03 AAN29134 Addendum 5 (RSII) or 6 (TOPP)	
For MTOsport AAN29247 Addendum 2 (RSII) or 3 (TOPP)	
For Calidus AAN29266 Addendum 1 (RSII) or 3 (TOPP)	
For Cavalon AAN29345 (RSII) or Addendum 3 (TOPP)	
Owners name and address	
Daytime telephone number	
Email	
Summary of change required: (cross out as required)	
RotorSystemII standard-variant or RotorSystemII TOPP-variant fitted, as approved by AAN29134 Addendum...../ AAN29247 Addendum/AAN29266 Addendum..../AAN29345 /Addendum.....	
Documents to be included with this application: Photocopy of aircraft and/or engine logbook pages with certifying signatures from the A3-7 authorised person that confirm embodiment of the service bulletin and Permit Maintenance Release certification. Existing CAA Permit to Fly (original document, not a copy). The Certificate of Validity is not required Revised Aircraft Weighing Certificate (AWC) if applicable Application fee as specified in the CAA Scheme of Charges paragraph 6.1 (http://www.caa.co.uk/application.aspx?catid=33&pagetype=65&appid=11&mode=list&type=subcat&id=1)	
Send to: CAA Applications and Approvals Aviation House Gatwick Airport South West Sussex England RH6 0YR	