ROTAX
AIRCRAFT ENGINES

SERVICE INSTRUCTION

INSPECTION OF CARBURETORS FOR ROTAX® ENGINE TYPE 912 AND 914 (SERIES) AND 2-STROKE UL AIRCRAFT ENGINES

SI-912-021
SI-914-023
SI-2ST-009

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.

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

1) Planning information

1.1) Engine affected

All versions of the engine type:
- 912 (Series)
- 914 (Series)
- all 2-stroke UL-engines

1.2) Concurrent ASB/SB/SI and SL

In addition to this Service Instruction the following additional Service Bulletins/Service Instructions must be observed and complied with:
- SB-912-048/SB-914-033, „Replacement of pin“, current issue.
- SB-912-048UL/SB-914-033UL, „Replacement of pin“, current issue.
- SI-912-012/SI-914-014, „Routine Modifications of the Bing constant depression carburetor“, current issue.
- SI-912-016/SI-914-019, „Selection of suitable operating fluids“, current issue.
- SI-2ST-008, „Selection of suitable operating fluids“, current issue.

1.3) Reason

Additional detailed definition for inspection of carburetor chamber and floats regarding contamination and anomalies.

1.4) Subject

Inspection of carburetors for ROTAX® Engine Type 912 and 914 (Series) and 2-stroke UL aircraft engines.

1.5) Compliance

- After engine installation/initial operation/return to service of an engine.
- When engine is running rough.
- And/or at the next scheduled maintenance event of carburetor (see Maintenance Manual for engine type 912/914 Series, current isse).

▲ WARNING: Non-compliance with these instructions could result in engine damages, personal injuries or death.

1.6) Approval

The technical content is approved under the authority of DOA No. EASA.21J.048.

1.7) Manpower

Estimated man-hours:
engine installed in the aircraft - - - manpower time will depend on installation and therefore no estimate is available from the engine manufacturer.

1.8) Mass data

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

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:

- Illustrated Parts Catalog (IPC)
- Maintenance Manual (MM Line and Heavy)

◆ NOTE: The status of Manuals can be determined by checking the table of amendments of the Manual. The 1st column of this table is the revision status. Compare this number to that listed on the ROTAX WebSite: www.rotax-aircraft-engines.com. Updates and current revisions can be downloaded for free.

1.12) Other publications affected

None

1.13) Interchangeability of parts

All parts are interchangeable

2) Material Information

2.1) Material - cost and availability

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

2.2) Company support information

None

2.3) Material requirement per engine

None

2.4) Material requirement per spare part

None

2.5) Reworks of parts

None

2.6) Special tooling/lubricant-/adhesives-/sealing compound

None

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
- *Person with type-specific training (applicable only for none-certified engines)*

▲ 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 gear while performing work.

▲ WARNING: Should removal of a locking device (e.g. lock tabs, self-locking fasteners, etc.) 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) General

Several carburetors have been found with contamination (dirt, remains of rubber from fuel lines and Loctite, resin-like substance, sediments etc.) in the float chamber.

▲ WARNING: This contamination could possibly cause a partial or complete blockage of the idle or main jet or of other ducts vital for operation, leading to poor performance or stoppage of engine.

3.1.1) Possible shortcomings in the fuel system

- Dirt in the fuel system
- Missing or unsuitable fuel filter
- Clogged fuel filter
- Unsuitable fuel lines
- Dirt in fuel manifold
- Poor float chamber venting
- Insufficient flushing of the fuel system prior to initial engine operation
- Fuel pressure too low or too high
- Unsuitable fuel tanks and tank coatings
- Contaminated float chambers (e.g. corrosion caused by high water content in the fuel)

3.1.2) Fuel

Use only quality fuel as specified.

- EN 228 regular, EN 228 premium, EN 228 Super plus or AVGAS 100LL.

◆ NOTE: The exact defined minimum requirements for fuel are specified in the relevant operators manual (for the relevant engine type) and the Service Instructions SI-912-016/SI-914-019 and SI-2ST-008 „Selection of suitable operating fluids“, current issue.

3.2) Instructions

3.2.1) Inspection of float chamber

(see Figure 1)
The inspection of the float chamber must be performed on both carburetors.

▲ WARNING: Always allow the engine to cool down to ambient temperature before starting work. Otherwise you risk getting severely burned or scalded.

1. Remove drip tray (1) - if equipped.
2. Perform visual check on carburetors and its actuation.
3. Open spring clip (2) or for ROTAX 914 remove the attachment screw (3) including O-Ring (4).
4. Remove float chamber (5) including gasket (6) and both floats (7).

■ CAUTION: At the following work tasks pay special attention to cleanliness. Contamination, which may be caused during the inspection process, could lead to engine malfunction.

5. Check both floats carefully for loose particles. By its functional characteristics a float consists of a lightweight and porous plastics, which is gained by a spraying method. Damages on the surface caused by the porosity e.g. small disruptions up to max. 3 mm (0.12 in) length and/or flow spots (see figure 1 pos. 9) caused by the production process are permitted. These optical characterisicts e.g. open pore, do not cause the floats to sink or to absorb liquid.
   Due to the lightweight construction the floats need special care in handling and inspection. The surface may only be cleaned for inspection. Do not remove or abrade particles with a tool or even with the finger nail.
   Material overlaps and imperfections (see Figure 1 pos. 8), which do not have sufficient connection to the float, are not permitted and the floats need to be replaced. Flow spots caused in the production process (see Figure 1 pos. 9) are permitted.

■ CAUTION: If the floats show material overlaps or loose particles the carburetors need to be removed, disassembled, cleaned, checked, re-assembled and and installed again.

6. Check float chamber for contamination.

■ CAUTION: In case of contaminations of the float chambers first the cause must be found and the relevant measures need to be taken. Possibly the whole fuel system including carburetors needs to be cleaned and checked.

7. If no contamination can be found, replace the gasket (6) on the float chamber. For ROTAX 914 replace also O-Ring (4).
8. Install float chamber (5) including gasket (6) and both floats (7).
9. Close spring clip (2) or for ROTAX 914 install the attachment screw (3) including O-Ring (4). Tightening torque of the attachment screw is 5.5 Nm (48.7 in.lb).
10. Install drip tray (1) - if equipped.

- 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 accordance with compliance in section 1.5.

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

4) Appendix

the following drawings should convey additional information:

◆ NOTE: The figure shows a common installation of the carburetor in a 912 Series engine type.

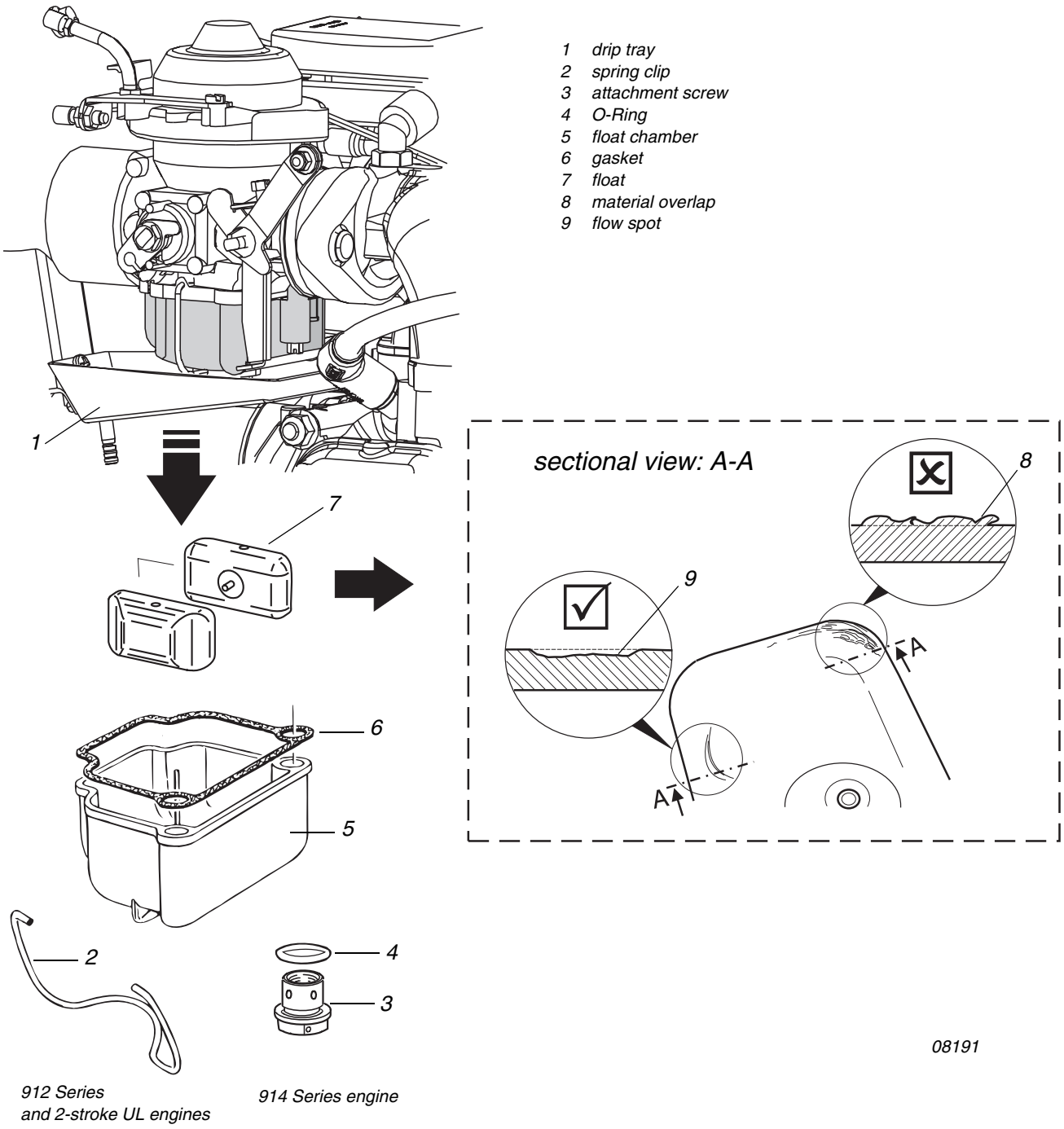

Fig. 1

Carburetor

◆ 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.