

SERVICE BULLETIN

EXTENSION OF TIME BETWEEN OVERHAULS (TBO) FOR ROTAX® ENGINE TYPE 912 (SERIES) SB-912-004UL R2

OPTIONAL

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

- a) Extension of TBO is already valid for engine type 912 UL (Series) from 600 h to 1200 h or from 10 years to 15 years period of operation for all engines of type:
 - 912 UL from S/N 4,152.667 to S/N 4,404.717
- b) For all engine S/N lower than a TBO extension according to the SB-912-005UL can be effected.

1.2) Concurrent ASB/SB/SI and SL

- In addition to this Service Bulletin the following additional Service Bulletins must be observed and complied with:
- SB-912-005UL, "Special inspection to increase the TBO for engine", current issue.

1.3) Reason

A program for extending the period of operation was carried out in agreement with the type Certificate Authority Austro Control GmbH (ACG). The TBO (engines concerned see section 1.1) can be extended on account of the positive results of the examined engines.

1.4) Subject

Extension of time between overhauls (TBO) for ROTAX® Engine Type 912 (Series).

1.5) Compliance

At release of this Service Bulletin.

1.6) Approval

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

1.7) Manpower

none

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:

- Operators Manual (OM)
- all relevant Service Bulletins (SB)
- Maintenance Manual (MM)

◆ 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

not affected

1.13) Interchangeability of parts

not affected

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

- Shipping cost, down time, loss of income, telephone costs etc. or cost of conversion to other engine versions or additional work, as for instance simultaneous engine overhaul is not covered in this scope and will not be borne or reimbursed by ROTAX®.

2.3) Material requirement per engine

Parts requirement:

Depending on the engine modification state (see chapter. 3)

2.4) Material requirement per spare part

none

2.5) Reworks of parts

none

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

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

parts requirement:

- according relevant Maintenance Manual.

■ CAUTION: When using special tools observe the manufacturer's specifications.

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 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

A program for extending the period of operation (extension of the TBO) for engines from a certain manufacturing period and onward has been introduced. For engines which have already been accepted into this program, see section 1.1a) and b).

However, engines not listed in section 1.1a) can increase the TBO according to the following instructions. The following list gives an overview of the current engine TBO status at the time of delivery and the associated SB's that, if complete with, can allow. TBO's of 1200 h to be reached accordingly.

Engine Type description	engines affected engine S/N	TBO Time Between Overhaul	deliverable SB for extensions of the TBO ⁽¹⁾
912 UL			
912 UL	from 3,792.501 up to and incl. 4,152.666	600 h or 10 years, whichever comes first	SB-912-004UL (600 h to 1200 h)

Table 1:

⁽¹⁾ An extension of the TBO is possible and regulated by the Service Bulletin (SB) complied with for the respective engine type. Respective engine SB's that have already been complied with should be verified by the technical records such as the engine log book and/or the release certificate.

3.2) Extension of the TBO

An extension of the TBO for applicable is basically possible according to table 1. A necessary prerequisite would be the implementation of all relevant Service Bulletins or Service Instructions. See section 1.2.

■ **CAUTION:** An engine may be affected again by a previous modification. Retrieve the necessary information from the respective maintenance documents or the engine log book.

The SB's or SI's to be performed are assigned to the respective engine S/N ranges. All SB's or SI's need to be carried out in ascending order.

◆ **NOTE:** You need to keep the correct sequence and order to attain an extension of the TBO according to the respective engine types (600 h to 1000 h, 1000 h to 1200 h, 1200 h to 1500 h and 1500 h to 2000 h).

3.3) Check of valve spring tension

See Fig. 1

3.3.1 Disassembly

1. Remove allen screw (1) M6x30 and washer (2) from valve cover and take off cover.
2. Observe O-rings (3) and (4).

3.3.2 Measuring method

1. Set cylinder 1 to ignition T.D.C.
2. Fit dial gauge (5) to indicate any movement of valve spring retainer (6).
3. Fit test lever (7) part no. 877690 in hollow rocker arm shaft (8) and determine the spring tension on both valves by utilizing a spring balance.
4. Read value on the balance between 0,2 to 0,3 mm (.008 to .012 in.) indication on dial gauge.

■ CAUTION: The value shown on the spring balance must not be below 35 N (26 ft.lb). Valve spring with lower tension must be renewed.

◆ NOTE: Read at first try, with force steadily rising, otherwise action of hydraulic tappet will falsify reading. After a misreading wait until valve is closed again completely. Valve closing can be quickened if necessary, by applying pressure to push rod side of rocker arm with the aid of the test lever.

5. Check valve spring on all 4 cylinders.

3.3.3 Assembly

1. Clean sealing face.
2. Place both O-rings (3,4) on valve cover.
3. Attach cover with allen screw (1) M6x30 and washer (2). Tightening torque 10 Nm (90 in.lb).

3.4) Check of float needle valve and float

Check of float needle valve and float according to current Heavy Maintenance 912/914 Series.

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

3.5) Test run

Conduct test run including ignition check and leakage test.

3.6) Summary

These instructions (section 3) have to be conducted in accordance with compliance in section 1.5. The execution of the Service Bulletin must be confirmed in the logbook.

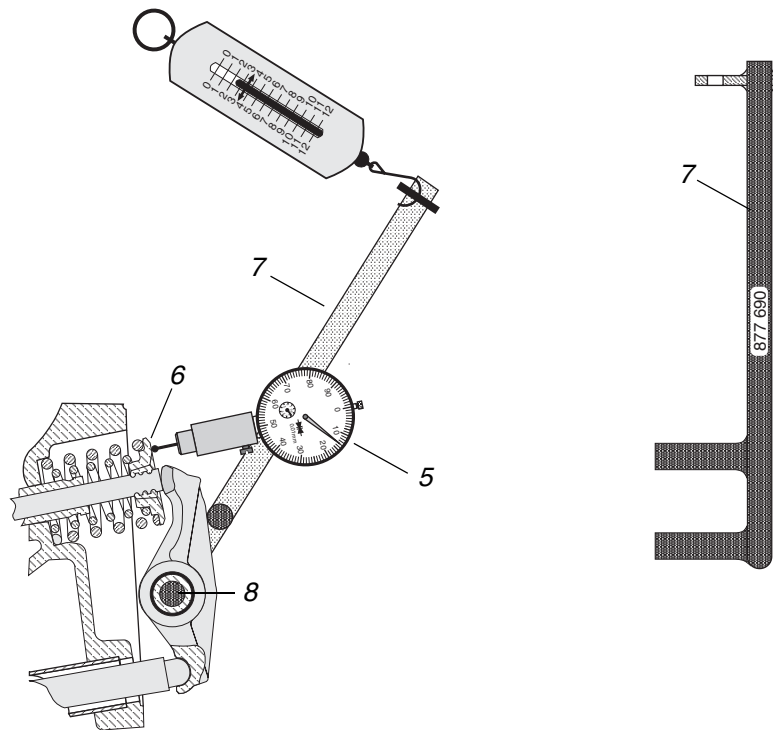
▲ WARNING: Non-compliance with these instructions/recommendations/could result in engine damage, personal injury or death!

4) Appendix

the following drawings should convey additional information:



- 1 allen screw M6X30
- 2 washer 6,0
- 3 O-Ring 6,4x1,8
- 4 O-Ring 105,2x2,5
- 5 dial gauge
- 6 spring retainer
- 7 test lever
- 8 rocker arm shaft



00312,00062,00063

Fig. 1

Check of valve spring tension

- ◆ 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 **no technical drawings** and are for reference only. For specific detail, refer to the current documents of the respective engine type.