

SERVICE BULLETIN

Inspection and/or correction of turbocharger heat shield orientation for ROTAX® Engine Type 915 i A and 915 i B (Series)

ATA System: 78-10-00 Exhaust system

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 915 i A and 915 i B Series and/or accessories/spare parts are affected, if at least one of the following criteria applies:

Criterion A) Engine serial number:

Engine type	Serial number
915 iSc A	from S/N 9127301 up to S/N 9127311 inclusive from S/N 9127313 up to S/N 9127322 inclusive
915 iSc B	from S/N 9122510 up to S/N 9122522 inclusive

NOTE: On engines with S/N higher than the range listed above, inspection has already been completed during serial production.

Criterion B) Turbocharger serial number:

Turbocharger	Serial number
Part no. 839106	S/N 202-01-160801-00001 / S/N 202-01-160801-00002 S/N 202-01-160801-00004 / S/N 202-01-160801-00005 S/N 202-01-160801-00007 / S/N 202-01-160801-00009 S/N 202-01-160801-00012 / S/N 202-01-160801-00013 S/N 202-01-160801-00020 / S/N 202-01-160801-00021 S/N 202-01-160801-00023 from S/N 202-01-160801-00025 up to S/N 202-01-160801-00029 inclusive S/N 202-01-160801-00031 / S/N 202-01-160801-00033 S/N 202-01-160801-00037 / S/N 202-01-160801-00038 S/N 202-01-160801-00041 / S/N 202-01-160801-00044 from S/N 202-01-170119-00001 up to S/N 202-01-170119-00007 inclusive from S/N 202-01-170119-00009 / S/N 202-01-170321-00012 inclusive S/N 202-01-170321-00020 / S/N 202-01-170321-00022 S/N 202-01-170321-00023 from S/N 202-01-170321-00027 up to S/N 202-01-170528-00032 inclusive

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Turbocharger	Serial number
Part no. 839106	<p>S/N 202-01-170528-00031</p> <p>from S/N 202-01-171020-00001 up to S/N 202-01-171020-00009 inclusive</p> <p>from S/N 202-01-171020-00013 up to S/N 202-01-171020-00016 inclusive</p> <p>from S/N 202-01-171020-00018 up to S/N 202-01-171020-00020 inclusive</p> <p>from S/N 202-01-171020-00022 up to S/N 202-01-171020-00028 inclusive</p> <p>from S/N 202-01-171114-00001 up to S/N 202-01-171114-00007 inclusive</p> <p>S/N 202-01-171114-00010 / S/N 202-01-171114-00011</p> <p>from S/N 202-01-171114-00013 up to S/N 202-01-171114-00020 inclusive</p> <p>from S/N 202-01-171114-00022 up to S/N 202-01-171114-00025 inclusive</p> <p>from S/N 202-01-171116-00001 up to S/N 202-01-171116-00008 inclusive</p> <p>from S/N 202-01-171116-00010 up to S/N 202-01-171116-00017 inclusive</p> <p>from S/N 202-01-171116-00019 up to S/N 202-01-171116-00023 inclusive</p> <p>from S/N 202-01-171116-00025 up to S/N 202-01-171116-00032 inclusive</p> <p>from S/N 202-01-171116-00034 up to S/N 202-01-171116-00046 inclusive</p> <p>from S/N 202-01-171128-00001 up to S/N 202-01-171128-00015 inclusive</p> <p>from S/N 202-01-171130-00001 up to S/N 202-01-171130-00009 inclusive</p> <p>from S/N 202-01-171130-00012 up to S/N 202-01-171130-00015 inclusive</p> <p>from S/N 202-01-171201-00001 up to S/N 202-01-171201-00016 inclusive</p> <p>from S/N 202-01-171208-00002 up to S/N 202-01-171208-00007 inclusive</p> <p>from S/N 202-01-171208-00009 up to S/N 202-01-171208-00012 inclusive</p> <p>from S/N 202-01-171214-00001 up to S/N 202-01-171214-00004 inclusive</p> <p>from S/N 202-01-171214-00007 up to S/N 202-01-171214-00010 inclusive</p> <p>S/N 202-01-171214-00012 / S/N 202-01-171214-00013</p> <p>from S/N 202-01-171214-00015 up to S/N 202-01-171214-00026 inclusive</p> <p>S/N 202-01-171214-00030</p> <p>from S/N 202-01-171214-00032 up to S/N 202-01-171214-00036 inclusive</p> <p>from S/N 202-01-180112-00001 up to S/N 202-01-180112-00003 inclusive</p> <p>S/N 202-01-180112-00006 / S/N 202-01-180112-00007</p> <p>S/N 202-01-180112-00009 / S/N 202-01-180112-00011</p> <p>from S/N 202-01-180112-00013 up to S/N 202-01-180112-00021 inclusive</p> <p>from S/N 202-01-180112-00023 up to S/N 202-01-180112-00026 inclusive</p> <p>from S/N 202-01-180112-00029 up to S/N 202-01-180112-00031 inclusive</p> <p>S/N 202-01-180306-00003 / S/N 202-01-180306-00004</p> <p>S/N 202-01-180306-00006</p> <p>from S/N 202-01-180306-00008 up to S/N 202-01-180306-00015 inclusive</p> <p>S/N 202-01-180306-00018 / S/N 202-01-180306-00021</p> <p>S/N 202-01-180306-00022 / S/N 202-01-180306-00024</p> <p>S/N 202-01-180306-00025</p> <p>from S/N 202-01-180306-00027 up to S/N 202-01-180306-00032 inclusive</p> <p>S/N 202-01-180308-00020</p> <p>S/N 202-01-180315-00006 / S/N 202-01-180315-00007</p> <p>S/N 202-01-180315-00016 / S/N 202-01-180315-00024</p> <p>S/N 202-01-180315-00025 / S/N 202-01-180315-00029</p> <p>from S/N 202-01-180807-00001 up to S/N 202-01-180807-00006 inclusive</p> <p>from S/N 202-01-180807-00008 up to S/N 202-01-180807-00010 inclusive</p> <p>from S/N 202-01-180807-00014 up to S/N 202-01-180807-00019 inclusive</p>

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Turbocharger	Serial number
	from S/N 202-01-180807-00021 up to S/N 202-01-180807-00026 inclusive from S/N 202-01-180807-00030 up to S/N 202-01-180807-00032 inclusive S/N 202-01-180830-00001 / S/N 202-01-180830-00002 from S/N 202-01-180830-00004 up to S/N 202-01-180830-00006 inclusive from S/N 202-01-180830-00009 up to S/N 202-01-180830-00012 inclusive S/N 202-01-180830-00014 / S/N 202-01-180830-00016 from S/N 202-01-180830-00019 up to S/N 202-01-180830-00023 inclusive from S/N 202-01-180830-00025 up to S/N 202-01-180830-00027 inclusive S/N 202-01-180830-00030 / S/N 202-01-180830-00031 S/N 202-01-181106-00001 / S/N 202-01-181106-00002 S/N 202-01-181106-00005 / S/N 202-01-181106-00006 from S/N 202-01-181106-00012 up to S/N 202-01-181106-00014 inclusive S/N 202-01-181106-00016 / S/N 202-01-181106-00018 from S/N 202-01-181106-00019 up to S/N 202-01-181106-00032 inclusive S/N 202-01-181121-00002

NOTE: Turbochargers with S/N higher than the range listed above have already been inspected during serial production.

Criterion C) Spare parts:

Further all engines are affected, which have been equipped with turbochargers with part no. 893106 and with serial numbers listed within Criterion B) above during engine repair, maintenance, general overhaul or any other exchange action.

1.2) Concurrent ASB/SB/SI and SL

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

Service Bulletin-SB-915 i A-005/SB-915 i B-005, title "Inspection of turbocharger assy.", current issue.

1.3) Reason

Internal quality checks have shown that in isolated cases, the turbocharger wastegate actuator heat shield has been positioned and installed wrong. This may lead to overheating of the wastegate actuator assembly which has an influence on turbocharger operation.

1.4) Subject

Inspection and/or correction of turbocharger heat shield orientation for ROTAX® Engine Type 915 i A and 915 i B (Series).

1.5) Compliance

- Carry out this inspection 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 25 hours of operation, but at the latest after 200 days (from the date of the initial issue of this Service Bulletin)
- Before the initial installation of engine and/or spare part, but at the latest by 31 December 2019, the "Inspection and/or correction of turbocharger heat shield orientation" must be conducted according to the following instructions in Chapter 3 on engines listed in Chapter 1.
- Immediately, on undelivered engines/spare parts

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This must be done in accordance with the following instructions in Chapter 3.



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 ref. EASA.21J.048.

1.7) Labor time and credit

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.

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 (MML)
- Maintenance Manual Heavy (MMH)

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

- All parts are interchangeable

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2) Material Information

2.1) Material

None.

2.2) Company support information

None.

2.3) Material requirement and credit per engine

None.

2.4) Material requirement and credit 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:

Description	Qty/engine	Part no.	Application
LOCTITE ANTI SEIZE	as required	297434	wastegate lever bushing
LOCTITE 243 BLUE	as required	897651	wastegate regulator assy. studs
LOCKING PAINT	as required	898570	wastegate regulator assy. nuts/studs

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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 approved by the respective Aviation Authorities
- Persons with approved qualifications for the corresponding engine types. Only authorized persons (iRMT, Level Line Maintenance for Inspection, Level Heavy Maintenance for Repair) are entitled to carry out this work



All work must be performed in accordance with the relevant Maintenance Manual.

3.1) Inspection of wastegate actuator heat shield position

The following steps are important, read them carefully!



WARNING

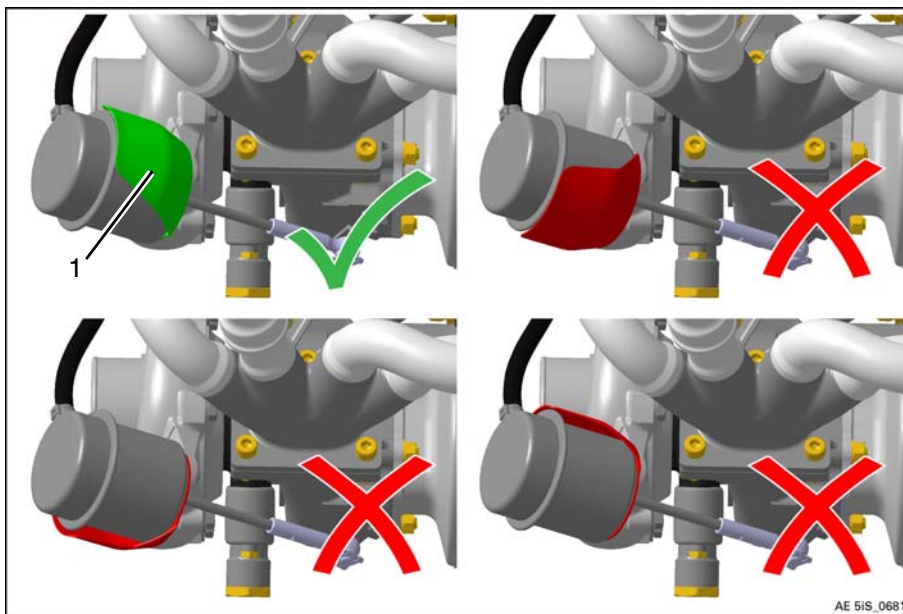
Danger of severe burns and scalds!

Allow the engine and exhaust system to cool to ambient temperature before starting work.

See Fig. 1.

Step	Procedure
1	Inspect the wastegate regulator heat shield (1) for correct position. NOTE: The heat shield must be positioned to provide maximum shielding of radiant heat from the exhaust system. The heat shield must point towards the turbocharger exhaust turbine inlet. See Fig. 1 for correct alignment.
2	If the heat shield is correctly positioned, no further action is required.
3	If the heat shield is in wrong position, follow the instructions in section 3.2 for correction.

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1 Correct position of wastegate actuator heat shield

Fig. 1

NOTE: If you need to check the engine and/or turbocharger serial number S/N see Fig. 2.

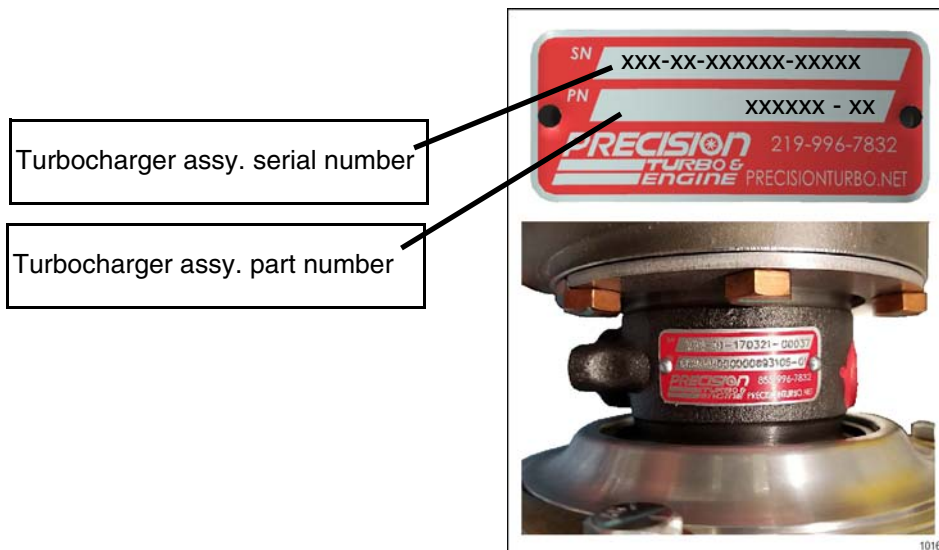


Fig. 2

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3.2) Wastegate actuator heat shield correction (only in case visual inspection is NOT passed OK)

See Fig. 3 to Fig. 7.



Removal and re-installation of the heat shield must be carried out according to the specifications of the current Maintenance Manual Heavy.



WARNING

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



NOTICE

Do not loosen wastegate regulator rod end or locking nut.

Step	Procedure
1	Remove the locking clip, washer and rod end from the wastegate lever.
2	Remove bushing from the wastegate lever.

- 1 Locking nut
- 2 Rod end
- 3 Locking clip
- 4 Washer
- 5 Bushing
- 6 Wastegate lever

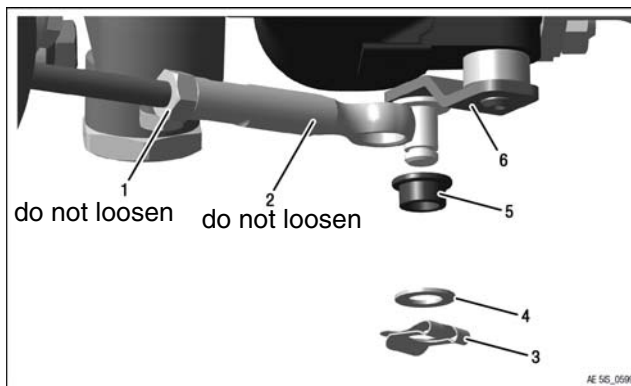


Fig. 3

See Fig. 4.

Step	Procedure
3	Remove two collar nuts with washers from the wastegate regulator.
4	Remove wastegate regulator assy. and heat shield.

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- 1 Collar nut
- 2 Washer
- 3 Wastegate regulator assy.
- 4 Heat shield

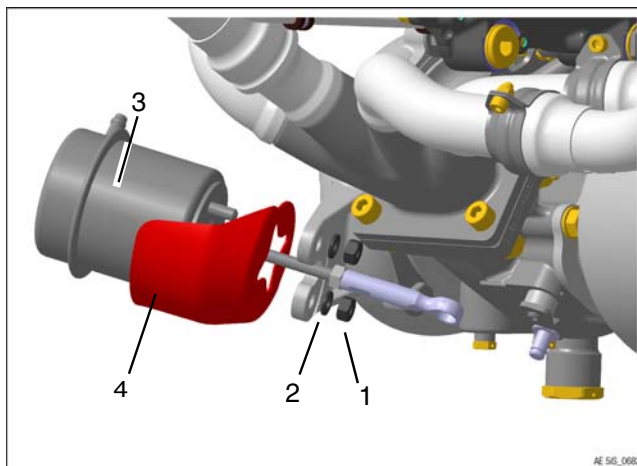


Fig. 4

Step	Procedure
5	Install the heat shield over the studs of the wastegate regulator in correct position. NOTE: The heat shield must point towards the turbocharger exhaust turbine inlet. See Fig. 1 for correct alignment.
6	Place wastegate regulator assy. and heat shield back into turbocharger housing.

See Fig. 5.

Step	Procedure
7	Apply LOCTITE 243 onto wastegate regulator assy. studs.
8	Install collar nuts and washers. Tightening torque 13 Nm (115 in.lb).
9	Apply LOCKING PAINT (or equivalent) to the top of both collar nuts/studs.

- 1 Washer
- 2 Collar nut
- 3 Heat shield
- 4 Wastegate regulator assy.

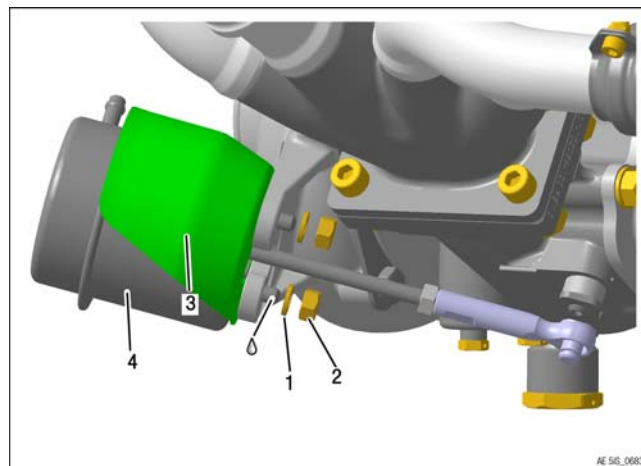


Fig. 5

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See Fig. 6.

Step	Procedure
10	Lubricate the bushing with LOCTITE ANTI SEIZE 8151 (or equivalent).
11	Place the bushing onto the wastegate lever shaft with the bushing collar facing towards the wastegate lever.
12	Rotate wastegate lever until end stop (closed position) and hold in position.
13	Place the rod end over the bushing so that the wastegate is still in closed position.

- 1 Rod
- 2 Bushing
- 3 Locking nut
- 4 Rod end
- 5 Wastegate lever

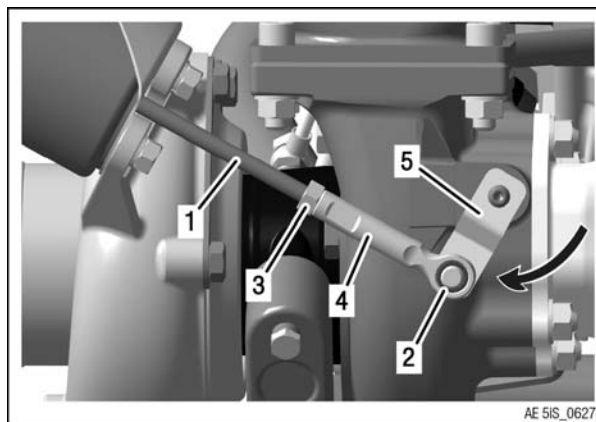


Fig. 6

See Fig. 7.

Step	Procedure
14	Place the washer over the wastegate shaft and hold in place.
15	Place the open end of the locking clip into the groove of the wastegate shaft and the beveled portion of the clip over the end of the shaft.
16	Push the locking clip into place until the beveled end retains the clip over the shaft.

- 1 Washer
- 2 Locking clip

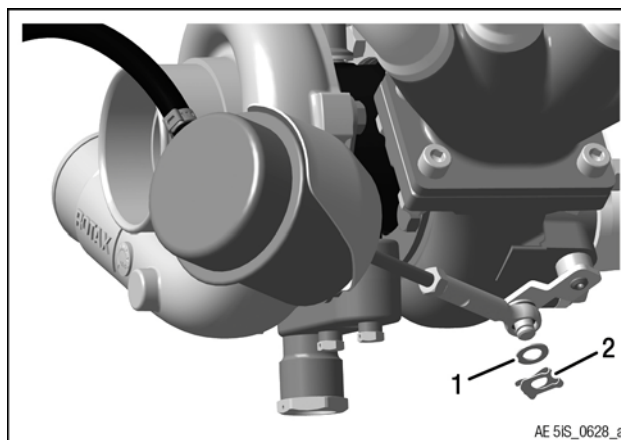


Fig. 7

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NOTICE

No recalibration of wastegate regulator assy. is required (unless rod end was loosed).

- Restore aircraft to original operating configuration

3.3) Test run

Conduct test run.



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

3.4) Summary

These instructions (Chapter 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. In case of a spare part makes sure to document and visualize this to the maintenance technician/operator in a proper way.



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.

3.5) 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.

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.

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