

# SERVICE INSTRUCTION

## OPTIMIZING OF PISTON RING POSITION FOR ROTAX® ENGINE TYPE 912 (SERIES) AND 914 (SERIES)

SI-912-014

SI-914-017

### **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 Series                      all
- 914 Series                        all
- 912 pre-production            all
- 914 pre-production            all

##### 1.2) Concurrent ASB/SB/SI and SL

none

##### 1.3) Reason

Because of our ongoing commitment to product quality and innovation, piston ring end gap positions were newly defined.

##### 1.4) Subject

Optimising of piston ring position for ROTAX® engine type 912 and 914 (Series).

##### 1.5) Compliance

- During maintenance work on the piston or at the time of overhaul.

▲ **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

Estimated man-hours:

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

##### 1.9) Electrical load data

no change

d03256

**1.10) Software accomplishment summary**

no change

**1.11) References**

In addition to this technical information refer to current issue of

- Maintenance Manual (MM)
- Illustrated Parts Catalog (IPC)

**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<sup>®</sup> Authorized Distributors or their Service Centers.

**2.2) Company support information**

none

**2.3) Material requirement per engine**

none

**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<sup>®</sup> Authorized Distributors or their Service Centers.

Parts requirement:

<u>Fig.no.</u>	<u>part no.</u>	<u>Qty/engine</u>	<u>Description</u>	<u>Old part no.</u>	<u>Application</u>
(1)	876967/876978	1	piston ring spanner	n.a.	fitting of cylinder

### 3) Accomplishment / Instructions

#### Accomplishment

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

- ROTAX<sup>®</sup> -Airworthiness representative
- ROTAX<sup>®</sup> -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) Fitting of pistons

see relevant Maintenance Manual

#### 3.2) Fitting of cylinder

(see fig. 1 and 2)

Place o-ring 87x2 on cylinder base and lubricate cylinder barrel with motor oil.

◆ **NOTE:** Cylinder with countersink have an o-ring 7x2 for dampening of the two thru-studs. See section 5 of the IPC for O-Ring placement and watch for the countersink on the cylinder base.

■ **CAUTION:** To avoid ring breakage, use proper piston ring spanner and take care that the angles of rings (2) and (3) do not exceed the indicated values.

Pay attention to position of piston ring gaps (4). The gap of the first piston ring (1) should be in the middle of the lower piston skirt. The ring end gap of the second piston ring (2) and the gap of the oil scraper ring (3) should be displaced between 25° and max. 30° from the middle of the upper piston skirt (see fig. 2).

■ **CAUTION:** The ring gap should never be in the area of the piston pin bore.

■ **CAUTION:** Double check whether piston circlips are properly installed.

Lubricate piston, compress rings with piston ring spanner and fit the coordinated cylinder with care. Repeat the same procedure with the other cylinders.

- 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

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

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

The following drawings should provide additional information:

Fig. 1

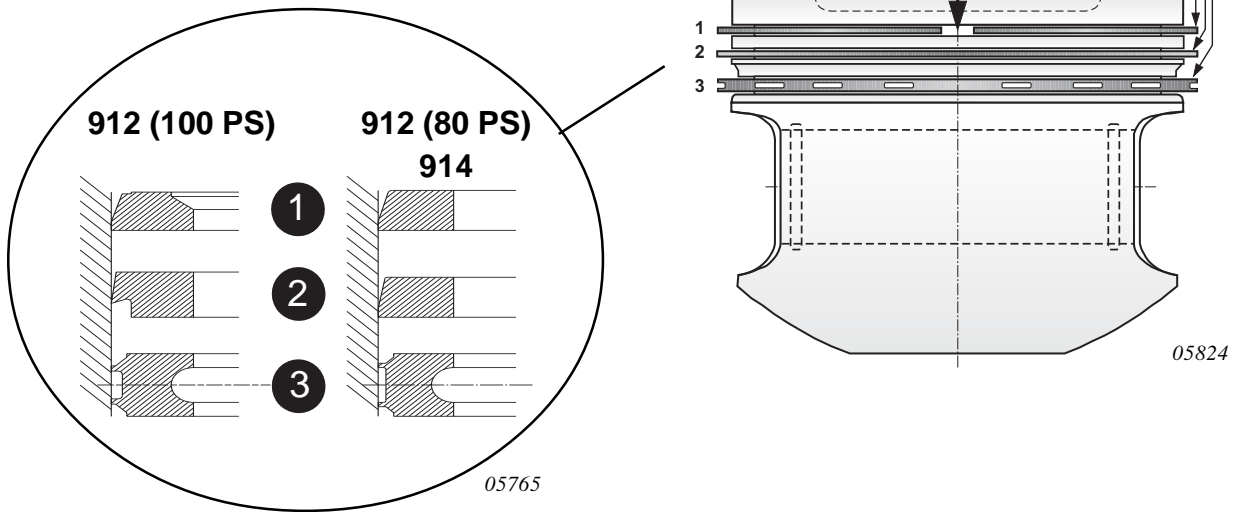
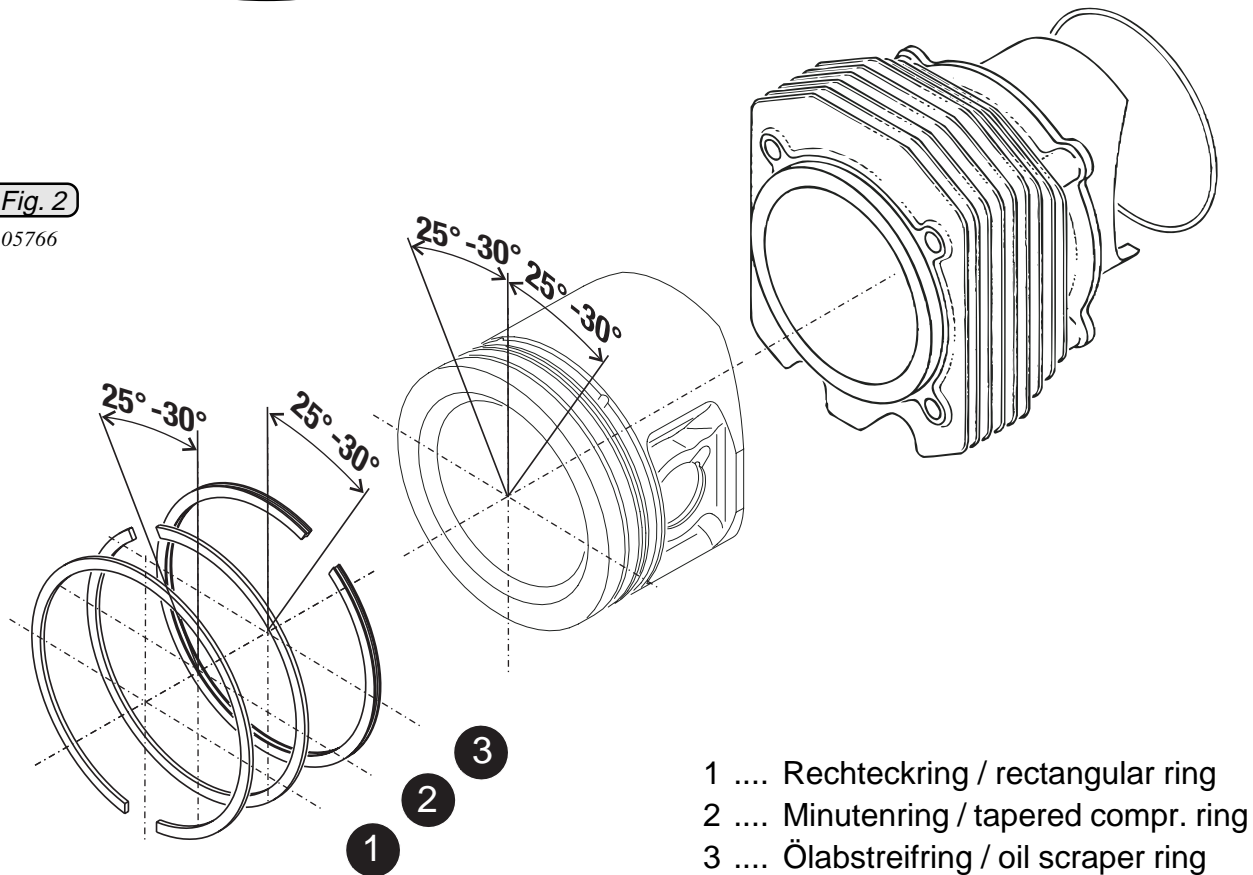


Fig. 2

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◆ 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.