

SERVICE INSTRUCTION

Maintenance Awareness Information - Excessive use of silicone heat compound (spark plugs) for ROTAX® 912, 914, 912 i, 915 i and 916 i (Series) Aircraft Engines

ATA System: 74-20-00 Spark plug

1) Planning information

To obtain satisfactory results, procedures specified in this publication must be accomplished with accepted methods in accordance with prevailing legal regulations.

BRP-Rotax GmbH & Co KG cannot accept any responsibility for the quality of work performed in accomplishing the requirements of this publication.

1.1) Applicability

All versions of certified ROTAX® engine types:

Engine type (Series)	Serial number
912 A	All
912 F	All
912 S	All
912 iSc Sport	All
914 F	All
915 iSc A	All
915 iSc C24	All
916 iSc A	All
916 iSc C24	All
916 iSc B	All

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All versions of ASTM compliant ROTAX® engine types:

Engine type (Series)	Serial number
912 UL	All
912 ULS	All
912 iS Sport	All
914 UL	All
915 iS A	All
915 iS C24	All
916 iS A	All
916 iS C24	All

1.2) Concurrent ASB/SB/SI and SL

In addition to this Service Instruction the following documents must be observed:

- SI-912-027, SI-914-028, SI-912 i-013 Introduction of new spark plug part no. 297656 and spark plug connector part no. 265249 for ROTAX Engine Type 912 i, 912 and 914 (Series)
- in general all relevant Alert Service Bulletins (ASB), Service Bulletins (SB), Service Instructions (SI), Service Letters (SL), Service Instruction - Parts and Accessories (SI-PAC) with relevance to perform this maintenance, repair or overhaul task.

1.3) Reason

Field observations that are carried out as part of our obligations revealed an increased number of engine damages caused by the excessive use of silicone heat compound.

1.4) Subject

Maintenance Awareness Information - Excessive use of silicone heat compound (spark plugs) for ROTAX® 912, 914, 912 i, 915 i and 916 i (Series) Aircraft Engines.

1.5) Compliance

These maintenance instructions shall be considered at any maintenance events, retrofitting, repair and overhaul.

1.6) Approval

For certified engines the technical content of this document is approved under the authority of the DOA ref. EASA.21J.048.

For ASTM compliant engines the technical documentation is approved under the relevant processes of the effective BRP-Rotax quality management system.

Content concerning certified engine types also applies to ASTM compliant engine types.

1.7) Labor time

Estimated labor hours:

Engine installed in the aircraft - - - labor time will depend on airframe installation and therefore 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 modifications

No change.

1.11) References

In addition to this technical information refer to current issue of

- in general Illustrated Parts Catalog (IPC) and in particular:
Chapters 00-00-00 and 74-20-00.
- in general Operators Manual (OM)
- in general Installation Manual (IM)
- in general Maintenance Manual Line (MML) and in particular:
Chapter 05-20-00, Section Spark plug and
Chapter 12-20-00, Section Replacement of spark plug
- in general Maintenance Manual Heavy (MMH) and in particular:
Chapter 74-20-00

NOTE: The status of the Manuals can be determined by checking the table of amendments.
The 1st column of this table shows the revision status. Compare this number to the one
listed on the ROTAX® website:

www.flyrotax.com. Updates and current revisions can be downloaded for free.

1.12) Other Publications affected

None.

1.13) Interchangeability of parts

Not affected.

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2) Material Information

2.1) Material

Price and availability will be provided on request by ROTAX® Authorized Distributors or their independent Service Centers.

2.2) Company support information

- Any possible support by BRP-Rotax will be provided on request by ROTAX® Authorized Distributors or their independent Service Centers

2.3) Material requirement per engine

None.

2.4) Material requirement per spare part

None.

2.5) Rework of parts

None.

2.6) Special tooling/lubricants- /adhesives- /sealing compounds

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

Fig.	Description	Qty / engine	Part no.	Application
1	SILICONE HEAT COMPOUND 150G	(AR)	897186	Spark plug threads

NOTICE

If using these special tools observe the manufacturers specifications.



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Fig. 1

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3) Accomplishment/Instructions

ROTAX® reserves the right to make any amendments to existing documents, which might become necessary due to this standardization, at the time of next revision or issue.

NOTE: Before maintenance, review the entire documentation to make sure you have a complete understanding of the procedure and requirements.

Accomplish- ment

All measures must be implemented and confirmed by at least one of the following persons or organizations:

- ROTAX® - Airworthiness representatives
- ROTAX® - Authorized Distributors or their independent Service Centers
- Persons approved by the respective Aviation Authorities
- Persons with approved qualifications for the corresponding engine types. Only authorized persons (iRMT, Level Heavy Maintenance) are entitled to carry out this work
- Persons with type-specific training

NOTE: Indicates supplementary information which may be needed to fully complete or understand an instruction.



All work has to be performed in accordance with the relevant ROTAX® Instructions for Continued Airworthiness (ICA) of the respective engine type.

General

Further material on general inspection, maintenance and repair can also be found in relevant Advisory Circular AC 43.13 from FAA.

Advisory Circular

The Advisory Circular (AC) contains maintenance methods, techniques and practices.

Procedure

3.1) Illustrated Parts Catalog - related information



See current Illustrated Parts Catalog (IPC) of the respective engine type, Chapter 74-20-00.

3.2) Installation - related information



See current Installation Manual (IM) of the respective engine type.

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3.3) Operation - related information



See current Operators Manual (OM) of the respective engine type.
See also Aircraft Flight Manual (AFM) / Pilot Operating Handbook (POH).

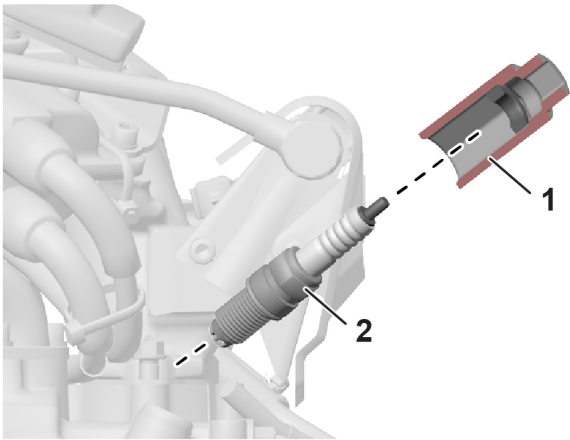
3.4) Maintenance (Line) - related information

3.4.1) Spark plug removal

See Fig. 2

Step	Procedure
1	Remove the spark plug cap from the spark plug.
2	Remove the spark plugs from the cylinder heads and store them according to cylinder and position.

- 1 Spark plug socket 18 mm
- 2 Spark plug 297656



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Fig. 2
Spark plug removal

NOTICE

Risk of damage to spark plugs!
The spark plugs must only be removed with a spark plug socket.



See current Maintenance Manual Line (MML) of the respective engine type, Chapter 12-20-00, section - Remove the spark plugs.

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3.4.2) Spark plug inspection

See Fig. 3

Step	Procedure
1	Inspect all spark plugs for mechanical damage.
2	Inspect the electrodes (1) for silicone heat compound. NOTE: Silicone heat compound must be present only on the threads.
3	Check the electrode gap. See current Maintenance Manual Line (MML) for the respective engine type, Section Inspection of spark plugs - Electrode gap.

1 Electrodes

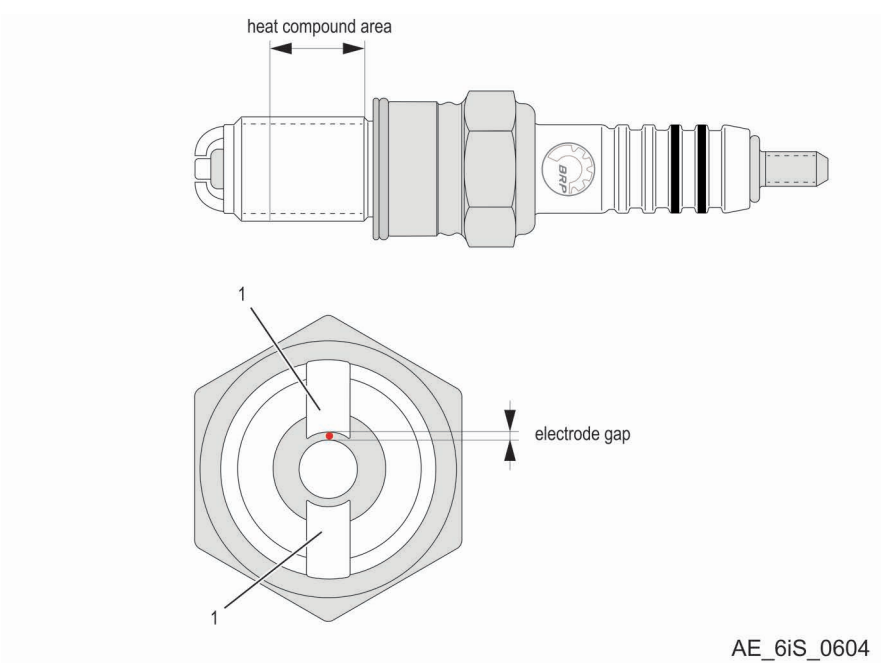


Fig. 3
Electrode gap inspection

Electrode gap	
New	Wear limit
0.8 - 0.9 mm (0.031 - 0.035 in)	1.1 mm (0.043 in)

NOTICE

Due to the curved gap between the center electrode and the ground electrodes, it is suggested to use a wire type feeler gauge for accurate gap measurement.

NOTICE

Adjustment of the spark plug gap is not allowed. If gap measurement is over permissible limit, the spark plug must be replaced.

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Step	Procedure
4	Inspect the spark plug faces. See current Maintenance Manual Line (MML) of the respective engine type, Section Inspection of spark plugs - Spark plug face.



See current Maintenance Manual Line (MML) of the respective engine type, Chapter 12-20-00, section - Inspection of spark plugs.

3.4.3)Spark plug installation

Check the electrode gap also on new spark plugs before installation.

See Fig.. 4

Step	Procedure
1	Before every installation, the spark plug thread and the spark plug seat at the cylinder head should be cleaned (e.g. to remove residue of silicone heat compound).
2	Apply small amount of silicone heat compound to spark plug thread and tighten spark plug to 16 Nm (142 in. lb) on the cold engine.

NOTICE

Take care not to contaminate the electrodes with residual silicon heat compound at the cylinder head spark plug seat.

! WARNING

Excessive silicone-based heat compound applied near spark plug electrodes in engines can lead to premature and irregular ignition of the fuel mixture, resulting in engine damage and knocking.

1 NO silicon heat compound

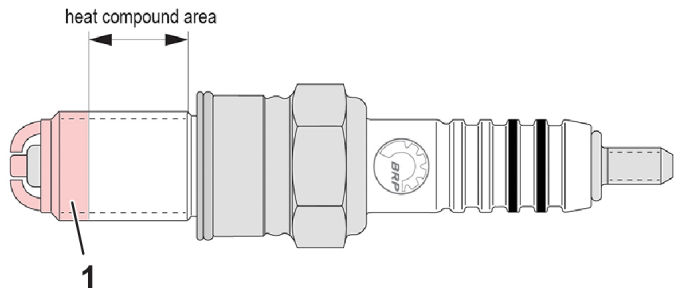


Fig. 4
Spark plug installation

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See current Maintenance Manual Line (MML) of the respective engine type, Chapter 12-20-00, section - Installation of spark plug.

3.5) Maintenance (Heavy) - related information



See current Maintenance Manual Heavy (MMH) of the respective engine type, Chapter 74-20-00.

3.6) Finishing work

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

3.7) Test run

Conduct test run.

In case of uninstalled engines test run is accomplished with the mandatory test run after installation into aircraft.



See Chapter 12-20-00 of the latest Maintenance Manual Line (MML) for the respective engine type.

3.8) Summary

These instructions (section 3) have to be followed in accordance with the deadlines specified in section 1.5.

NOTE: Work on EASA certified parts might affect the EASA Form 1 and does require appropriate documentation by authorized persons. Repairs must be entered into the engine logbook and also do apply for the EASA Form 1.

I A revision bar outside of the page margin indicates a change to text or graphic.

Translation into other languages might be performed in the course of language localization but does not lie within ROTAX® scope of responsibility.

In any case the original text in English language and the metric units are authoritative.

3.9) Inquiries

Inquiries regarding this Service Instruction should be sent to the ROTAX® Authorized Distributor of your area.

A list of all ROTAX® Authorized Distributors or their independent Service Centers is provided on <https://dealerlocator.flyrotax.com>.