



SERVICE BULLETIN

CHANGE OF COOLANT SPECIFICATION ON ROTAX® ENGINE TYPE 912 AND 914 (SERIES)

SB-912-043
SB-914-029

MANDATORY

Repeating symbols:

- Please, pay attention to the following symbols throughout this document emphasizing particular information.
- ▲ **WARNING:** Identifies an instruction, which if not followed, may cause serious injury or even death.
- **CAUTION:** Denotes an instruction which if not followed, may severely damage the engine or could lead to suspension of warranty.
- ◆ **NOTE:** Information useful for better handling.

1) Planning information

1.1) Engines affected

- All versions of the engine type:
- 912 A all
 - 912 F all
 - 912 S all
 - 914 F all

1.2) Concurrent ASB/SB/SI and SL

- More to this Service Bulletin the following additional Service Bulletin must be observed and complied with:
- SB 912-039/ SB-914-025 "Modifications of the overflow bottle" current issue

1.3) Reason

In some instances conventional coolant (mixture ratio of 50% water and 50% antifreeze) can vaporize or boil before the maximum permissible cylinder head temperature is reached.

1.4) Subject

Change of coolant specification on ROTAX® engine type 912 (Series) and 914 (Series)

1.5) Compliance

- Within the next 100 operating hours, but at the latest by December 31, 2004, the newly specified coolant specifications are to be observed according to the following Instruction section 3 and applied.
- ▲ **WARNING:** Non-compliance with these instructions could result in engine damages, personal injuries or death.

1.6) Approval

The technical content of this document is approved under the authority of DOA Nr. MOT. JA-03.

1.7) Manpower

Engine installed in the aircraft - - - manpower time will depend on installation and thus, no estimate is available from the engine manufacturer.

1.8) Mass data

- Change of weight - - - none
- Moment of inertia - - - unaffected

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1.9) Electrical load data

No change

1.10) Software accomplishment summary

No change

1.11) References

In addition to this technical information refer to current issue of

- Operator's Manual (OM)
- Illustrated Parts Catalog (IPC)
- Maintenance Manual (MM)

1.12) Other publications affected

The following documentation must be replaced without any delay in accordance with this Service Bulletin and will become invalid.

Description	part no.	Issue	Date	Rev.	Chapter	Page
SL-912-009/914-008	n. a.		Dec. 2003	1		

The following documentations become effective with this Service Bulletin:

Description	part no.	Issue	Date	Rev.	Chapter	Page
Operator's Manual 912 Series	899370	0	1998 07 01	3		
Operator's Manual 914 Series	899641	0	1998 12 01	3		
Installation Manual 912 A	897860	0	1997 01 16	1		
Installation Manual 912 F	897796	0	1996 01 23	2		
Installation Manual 912 S	899376	0	1998 09 01	1		
Installation Manual 912 UL	897711	2	1997 03 26	1		
Installation Manual 914 F	897816	0	1996 05 10	1		

The replacement pages have to be included without delay into the respective documentation of the aircraft manufacturer.

1.13) Interchangeability of parts

Not affected

2) Material Information

2.1) Material - cost and availability

Prices and availability can be inquired about at:



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Evans Cooling Systems
www.evanscooling.com

USA, Central and South America, Australia, Asia and Canada:

*Evans Cooling Systems Inc. Sales and Warehouse Office
PO Box 434*

Parkerford, PA 19457-0434, USA

Tel.: 001 610 323 3114

Fax: 001 610 970 0286

email: customerservice@evanscooling.com

Contact Cathy or Dave

Europe, the Middle East and Africa:

RENOX S.n.c.

Via Bologna, 12

60019 Senigallia AN, Italy

Tel.: +39 071 792 7942

Fax: +39 071 791 0343

email: renox@renox.com

Contact Alex Priori

Northern Europe (The UK, Holland, Scandinavia etc)

GEARFOX UK

Charterhouse

106 Baker Street, Marylebone, London.

Tel: +44 20 7486 1970/1862

Fax: +44 20 7935 3268

email: dan.sargent@gearfox.co.uk

Contact: Dan Sargent

... or will be supplied on request by ROTAX[®] Authorized Distributors or their Service Center.

Contact your local ROTAX[®] Authorized Distributor as listed in the Operator's Manual or published on our official web-site at: www.rotax-aircraft-engines.com.

2.2) Company support information

None

2.3) Material requirement per engine

parts requirement:

Fig.no.	New part no.	Qty/engine	Description	Old part no.	Application
(1)	n.a.	as required	NPG+™ coolant liquid		cooling system

◆ NOTE: The required coolant quantity depends on the installation. In case of doubt contact your aircraft manufacturer.

2.5) Rework of parts

None

2.6) Special tooling/lubricant-/adhesives-/sealing compound - Price and availability

Price and availability will be supplied on request by ROTAX[®] Authorized Distributors or their Service Centers.

Parts requirement:

Fig.no.	part no.	Qty/engine	Description	Old part no.	Application
(1)	898490	1	warning sticker		radiator cap

3) Accomplishment / Instructions

Accomplishment

All the measures must be taken and confirmed by the following persons or facilities:

- ROTAX[®] -Airworthiness representative
- ROTAX[®] -Distributors or their Service Centers
- Persons approved by the respective Aviation Authority

▲ **WARNING:** Proceed with this work only in a non-smoking area and not close to sparks or open flames. Switch off ignition and secure engine against unintentional operation. Secure aircraft against unauthorized operation. Disconnect negative terminal of aircraft battery.

▲ **WARNING:** Risk of scalds and burns! Allow engine to cool sufficiently and use appropriate safety equipment while performing work

▲ **WARNING:** Should removal of a locking device (namely lock tabs, self-locking fasteners) be required when undergoing disassembly/assembly, always replace with a new one.

◆ **NOTE:** All work has to be performed in accordance with the relevant Maintenance Manual.

3.1) Coolant specification

The coolant specification is to be used according to the corresponding Operators Manual current issue, and according to the time schedules in section 1.5.

■ **CAUTION:** The safety-technical data of the coolant manufacturer must be observed!

3.2) Changing the coolant

(see fig. 1)

The coolant is to be replaced according to the Maintenance Manual, current issue.

■ **CAUTION:** The manufacturer's data for change/replacement, usage, and operation of the previously described coolant are to be observed. See Appendix section. 4.2.

◆ **NOTE:** On the radiator cap (3), to identify the new coolant, the warning label (2) is to be affixed so that the opening pressure data (4) is visible.

▲ **WARNING:** Water or water-containing coolant must **not** be added **in any case** to the cooling system!

- Restore aircraft to original operating configuration.
- Connect negative terminal of aircraft battery.

3.3) Test run

Conduct test run including ignition check and leakage test.

3.4) Summary

These instructions (section 3) have to be conducted in compliance with section 1.5.

Approval of translation to best knowledge and judgment - in any case the original text in the German language and the metric units (SI-system) are authoritative.

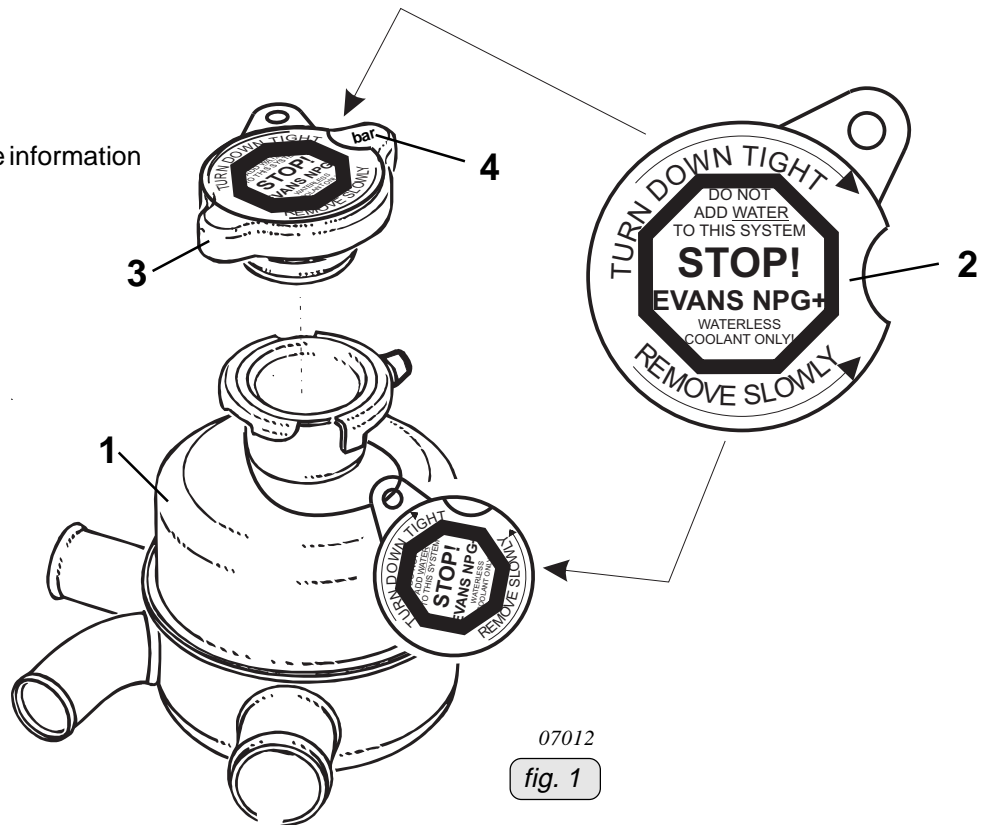
4) Appendix

4.1) Sticker

The following drawings should provide additional information: See fig. 1

- For new engine deliveries the sticker will be temporarily attached to the expansion tank.
- The sticker has to be affixed to the radiator cap in accordance to the aircraft manufacturer's instruction.

- 1 Expansion tank
- 2 Warning sticker
- 3 Radiator cap
- 4 Excess-pressure information



- ◆ NOTE: The illustrations in this document show the typical construction. They may not represent full detail or the exact shape of the parts which have the same or similar function. Exploded views are **not technical** drawings and are for reference only. For specific detail, refer to the current documents of the respective engine type.

4.2) Manufacturer Instruction

An NPG+ Instruction Manual is included in each scope of supply and also available on the official web-site of the manufacturer and includes detailed instructions about the operation and application of EVANS NPG+.

The coolant system of the ROTAX® engine type 912/914 is designed for the operation with waterless coolant and therefore has not to be modified. The drain holes /venting holes should not be plugged.

4.2.1) Warning notices for operation with EVANS NPG+

- Water or water-containing coolant must **not** be added **in any case** to the cooling system!
- 3,6 % water or less in the system is acceptable and may be checked with a brix scale refractometer.
- Residual water, if present, will vent rapidly as steam. This could further lead, by too low cooling level, in a complete failure of the cooling system. Check coolant level in expansion tank (1) as per daily checks (see section 10.3.1 Operators Manual) or equivalent electronic warning system.
- If EVANS NPG+ coolant is not locally available, temporarily top off the system with propylene glycol antifreeze and be sure not to add water. Within 15 days the temporary coolant should be completely drained and the system refilled with EVANS NPG+ coolant.

- ◆ CAUTION: The above mentioned warning instructions are excerpts of the manufacturer published Instruction Manual, in any case the original text in the Instruction Manual is authoritative.