

# SERVICE BULLETIN

## Replacement of oil pump housing for ROTAX® Engine Type 915 i A and 915 i B (Series)

ATA System: 79-20-00 Oil pump assy.

**MANDATORY**

### 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 ROTAX® engine types:

Engine type	Serial number
915 iSc A	from S/N 9127301 up to S/N 9127316 inclusive
915 iSc B	from S/N 9122510 up to S/N 9122522 inclusive

All oil pump housings with part no. 812192 which are stocked as a spare part are also affected and need replacement by part no. 812193.

NOTE: Engine with S/N higher than the range listed above, have new oil pump housing installed during serial production.

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

In addition to this Service Bulletin the following Service Instruction must be observed and complied with:

- Service Instruction-SI-915 i-003, "Purging of lubrication system", current issue

#### 1.3) Reason

Field observation has shown that in isolated cases strong smoke emission after longer standstill time might occur. This might be caused by seepage of oil from the oil tank into the turbocharger oil sump due to insufficient sealing. The new housing contains an additional oil pump shaft seal to avoid this effect. There is no further implication on engine behavior and/or performance.

#### 1.4) Subject

Replacement of oil pump housing for ROTAX® Engine Type 915 i A and 915 i B (Series).

#### 1.5) Compliance

- Immediately, on undelivered engines / spare parts
- Before the initial installation of engine and/or spare part, but at the latest by 31. December 2019, the "Replacement of oil pump housing" must be conducted according to the following instructions in section 3
- Carry out this replacement on the engines listed in section 1.1, according to the instructions in section 3 at the next ROTAX® scheduled maintenance event or within the next 100 hours of

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operation, but at the latest after 365 days (from the date of the initial issue of this Service Bulletin)

- At strong smoke emission due to excess oil burning within the muffler (and/or turbo) after longer standstill time carry out this replacement in accordance to this Service Bulletin before the next flight

## WARNING

**Non-compliance with these instructions could result in engine damage, personal injuries or death.**

### 1.6) Approval

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

### 1.7) Labor time and credit

A labor credit will be provided for work performed by a technician with current applicable iRMT rating.

Work performed	iRMT rating required	Labor credit
Disassembly, replacement and re-assembly as per Chapter 3.	iRMT Maintenance Heavy	1.5 hour

To apply for labor credit, contact your ROTAX® Authorized Distributor or their independent Service Centers.

### 1.8) Mass data

Change of weight - - - none.

Moment of inertia - - - unaffected.

### 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

- Illustrated Parts Catalog (IPC)
- Installation Manual (IM)
- Maintenance Manual Line (Line)
- Maintenance Manual Heavy (MMH)

NOTE: The status of the Manuals can be determined by checking the table of amendments. The 1<sup>st</sup> column of this table shows the revision status. Compare this number to that listed on the ROTAX website: [www.flyrotax.com](http://www.flyrotax.com). Updates and current revisions can be downloaded for free.

### 1.12) Other Publications affected

None.

### 1.13) Interchangeability of parts

None.

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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

- BRP-Rotax will support this exchange of oil pump housing. Any information about this support by BRP-Rotax will be provided on request by ROTAX® Authorized Distributors or their independent Service Centers
- Exchanged parts must be returned FCA (Free CArrier) to ROTAX® Authorized Distributors or their independent Service Centers
- Shipping costs, downtime costs, loss of income, telephone costs etc. or costs of conversion to other engine versions or additional work, as for instance simultaneous engine overhauls are not covered in this scope and will not be borne or reimbursed by ROTAX®

### 2.3) Material requirement and credit per engine

A retrofit kit part no. 481550 for this exchange is available. It includes the following parts required for replacement of oil pump housing for 915 i A (Series) and 915 i B (Series) engines.

Fig.no.	New p/n	Qty/ engine	Description	Application
	481550	1	Oil pump housing kit packaged	
consist of:				
	812193	1	Oil pump housing	Oil pump
	430102	1	Oil seal 14x22x4	Oil pump
	241263	4	Allen screw M6x65	Oil pump
	827962	4	Washer 6.4	Oil pump
	830372	2	O-ring 63-2.5	Oil pump housing
	230150	2	Sealing ring 10x14	Oil pump
	250460	2	O-ring 11-2.7	Oil pump
	250640	1	Sealing ring 12x18	Turbocharger
	950141	2	Sealing ring 8x13	Valve housing
	950410	1	O-ring 30x2.5	Oil pump

### 2.4) Material requirement and credit per spare part

None.

### 2.5) Rework of parts

None.

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

None.

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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.

### Accomplishment

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

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

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

### Safety notice

#### WARNING

Identifies an instruction which, if not followed, may cause serious injury or even fatal injury.

#### CAUTION

Identifies an instruction which, if not followed, may cause minor or moderate injury.

#### NOTICE

Identifies an instruction which, if not followed, may severely damage the engine or could void any warranty.

#### ENVIRONMENTAL NOTE

Environmental notes give you tips on environmental protection.

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

### 3.1) Oil pump housing removal

Following steps are important, read them carefully!

#### WARNING

Danger of severe burns and scalds! Allow the engine and exhaust system to cool to ambient temperature before starting work.

#### NOTICE

Removal must be carried out according to the specifications of the current Maintenance Manual Heavy.

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See Fig. 1.

Step	Procedure
1	Depending upon the aircraft, remove cowling. Follow the instructions of the aircraft manufacturer.
2	Disconnect the turbo oil suction line from oil pump housing by loosening compression nut (1) and remove elbow (2).  NOTE: To allow clearance to rotate and remove the elbow, the turbo oil suction line may be moved by loosening compression nut at turbo oil sump (3) and removing oil line clamps (4).
3	Disconnect the oil pump return line by removing M8 banjo bolt (5) from oil pump housing and discard sealing rings.
4	Disconnect oil hoses from the airframe sided oil system on the oil pump connections.

- 1 Compression nut
- 2 Elbow
- 3 Compression nut
- 4 Clamps
- 5 Banjo bolt M10

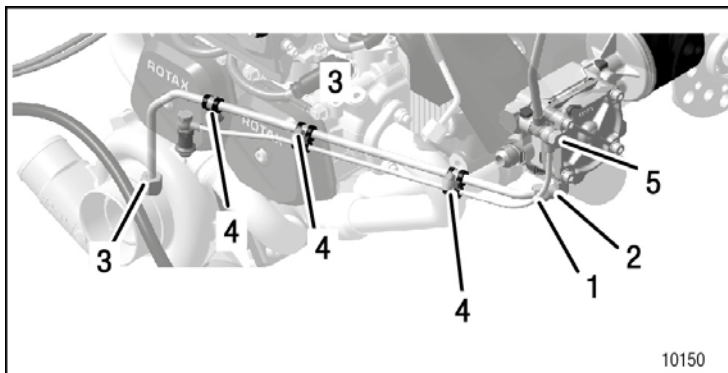


Fig. 1

See Fig. 2.

Step	Procedure
5	Remove 4 Allen screws M6x 65 (6) along with washers (7), remove complete oil pump housings assy.

- 6 Allen screw M6x65
- 7 Washer 6.4
- 8 Oil pump housings

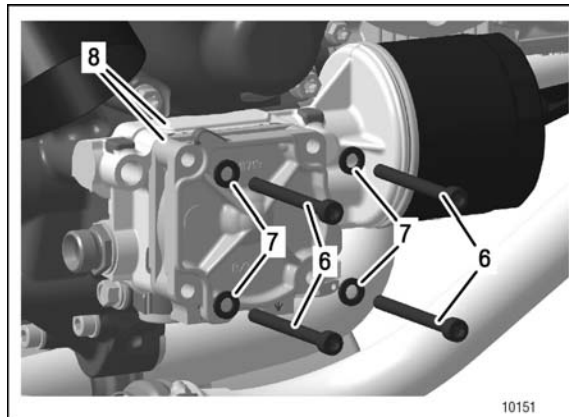


Fig. 2

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## 3.1.1) Oil pump - disassembly

See Fig. 3.

Step	Procedure
1	Remove the oil pump cover (1) and discard O-ring (2).

**NOTICE**

The rotary piston and rotor are marked.

- 1 Oil pump cover
- 2 O-ring

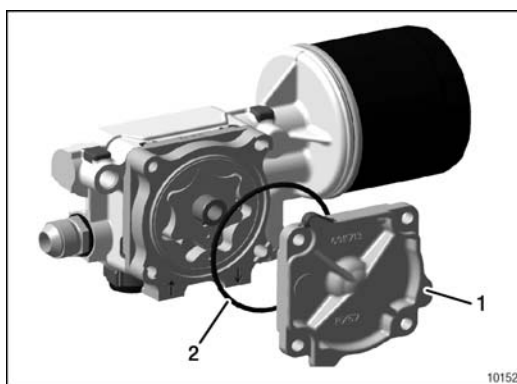


Fig. 3

See Fig. 4.

Step	Procedure
2	Remove rotor (inner rotor (3)) and rotary piston (outer rotors (4)) and needle pin (6).

- 3 Rotor (inner rotor)
- 4 Rotary piston (outer rotor)
- 5 Mark (dot)
- 6 Needle pin 4x15.8

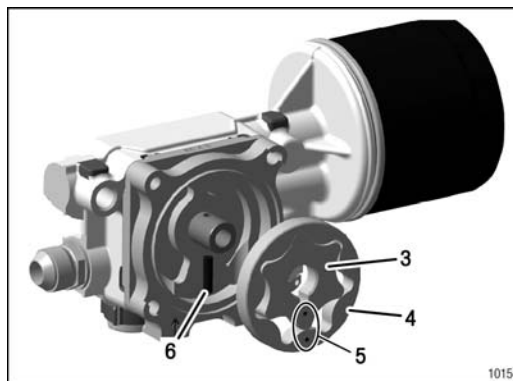


Fig. 4

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See Fig. 5.

Step	Procedure
3	Remove oil pump housing (7) and discard O-ring (8).

7 Oil pump housing  
8 O-ring

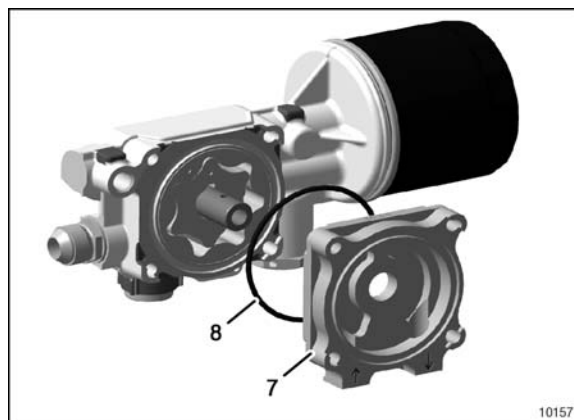


Fig. 5

**3.2) Oil pump single parts - check, Oil pump housing - inspection, Rotary piston/rotor - inspection, Oil pump shaft - inspection**

See Maintenance Manual Heavy for the engine type 915 i A and 915 i B Series.

**3.3) Preparation of oil pump housing**

Oil pump housing:

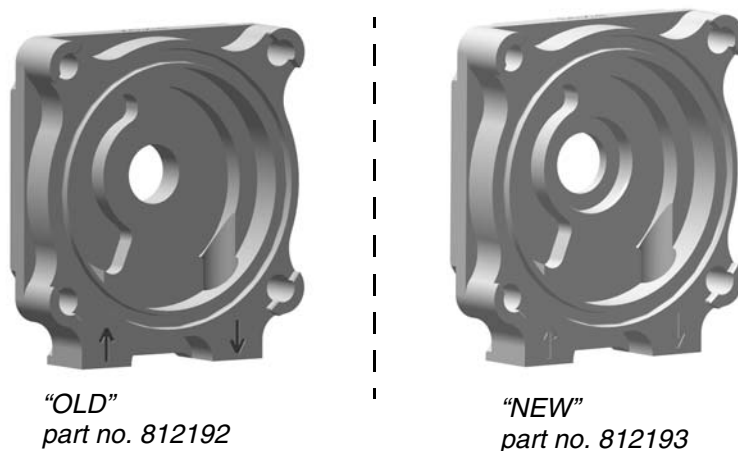


Fig. 6

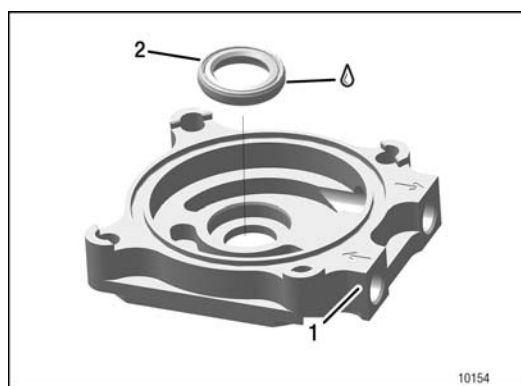
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See [Fig. 7](#).

Step	Procedure
1	Place new oil pump housing (1) with rotor cavity and seal cavity facing upwards on a clean, flat surface. NOTE: Do not damage rear sealing face of oil pump housing.
2	Lubricate the sealing lip and circumference of oil seal (2) with engine oil and place with closed face upwards into oil seal cavity.
3	Tap the seal into place using a rubber mallet.

1 Oil pump housing  
2 Oil seal



*Fig. 7*

NOTE: Oil seal already installed in the new oil pump housing (part no. 812193) supplied with the kit part no. 481550.



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## 3.4) Re-assembly with new oil pump housing

See Fig. 8.

**NOTICE** Assembly must be carried out according to the specifications of the current Maintenance Manual Heavy.

Step	Procedure
1	Place new O-ring 63-2.5 (1) into the oil pump housing (3).
2	Wrap tape over the oil pump shaft (2) to protect the oil seal.
3	Apply engine oil to the oil pump shaft. Place oil pump housing (3) with seal installed over oil pump shaft (2), while turning it slightly.
4	Check if the oil seal lip is seated correctly.
5	Remove the tape from the oil pump shaft (2).

- 1 Oil seal 63-2.5
- 2 Oil pump shaft
- 3 Oil pump housing

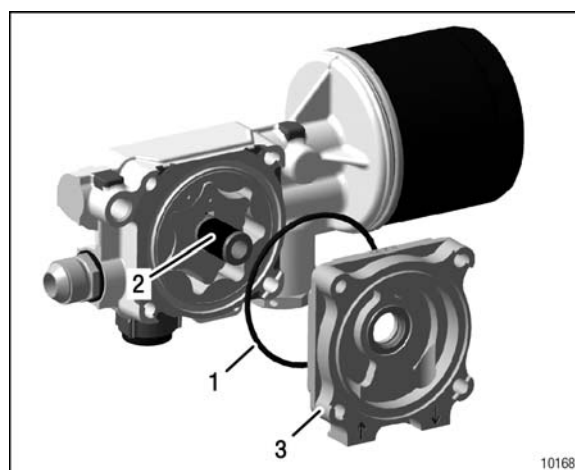


Fig. 8

See Fig. 9.

Step	Procedure
6	Place needle pin (4) through oil pump shaft and place rotor (inner rotor (7)) over shaft, align pin to key slot. NOTE: Slowly rotate the engine in normal direction until the pin bore in the oil pump shaft is horizontal, this will allow the needle pin to stay in place.
7	Place rotary piston (outer rotor (6)) with identification dot (5) facing outwards over inner rotor.

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- 4 Needle pin
- 5 Mark (dot)
- 6 Rotary piston (outer rotor)
- 7 Rotor (inner rotor)

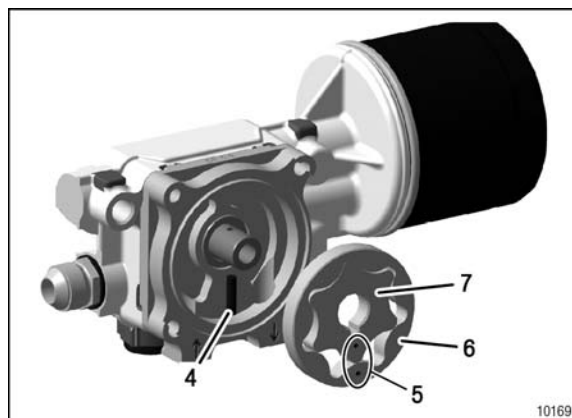


Fig. 9

Step	Procedure
8	Place new O-ring 63-2.5 (8) into oil pump cover (9).

- 8 O-ring 63-2.5
- 9 Oil pump cover

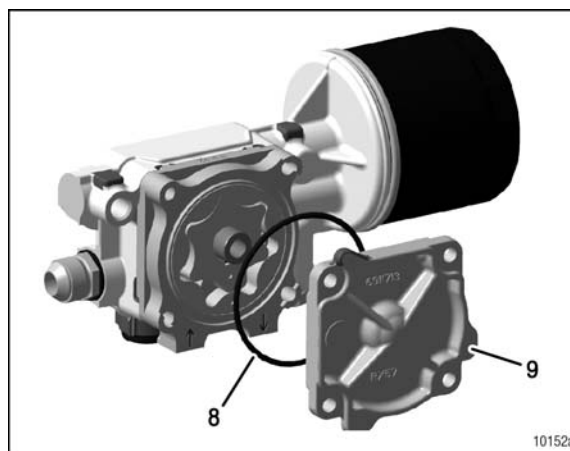


Fig. 10

See Fig. 11.

**NOTICE**

Hold the oil pump shaft when putting the oil pump cover on it. Otherwise the oil pump shaft is pushed out by the air cushion.

**NOTICE**

Make sure the oil pump cover is in the correct position when putting it on.

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Step	Procedure
9	Place the oil pump cover on the oil pump center housing.

10 Oil pump cover

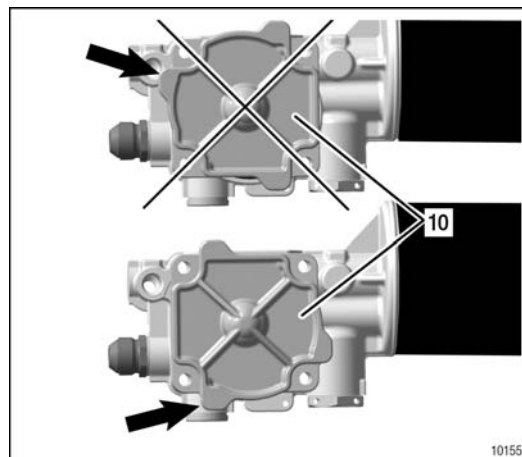


Fig. 11

### 3.5) Oil pump installation

**Preparation** Check fit of the O-rings (3) on the oil pump housing (2).

**NOTICE** All the O-rings must be replaced!  
Ensure that the oil pump shaft (3) is in the correct installation position.

1 Oil pump shaft  
2 Oil pump housing  
3 O-rings

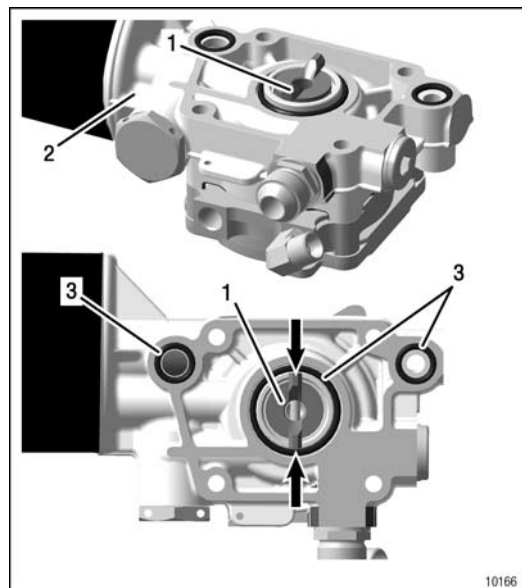


Fig. 12

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See Fig. 13.

Step	Procedure
1	Apply LOCTITE 5910 to the contact area on the crankcase.

### 4 Crankcase

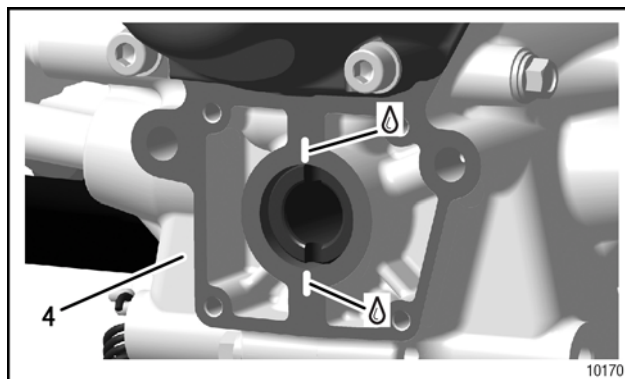


Fig. 13

See Fig. 14.

Step	Procedure
2	Install the oil pump housing with Allen screws M6x50 (5) and washers 6.4 (6) crosswise and by hand. Then tighten the Allen screws crosswise. Tightening torque 10 Nm (89 in. lb).
3	Coat the threads of turbo oil suction elbow (7) with LOCTITE 243 and screw into oil pump housing until tight and aligned with turbo oil suction line (8). Tighten torque 12 Nm (106 in. lb). NOTE: Elbow threads are tapered, do not over-tighten or oil pump housing may be damaged.
4	Attach turbo oil suction line (8). Tighten torque 15 Nm (133 in. lb).
5	Connect the turbo pressure oil line (9) (turbo and governor) using banjo bolt M10x1x30 (10) and new sealing rings. Tightening torque 12 Nm (106 in. lb).
6	Re-install the cable clamps.
7	Clean up any residual oil and degrease area to allow proper leak inspection.

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- 5 Allen screws M6x65
- 6 Washers 6.4
- 7 Male stud elbow M10x1
- 8 Turbo oil suction line
- 9 Turbo pressure oil line
- 10 Banjo bolt M10x1x30

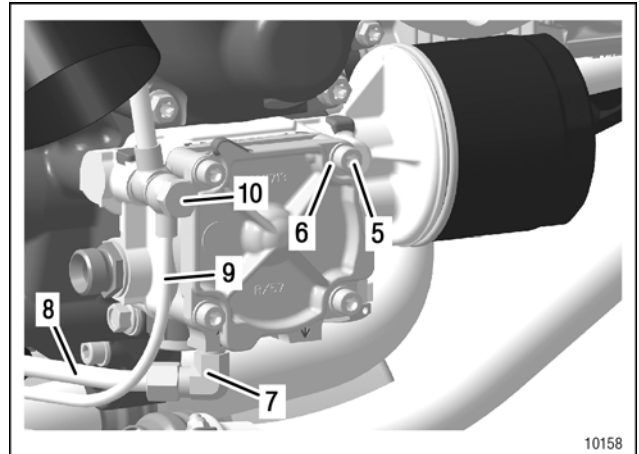


Fig. 14

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### 3.6) Finishing work

Purge the oil system. See Chapter 79-00-00 of the latest Maintenance Manual Line of engine type 915 i A and 915 i B Series.

### 3.7) Test run

Conduct test run. See Chapter 12-20-00 of the latest Maintenance Manual Line 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.

The execution of the mandatory Service Bulletin must be confirmed in the logbook.

**|** 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.

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.

### 3.9) Inquiries

Inquiries regarding this Service Bulletin 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 [www.flyrotax.com](http://www.flyrotax.com).