SERVICE INSTRUCTION

Safety wiring for ROTAX® 912 (Series), 914 (Series), 912 i (Series), 915 i (Series) and 916 i (Series) Aircraft Engines

ATA System: 72-00-00 Engine

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
912 (Series)	all
914 (Series)	all
912 i (Series)	all
915 i (Series)	all
916 i (Series)	all

1.2) Concurrent ASB/SB/SI and SL

In addition to this Service Letter the following documents must be observed:

- in general all relevant Alert Service Bulletins (ASB), Service Bulletins (SB), Service Instructions (SI), Service Letters (SL), Service Instruction - Parts and Accessories (SI-PAC) with relevance to perform this maintenance, repair or overhaul task.

1.3) Reason

Maintenance information regarding locations and usage of safety wiring on ROTAX® aircraft engines.

NOTE: This Service Instruction does provide information on the specified location already foreseen by Rotax to make use of safety wiring. The safety wiring as such needs to be installed in course of the installation of the engine and then in the course of maintenance according to the aircraft manufacturer's instructions and specifications.

There might be more positions defined by the aircraft manufacturer.

1.4) Subject

Safety wiring for ROTAX® 912 (Series), 914 (Series), 912 i (Series), 915 i (Series) and 916 i (Series) Aircraft Engines.

1.5) Compliance

NONE - For Information Only.

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

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These maintenance instructions shall be considered at any maintenance events, retrofitting, repair and overhaul.

1.6) Approval

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

1.7) Labor time

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

- in general Illustrated Parts Catalog (IPC) and in particular:
  Chapters 24-30-00, 72-20-00, 73-00-00, 73-10-00, 75-20-00, 78-10-00 & 79-20-00
- in general Operators Manual (OM)
- in general Installation Manual (IM) and in particular:
  Chapters 73-00-00 and 78-00-00.
- in general Maintenance Manual Line (MML) and in particular:
  Chapters 05-00-00 and 12-20-00.
- in general Maintenance Manual Heavy (MMH) and in particular:
  Chapters 24-30-00, 73-00-10, 75-00-00, 78-10-00, 78-20-00, 79-00-00

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

Not affected.

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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

Any possible support by BRP-Rotax will be provided on request by ROTAX® Authorized Distributors or their independent Service Centers

2.3) Material requirement per engine

Parts requirement:

Part no.	Qty/engine	Description	Application
297555*	AR	Safety wire 0.8 mm (0.032 in)	See section 3.4
n.a.*	AR	Safety wire 0.6 mm (0.025 in)	See section 3.4
* or equivalent			

2.4) Rework of parts

None.

2.5) Special tooling/lubricants- /adhesives- /sealing compounds

Tooling requirement:

Description	Qty/engine	Part no.	Application
Safety wire pliers	AR	-	See section 3.4

NOTICE If using these special tools observe the manufacturers specifications.

Fig. 1
Safety wire pliers

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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® - Airworthiness representatives
- 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 Heavy Maintenance) are entitled to carry out this work
- Persons with type-specific training

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

All work has to be performed in accordance with the relevant ROTAX® Instructions for Continued Airworthiness (ICA) of the respective engine type.

General

Further material on general inspection, maintenance and repair can also be found in relevant Advisory Circular AC 43.13-1B, Section 7. Safetying from FAA.

Advisory Circular

The Advisory Circular (AC) contains maintenance methods, techniques and practices.

3.1) Illustrated Parts Catalog - related information

See current Illustrated Parts Catalog (IPC) for the respective engine type, Chapters 24-30-00, 72-20-00, 73-00-00, 73-10-00, 75-20-00, 78-10-00 & 79-20-00.

3.2) Installation - related information

See current Installation Manual (IM) for the respective engine type, Chapters 73-00-00 & 78-00-00.

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3.3) Operation - related information

See current Operators Manual (OM) for the respective engine type.
See also Aircraft Flight Manual (AFM) / Pilot Operating Handbook (POH).

3.4) Maintenance (Line) - related information

3.4.1)Mandatory safety wire engine positions

External alternator - Mandatory

See current Maintenance Manual Heavy (MMH) for the respective engine type, Chapter 24-30-00.

See Fig. 2

Step	Procedure
1	Safety wire alternator mounting hex screws M10x45 (1) and M8x20 (2).

1 Hex screw M10x45 with bore for safety wire

2 Hex screw M8x20 with bore for safety wire

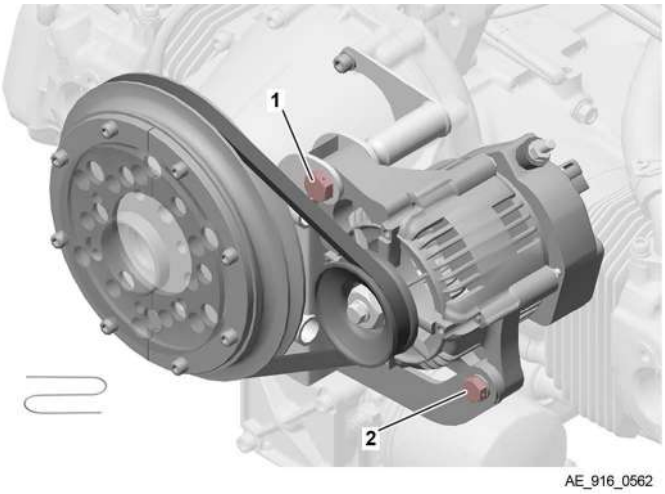

Fig. 2

See Fig. 3

Step	Procedure
2	Safety wire the tension bar hex screw M8x20 (3).

3 Hex screw M8x20 with bore for safety wire

Fig. 3

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Carburetor float bowl (914 Series) - Mandatory

See current Maintenance Manual Heavy (MMH) for the respective engine type, Chapter 73-00-10.

See Fig. 4

Step	Procedure
1	Safety wire 0.6 mm (0.025 in) the float bowl attachment screw assy. (1) to one of the float bowl safety wire attachment positions (2).

1 Attachment screw assy.

2 Float bowl safety wire attachment position

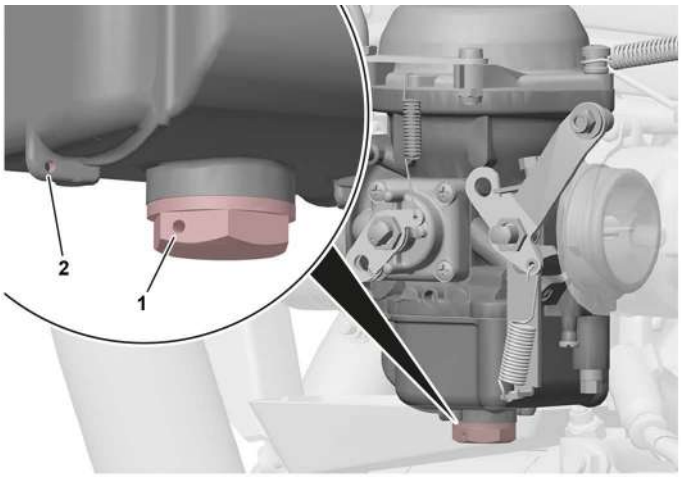

Fig. 4

NOTE: 0.025 safety wire is recommended for this position.

Air Filter (912 Series) - Mandatory

See current Maintenance Manual Heavy (MMH) for the respective engine type, Chapter 73-00-10.
See also current Maintenance Manual Line (MML) for the respective engine type, Chapter 12-20-00.

See Fig. 5

Step	Procedure
1a	Safety wire air filter 825712 (1) to carburetor safety wire attachment position (2).

1 Air filter safety wire attachment position

2 Carburetor safety wire attachment position

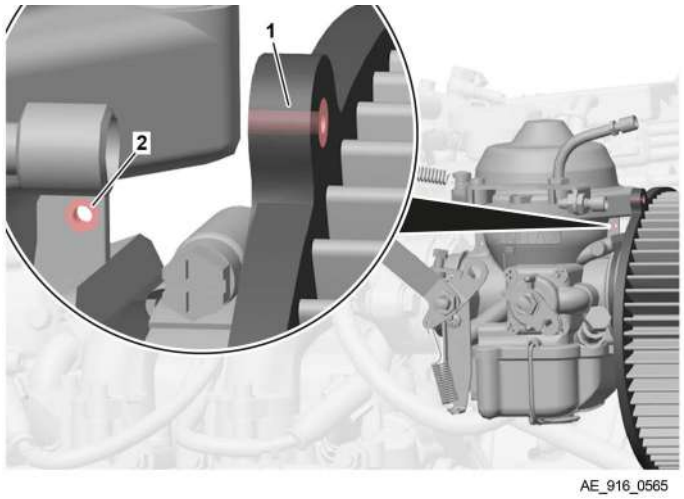

Fig. 5

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See Fig. 6

Step	Procedure
1b	Safety wire air filter 825553 (1) to carburetor safety wire attachment position (2).

1 Air filter safety wire attachment position

2 Carburetor safety wire attachment position

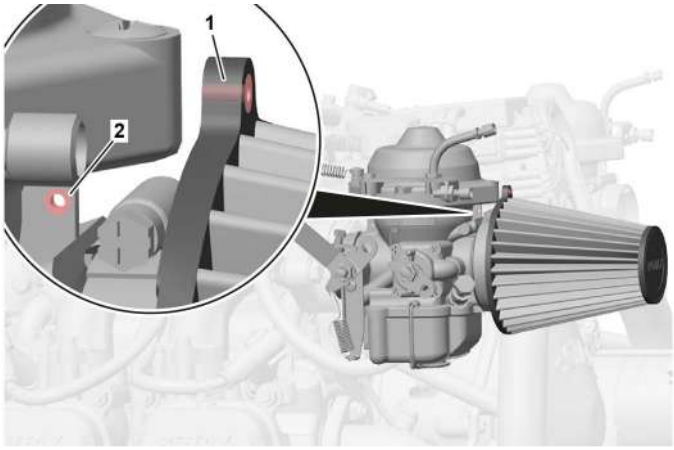

Fig. 6

Servo motor (914 Series) - Mandatory

See current Maintenance Manual Heavy (MMH) for the respective engine type, Chapter 78-20-00.

See also current Installation Manual (IM) for the respective engine type, Chapter 78-00-00.

See Fig. 7

Step	Procedure
1	Secure with safety wire between servo motor (1) and clamp (2) so that the Bowden cable cannot escape from the cable retainer and consequently change the setting during operation.

1 Servo safety wire attachment position

2 Bowden cable clamp attachment position

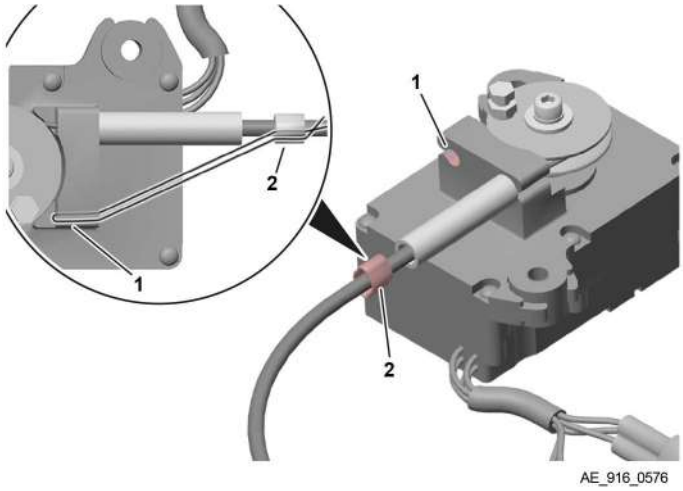

Fig. 7

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3.4.2) Recommended safety wire engine positions

Overflow bottle - Recommended

See current Maintenance Manual Heavy (MMH)

See current Installation Manual (IM) for the respective engine type, Chapter 75-00-00.

See also current Maintenance Manual Line (MML) for the respective engine type, Chapter 12-20-00.

See Fig. 8

Step	Procedure
1	Safety wire the coolant overflow bottle lid (1) to overflow bottle safety wire attachment position (2).

1 Lid safety wire attachment position

2 Bottle safety wire attachment position

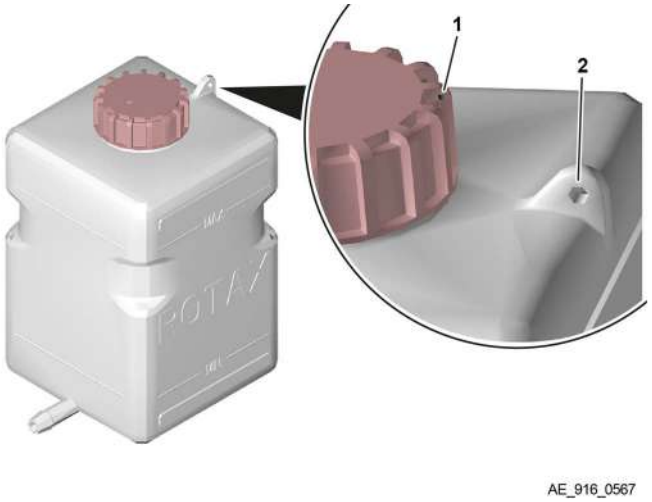

Fig. 8

Exhaust pipe springs - Recommended

See current Maintenance Manual Heavy (MMH) for the respective engine type, Chapter 78-10-00.

See also current Installation Manual (IM) for the respective engine type, Chapter 78-00-00.

See Fig. 9

Step	Procedure
1	Safety wire opposing pairs of exhaust springs (1) together.

1 Exhaust spring

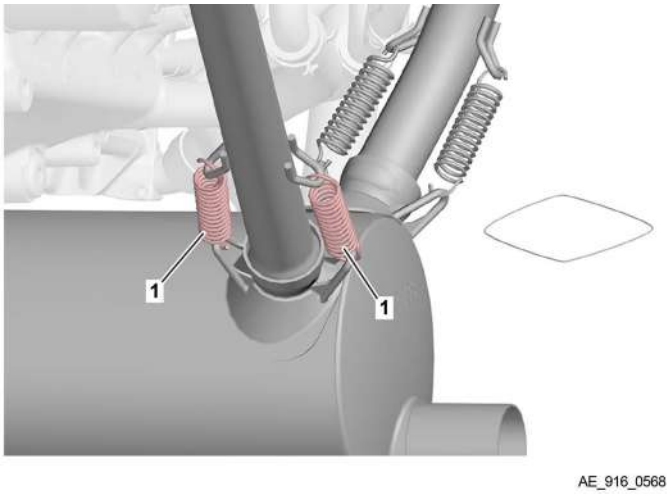

Fig. 9

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Exhaust end pipe spring - Recommended

See Fig. 10

Step	Procedure
1	Safety wire exhaust pipe clamp (1) and spring (2).

1 Exhaust pipe clamp

2 Exhaust spring

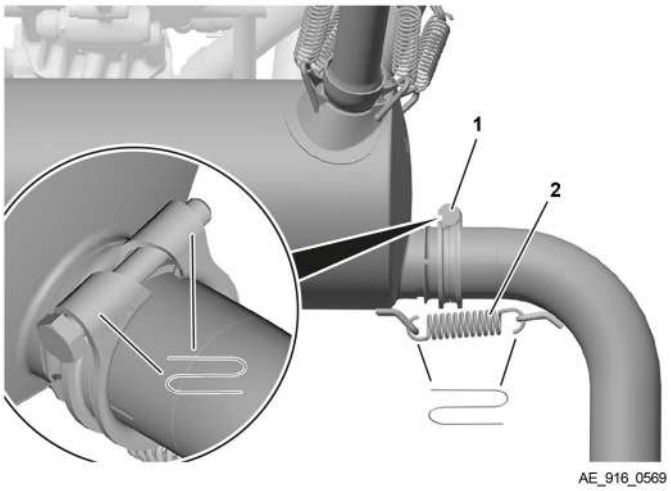

Fig. 10

Turbocharger oil sump - 914, 915 i & 916 i (Series) - Recommended

See current Maintenance Manual Heavy (MMH) for the respective engine type, Chapter 78-10-00.

See Fig. 11

Step	Procedure
1	Safety wire turbocharger oil sump hex. screws M6x55 (1).
2	Safety wire plug screw assy. (2).

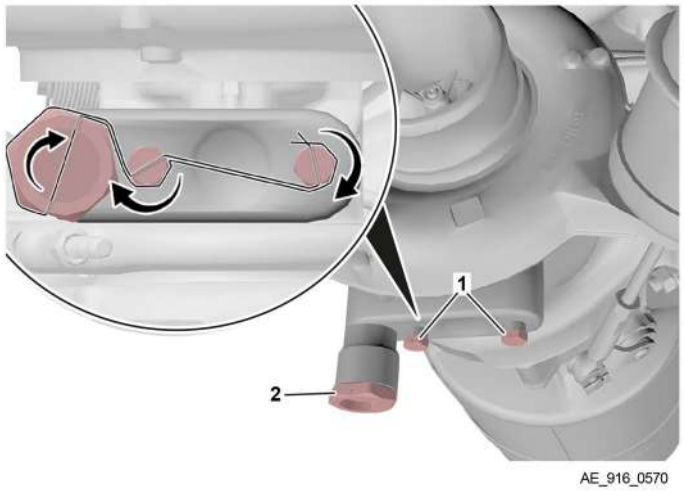

Fig. 11

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Oil Pump - Recommended

See current Maintenance Manual Heavy (MMH) for the respective engine type, Chapter 78-20-00 and 79-00-00.

See Fig. 12

Step	Procedure
1	Safety wire the oil pump plug screw (1).

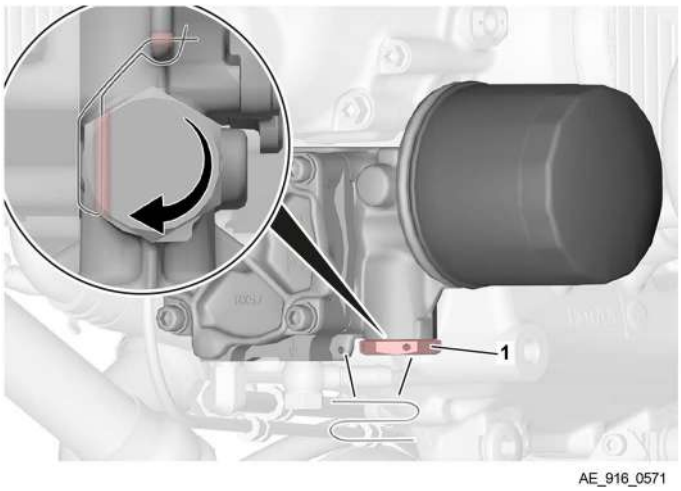

Fig. 12

Crankcase - Recommended

See current Maintenance Manual Line (MML) for the respective engine type, Chapter 12-20-00.

See Fig. 13

Step	Procedure
1	Safety wire magnetic drain plug (1).

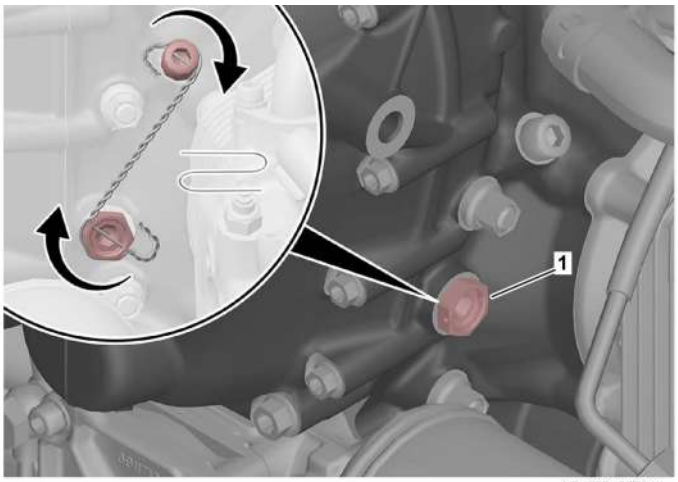

Fig. 13

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See current Maintenance Manual Heavy (MMH) for the respective engine type, Chapter 79-00-00.

See Fig. 14

Step	Procedure
2	Safety wire oil return banjo bolt (1).

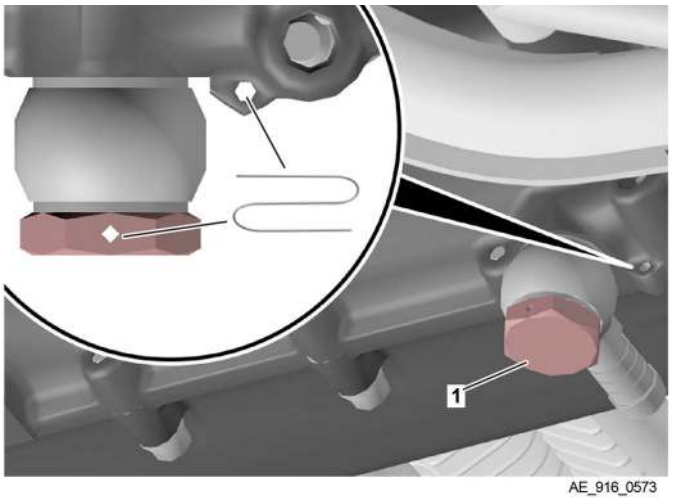

Fig. 14

Oil tank plug screw - Recommended

See current Maintenance Manual Line (MML) for the respective engine type, Chapter 12-20-00.

See Fig. 15

Step	Procedure
1	Safety wire oil tank plug screw (1).

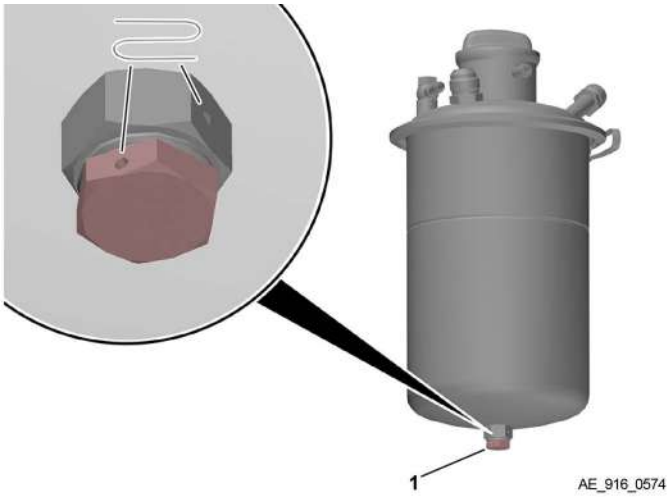

Fig. 15

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Oil tank profile clamp - Recommended

See current Maintenance Manual Heavy (MMH) for the respective engine type, Chapter 79-00-00.

See also current Maintenance Manual Line (MML) for the respective engine type, Chapter 12-20-00.

See Fig. 16

Step	Procedure
1	Safety wire oil tank profile clamp (1).

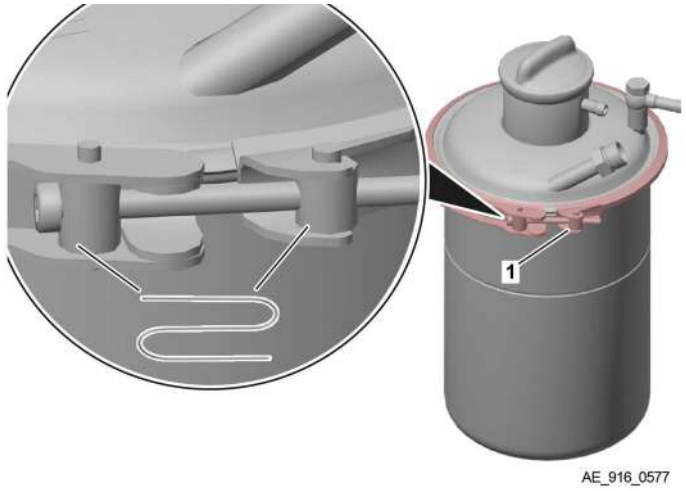

Fig. 16

Carburetor Bowden cable sleeve - Recommended

See current Maintenance Manual Line (MML) for the respective engine type, Chapter 12-20-00.

See Fig. 17

Step	Procedure
1	Secure with safety wire between adjustment screw (1) and Bowden cable sleeve (2) so that the Bowden cable cannot escape from the adjustment screw and consequently change the setting during operation.
NOTE:	The safety wire should not be pulling the Bowden cable towards the adjustment screw (1) as this will affect the carburetor synchronization. Some slack is required. 0.025 safety wire is recommended for this application

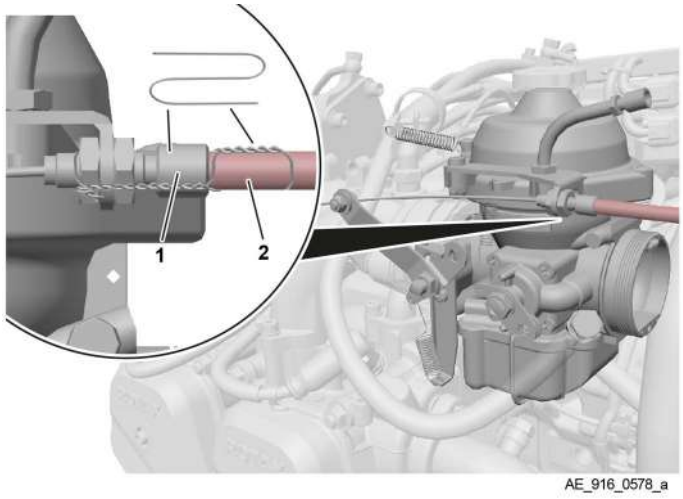

Fig. 17

3.5) Maintenance (Heavy) - related information

See current Maintenance Manual Heavy (MMH) for the respective engine type, Chapters 24-30-00 73-00-10, 75-00-00, 78-10-00, 78-20-00 and 79-00-00.

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3.6) Test run

Conduct an engine test run.

In case of uninstalled engines test run is accomplished with the mandatory test run after installation into aircraft.

See current Maintenance Manual Line (MML) for the respective engine type, Chapter 12-20-00.

3.7) Summary

These instructions (section 3) have to be followed in accordance with the deadlines specified in section 1.5.

I	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.

3.8) Inquiries

Inquiries regarding this Service Letter 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 https://dealerlocator.flyrotax.com.