



## SERVICE INSTRUCTION

# Introduction of a new connector for regulator B for ROTAX® Engine Type 912 i, 915 i A and 915 i B (Series)

ATA System: 76-10-00 Fuse Box

### 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 i Series	optional
915 iSc A	from S/N 9127323
915 iS A	from S/N 9132300
915 iSc B	from S/N 9122524

NOTE: On engines with S/N higher than the ranges listed above, new style connector has already been fitted in serial production.

NOTE: On engines with S/N lower than the ranges listed above, the regulator B or stator assy. connections can be modified for exchange or repair of the relevant component. The modifications on the rectifier regulator B can be performed at a maintenance, repair or operation (MRO) event as per section 3.

NOTE: It is NOT mandatory to retrofit engines with old style regulator B and stator connector.

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

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

Service Bulletin-SB-912 i-006, title "Exchange of stator assy.", current issue.

Service Instruction-SI-912 i-004, title "Replacement of regulator A and regulator B", current issue.

#### 1.3) Reason

In the course of further development and standardization, a new connector for rectifier regulator B has been introduced. The new connector allows higher current draw.

#### 1.4) Subject

Introduction of a new connector for regulator B for ROTAX® Engine Type 912 i, 915 i A and 915 i B (Series).

#### 1.5) Compliance

NONE - For Information Only.

#### 1.6) Approval

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

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## 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 1<sup>st</sup> column of this table shows the revision status. Compare this number to the one 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

All parts are interchangeable with relevant modifications.

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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

None.

### 2.3) Material requirement and credit per engine

Parts requirement for connector gasket replacement:

Fig.no.	New p/n	Qty/ engine	Description	Application
	951981	1	Connector bracket*	
	481510	1	Connector set stator Lane B	
consist of:				
	864590	1	Connector housing Amphenol®	
	864595	1	Connector housing Amphenol®	
	864600	4	Faston connector housing Amphenol®	
	864605	4	Contact pin male Amphenol®	
	864610	2	Sealing plug	

\* Please contact your aircraft manufacturer for further support on material and instructions for possible further aircraft related modifications.

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

None.

### 2.5) Rework of parts

None.

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### 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:

Milspec no.	Description	Qty/ engine	Part no.	Application
M22520/1-01	Adjustable crimp tool (DMC® AF8 or equivalent)*	1	n.a.	
M22520/1-05	Adjustable positioner (DMC® UH2-5 or equivalent)*	1	n.a.	
-	Extraction tool (DMC® QXRT08 or equivalent)*	1	n.a.	

\* or equivalent

**NOTICE**

If using these special tools observe the manufacturers specifications.

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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.

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

### 3.1) Installation - related information



Pay attention to the specifications of the latest version of the Installation Manual (IM) for the respective engine type.

### 3.2) Maintenance (Line) - related information



See relevant Maintenance Manual (Line) for the respective engine type and its periodical maintenance information.

Points of inspection	Interval Operating hours		Chapter reference
	100 h	200 h	
Visual inspection of the wiring harness, connectors and brackets for secure fit, damage and signs of wear.	x		12-20-00 section 15.1

### 3.3) Maintenance (Heavy) - related



Pay attention to the specifications of the latest version of the Maintenance Manual Heavy (MMH) Chapter 76-10-00 section Fuse box installation for the respective engine type.

For the modification of old style connector the following assembly steps do apply:

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### 3.3.1) Replacement of male connector (regulator side)

In order to preserve maximum wire length, remove the wires with crimped male pins from regulator B connector housing (gray).

Step	Procedure
1	Label each of the 3 yellow wires with its location within the connector. The rear of the connector housing (1) is marked with numbers.
2	Gently pry the rectangular rubber seal (2) from the rear of the connector.

- 1 Connector housing
- 2 Rubber seal

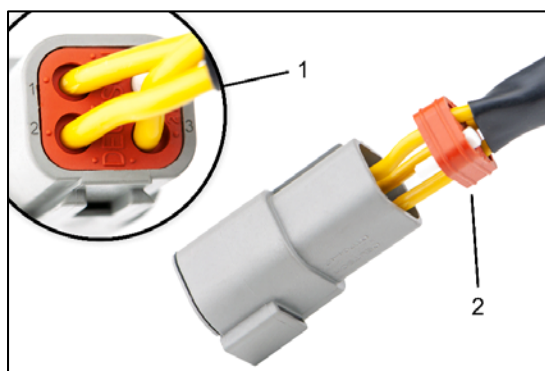


Fig. 1

Step	Procedure
3	Using fine-nosed pliers, pull the retaining wedge (5) from the connector housing.

- 3 Retaining sleeve
- 4 Sealing ring
- 5 Retaining wedge



Fig. 2

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Step	Procedure
4	Remove pins from connector housing by releasing plastic retaining tabs (6) and pulling wires from behind.
5	Cut off each wire at crimped pins (7) with a standard cutter.
6	Ensure that wires are still clearly numbered and pull rectangular rubber seal from the wires.

6 Retaining tabs  
 7 Cut off pins

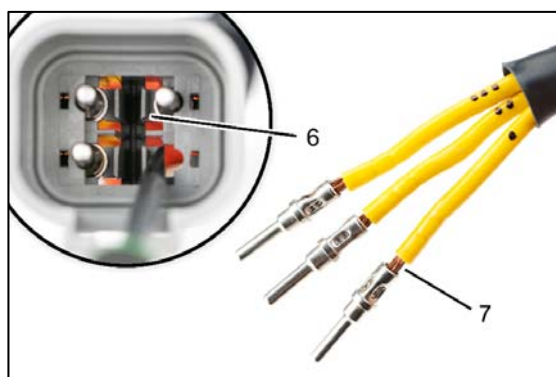


Fig. 3

### Attach Amphenol® male connector to regulator B

The following instructions depict the use of DMC® adjustable crimp tools. These tools or equivalent are required to correctly attach connecting pins.



**WARNING**

Failure to use correct crimping tool(s) may lead to engine damage, personal injury or death.

Step	Procedure
1	Carefully strip off approximately 10 mm (0.39 in.) of insulation from each of the three yellow wires. NOTE: Use a quality wire-stripping tool set to 12 AWG (3.31 mm <sup>2</sup> ) to avoid damaging wire strands.
2	Set the crimp tool's wire size to 12 AWG (3.31 mm <sup>2</sup> ) (8).
3	Stripped wires must seat fully into crimp pin and have approximately 1 mm (0.039 in.) insulation gap (9).

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8 12 AWG (3.31 mm<sup>2</sup>)  
9 1 mm (0.039 in.)

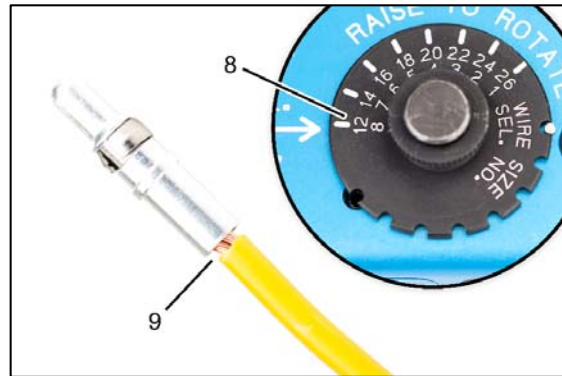


Fig. 4

Step	Procedure
4	Place the connector pin into crimp tool with crimp-barrel facing outwards. Adjust positioner until crimp-barrel protrudes approximately 1 to 2 mm (0.039 in. to 0.08 in.) from the tool face (10).
5	Place stripped wire fully into crimp-barrel and hold in place while crimp tool is compressed by hand until fully closed. <b>NOTE:</b> Crimp tool incorporates a ratcheting mechanism that requires the crimp tool to be fully closed before releasing.

10 Tool face 1 - 2 mm  
(0.039 in to 0.08 in.)



Fig. 5

Step	Procedure
6	Remove the wire and crimped connector pin from crimp tool and inspect for correct crimping. <b>NOTE:</b> Wire strands must be visible in witness hole (11) and crimps must be between the witness hole and the end of the crimp-barrel (12).

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11 Witness hole  
 12 Crimp-barrel

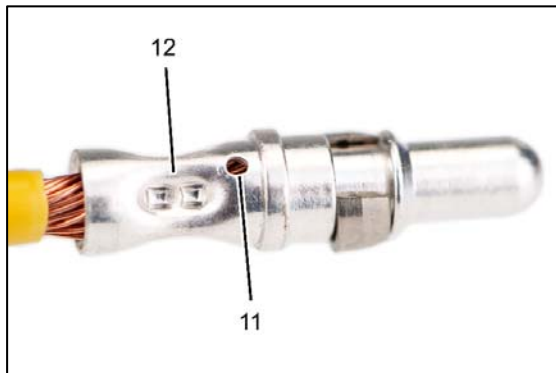


Fig. 6

### Assembly of the connector housing Amphenol® part no. 864595

Step	Procedure
1	Place rear connector screw cap over wires (13).
2	Push connector pins and wires through round rubber seal (14). NOTE: New connector positions are marked A through D (15), whereas wires were marked 1 through 4 from old connector positions.

Place numbered wires in the following alphabetical positions:

Wire	Connector position
1	A
2	B
3	C

Step	Procedure
3	Slide plastic sleeve (16) into the back of connector housing, aligning the keyway (17).

13 Screw cap  
 14 Rubber seal  
 15 Position letter  
 16 Sleeve  
 17 Key

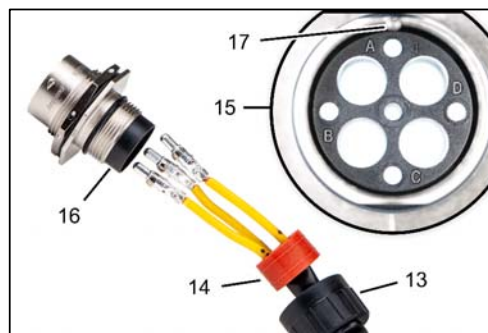


Fig. 7

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## SERVICE INSTRUCTION

Step	Procedure
4	Push each wire into connector until its pin snaps securely in place. NOTE: Correctly secured pin (18) will travel further into connector and lock in place. Removal requires using extractor tool.

18 Secured pin  
19 Un-secured pin



Fig. 8

Step	Procedure
5	With all connector pins secured, push the rubber seal into the plastic ring and screw on connector cap (20).
6	Place plastic sealing plug into empty position in rear seal (21).

20 Connector cap  
21 Sealing plug

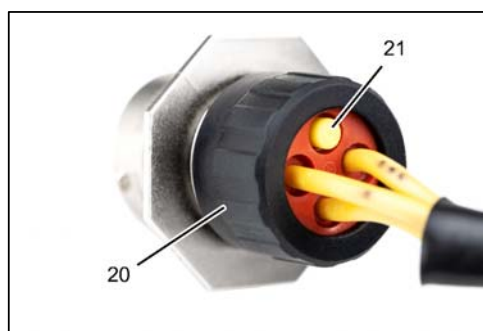


Fig. 9

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## 3.3.2) Replacement of female connector (Stator side)

In order to preserve maximum wire length, remove the wires with crimped female pins from Stator B connector housing (gray).

Step	Procedure
1	Label each of the 3 yellow wires with its location within the connector. The rear of the connector housing is marked with numbers (1).
2	Gently pry the rectangular rubber seal (2) from the rear of the connector.

1 Connector housing with numbers  
2 Rubber seal

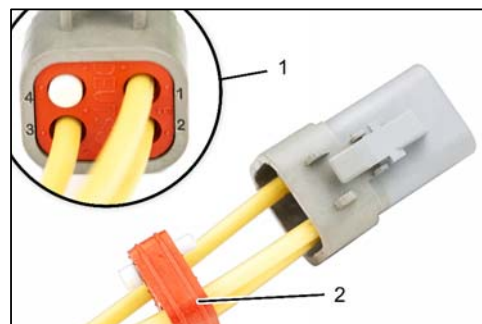


Fig. 10

Step	Procedure
3	Using fine-nosed pliers, pull the retaining wedge (3) from the connector housing.
4	Remove pins from connector housing by releasing plastic retaining tabs (4) and pulling wires from behind.

3 Retaining wedge  
4 Retaining tab

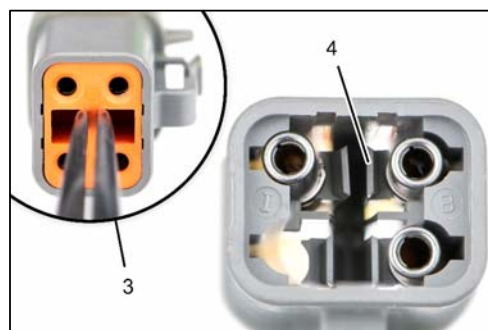


Fig. 11

Step	Procedure
5	Cut each wire at crimped pins (5).
6	Ensure that wires are still clearly numbered and pull rectangular rubber seal (6) from the wires.

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- 5 Cut off pins
- 6 Rubber seal

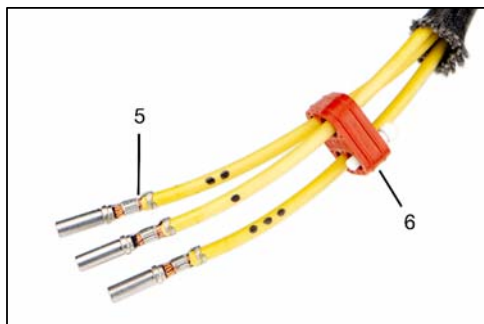


Fig. 12

### Attach Amphenol® female connector to Stator B

The following instructions depict the use of DMC® adjustable crimp tools. These tools or equivalent are required to correctly attach connecting pins.

**⚠ WARNING**

Failure to use correct crimping tool(s) may lead to engine damage, personal injury or death.

Step	Procedure
1	Carefully strip back approximately 10 mm (0.390 in.) of insulation from each of the three yellow wires (7). NOTE: Use a quality wire-stripping tool set to 12 AWG (0.0 mm <sup>2</sup> ) to avoid damaging wire strands.
2	Set the crimp tool's wire size to 12 AWG (0.0 mm <sup>2</sup> ) (8).
3	Stripped wires must seat fully into crimp pin and have approximately 1 mm (0.039 in.) gap to insulation (9).

- 7 10 mm (0.390 in.)
- 8 12 AWG
- 9 1 mm (0.039 in.)

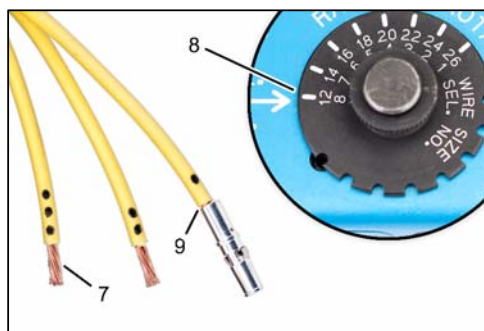


Fig. 13

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Step	Procedure
4	Place the connector pin into crimp tool with crimp-barrel facing outwards. Adjust positioner until crimp-barrel is flush with the tool (10).
5	Place stripped wire fully into crimp-barrel and hold in place while crimp tool is compressed by hand until fully closed. NOTE: Crimp tool incorporates a ratcheting mechanism that requires the crimp tool to be fully closed before releasing.

10 Flush

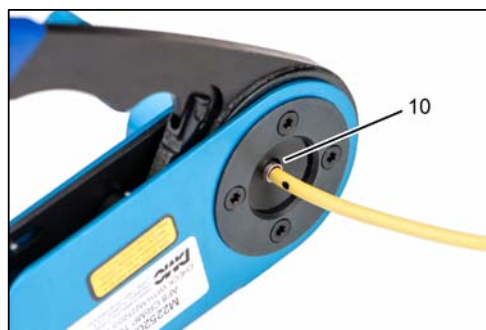


Fig. 14

Step	Procedure
6	Remove the wire and crimped connector pin from crimp tool and inspect for correct crimping. NOTE: Wire strands must be visible in witness hole (11) and crimps must be between the witness hole and the end of the crimp-barrel (12).

11 Witness hole  
 12 Crimps

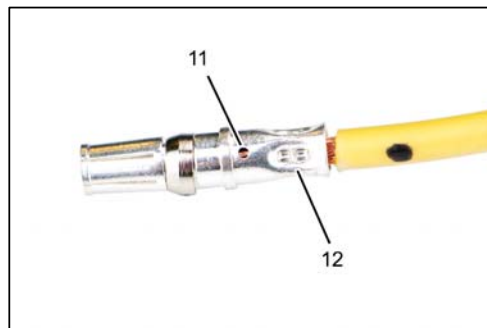


Fig. 15

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# SERVICE INSTRUCTION

## Assembly of the connector housing Amphenol® part no. 864590

Step	Procedure
1	Place rear connector screw cap over wires (13).
2	Push connector pins and wires through round rubber seal (14). NOTE: New connector positions are marked A through D (15), whereas the gray housing was marked 1 through 4.

Place numbered wires in the following alphabetical positions:

Wire	Connector position
1	A
2	B
3	C

Step	Procedure
3	Place plastic sleeve over wires with key slot (16) towards connector.

- 13 Screw cap
- 14 Rubber seal
- 15 Position letters
- 16 Key slot

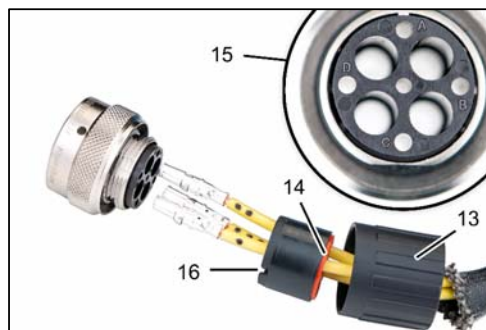


Fig. 16

Step	Procedure
4	Push each wire into connector until its pin snaps securely in place. NOTE: Correctly secured pins will travel further into connector (18) and lock in place. Removal requires using extractor tool.

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17 Example for secured pin  
18 Example for un-secured pin



Fig. 17

Step	Procedure
5	With all connector pins secured, place the plastic ring into the connector housing, while aligning the keyway.
6	Push the rubber seal into the plastic ring and screw on connector cap (20).
7	Place plastic sealing plug into empty position in rear seal (21).

19 Cap  
20 Plug

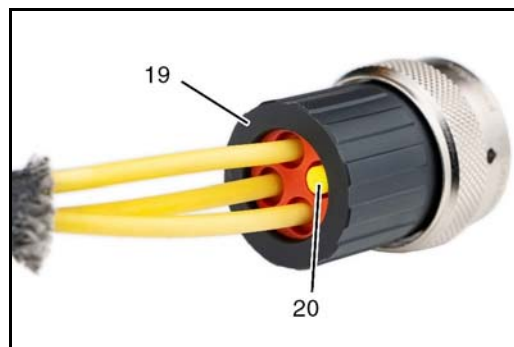


Fig. 18

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### 3.3.3) Installation of optional support bracket

See Fig. 18 and Fig. 19.

Step	Procedure
1	Remove M6 lock nut (1) and washer (2). Remove connector bracket assy. (3) from the fuse-box connector side of regulator B.
2	Place bracket (4) over attachment stud so that bend faces away from the fuse-box.
3	Attach with M6 washer and new M6 lock nut. Tightening torque 10 Nm (89 in.lb).

- 1 Lock nut M6
- 2 Washer 6.4
- 3 Connector bracket assy.
- 4 Connector bracket part no. 951981

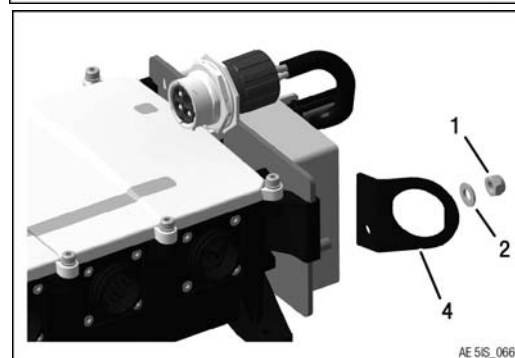
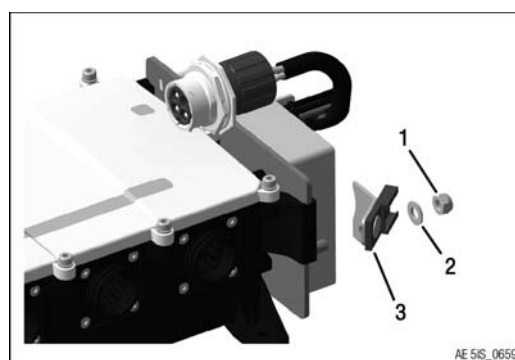


Fig. 19

Step	Procedure
4	Remove nut and O-ring from Rectifier B connector. NOTE: O-ring is not necessary in this application and may be discarded.
5	Place connector through connector bracket (4).
6	Attach with connector nut (5). Tightening torque 10 Nm (89 in.lb).

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- 4 Connector bracket
- 5 Connector nut

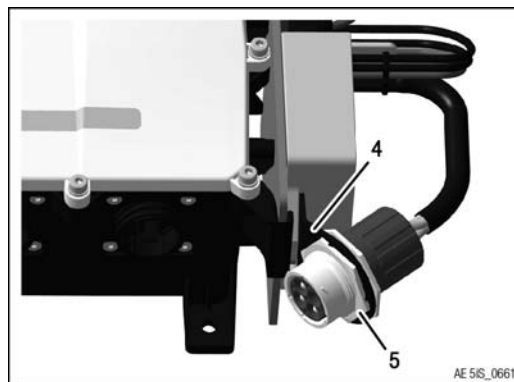


Fig. 20

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

### 3.4) Test run



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

### 3.5) Summary

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

The execution of the Service Instruction 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.

### 3.6) Inquiries

Inquiries regarding this Service Instruction 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).

# SERVICE INSTRUCTION

## 4) Appendix

The following drawings should convey additional information:

1 Connector set stator Lane B

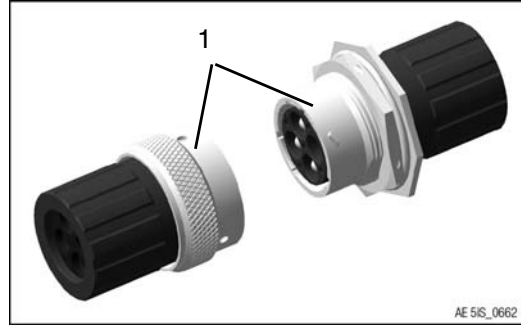


Fig. 21

2 Connector bracket

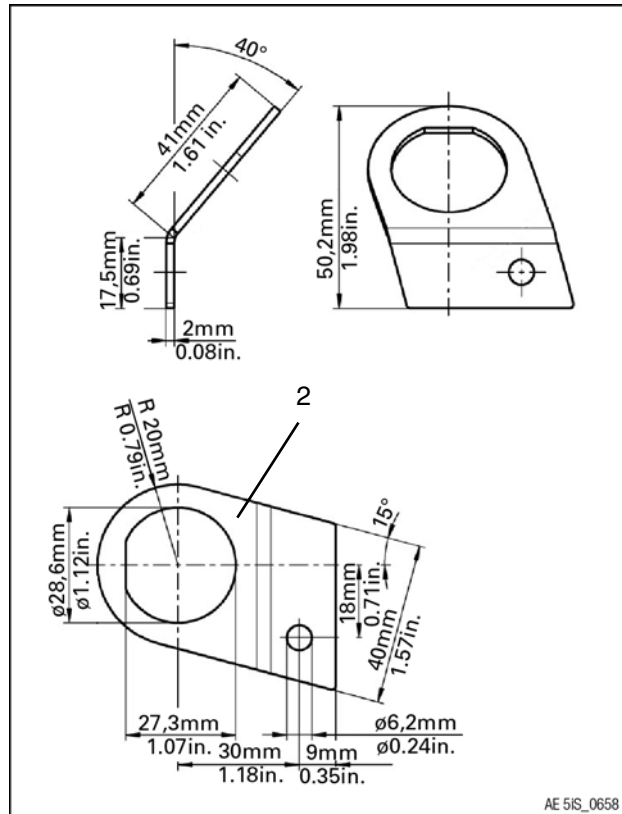


Fig. 22

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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