

Fuel pump for ROTAX® engine type 912 iSc/iS Sport (Series)

ATA System: 73-10-00 Fuel pump assy.

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 (Series)	Serial number
912 iSc Sport	all
912 iS Sport	all

1.2) Concurrent ASB/SB/SI and SL

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

- 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 tasks.

1.3) Reason

Introduction of new GENUINE ROTAX® fuel pump including installation and maintenance information.

1.4) Subject

Fuel pump for ROTAX® engine type 912 iSc/iS Sport (Series).

1.5) Compliance

None – for information only.

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.

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1.8) Mass data

Weight - - - Single pump (part no. 889731) 0.7 kg (1.54 lbs.)

Moment of inertia - - - unaffected.

1.9) Electrical load data

See section 3.2.

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 73-10-00 and 76-10-00
- In general, Installation Manual (IM) and in particular:
Chapters 73-10-00 and 76-00-00
- In general, Maintenance Manual Line (MML) and in particular:
Chapter 05-20-00
- In general, Maintenance Manual Heavy (MMH) and in particular:
Chapters 73-10-00 and 76-00-00
- In general, Operators Manual (OM) and in particular:
Chapters 2.3 and 3
- In general, Aircraft's Pilot Operating Handbook (POH)

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

No interchangeable.

See Chapter [3.2](#) Installation, for additional information.

SERVICE INSTRUCTION

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 requirements:

Fig. no.	Part no.	Qty / engine	Description	Application
1	889732*	1	Fuel pump - packaged	912 iSc/iS Sport (Series)
Consists of:				
	889731	1	Fuel pump	912 iSc/iS Sport (Series)

*NOTE: Each engine requires two units of 889732.

- 1) Fuel pump part no.
889731
- 2) Part number location
- 3) Serial number location

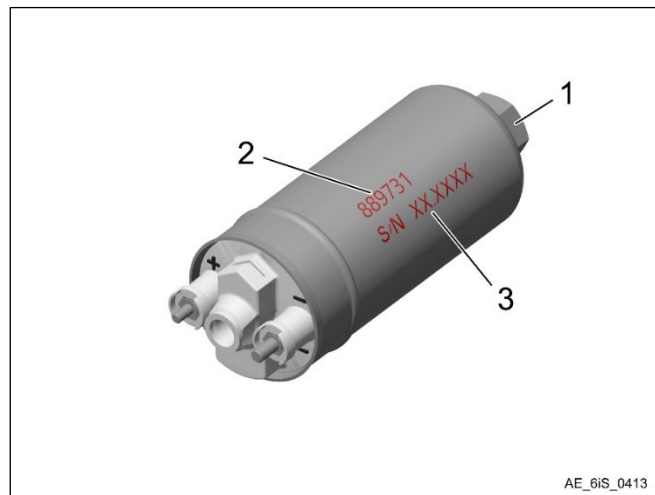


Fig. 1
Fuel pump part no. 889731

2.4) Material requirement per spare part

None.

2.5) Rework of parts

None.

SERVICE INSTRUCTION

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

Part no.	Description	Qty / engine	Application
n.a	CRC® Leak Detector (14503)* Non-flammable water-based formula. No oils, silicones or harmful solvents	-	Fuel pump service. Connection leak detection
n.a	BERNER® Leak Finder (148383)* Water based formula, non-corrosive, silicone free.	-	Fuel pump service. Connection leak detection

* or equivalent

NOTE: There are many third-party commercial leak detection products available. Ensure that the leak detection solution used is non-corrosive and does not contain harmful solvents.

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® - 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



All work must 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 from FAA.

Advisory Circular

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

Step	Procedure
1	Check the criteria given on page 1, section 1.1, if the aircraft engine is affected by this SI.
2	Check the engine logbook and maintenance documentation if this SI has already been accomplished.

3.1) Illustrated Parts Catalog – related information



See current Illustrated Parts Catalog (IPC) for the respective engine type, Chapters 73-10-00 and 76-10-00

SERVICE INSTRUCTION

3.2) Installation – related information



See current Installation Manual (IM) for the respective engine type for detailed fuel system requirements, Chapter 73-00-00 Engine – Fuel and control.

The electrical fuel pumps must be installed in a well-ventilated area, near the fuel tank and away from potential sources of heat to ensure a safe fuel supply and minimize the risk of vapor lock. Ambient temperature of fuel pumps must not exceed 80 °C (176 °F).

NOTE: The GENUINE-ROTAX® fuel pumps have been tested and approved according to CS-E-130. Thus, the fuel pump can be installed on the firewall without additional fire protection. A fuel pump housing is not available for the fuel pumps.

NOTICE

Do not connect additional load (additional fuel pumps, lamps, LED, etc.) to the power supply of the fuel pumps. The wiring is manufactured for GENUINE-ROTAX® fuel pumps only.

Fuel pump technical information	
Nominal Voltage (V)	13.8 V
Current consumption (A) Single pump	5.8 A
Current consumption (A) Both pumps	7.8 A
Fuel flow (up to dual operation)	255 l/h (67.4 gal/h)
Weight (single pump)	709 g (25.0 oz)
Fuel quality	See current Service Instruction -Selection of suitable operating fluids for the respective engine type
Fuel pressure (sensor position at fuel pressure regulator)	3.2 bar to 2.8 bar (46 psi - 40 psi relative to manifold pressure)

NOTICE

The fuel pressure may increase up to 3.5 bar (51 psi) for max. 3 sec. This presents no technical issue.

WARNING

Non-compliance can result in serious injuries or death! Independent from the ambient conditions (e.g. fuel pressure and temperature) and independent from the fuel used the design of the fuel system must prevent vapor lock conditions. Vapor lock may result in engine stoppage.

NOTICE

Ambient temperature of fuel pumps must not exceed 80 °C (176 °F).

SERVICE INSTRUCTION

3.2.1) Fuel pump power connection - Installation



For installation and optional parts, see current SI-PAC-026.

3.2.2) Fuel pump assy. - Installation

Fuel pump part kit part no. 481481 contains an AN6 check valve and AN6 fuel pump adaptor. This allows flexible connection of fuel pumps and check valves in series configuration using readily available AN fittings. It is highly recommended to use the check valve provided within the fuel pump kit to ensure functionality of the pumps.

Step	Procedure
1	Connect both fuel pumps with check valves in series configuration.



See current Installation Manual (IM) for the respective engine type, Chapter 73-00-00 Engine - Fuel and Control for fuel system diagram.

	Tightening torque
Adaptor AN6 /M14x1.5	30 Nm (22 ft. lb)
Adaptor AN6 /M10x1	15 Nm (133 in. lb)

NOTICE

These are the maximum torques that the threads in the pump body can hold.

Step	Procedure
2	Before attaching fuel pump assy. to the aircraft, perform a leak check. See section 3.2.3).

The figures 2 - 4 show sample installations using parts kit part no. 481481 or 481483 and AN6 fittings.

NOTE: Assemble with clean parts only in a clean environment!

NOTE: See AN fitting manufacturer for suggested tightening torque values.

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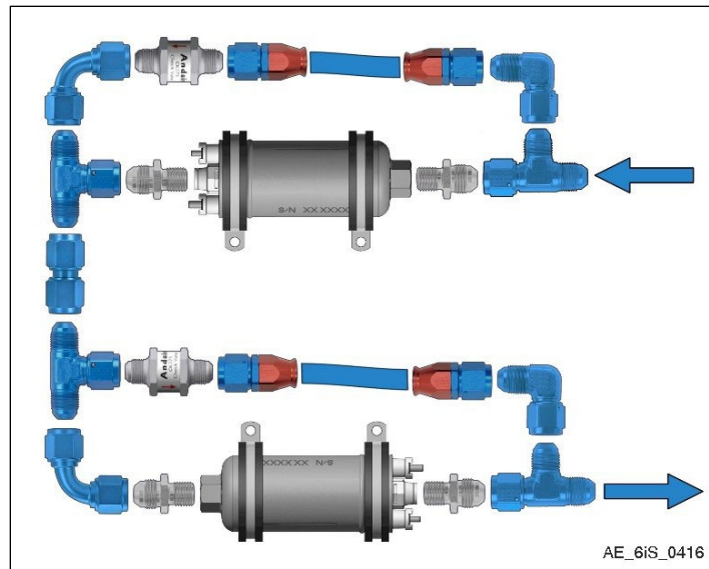


Fig. 2
Sample installation

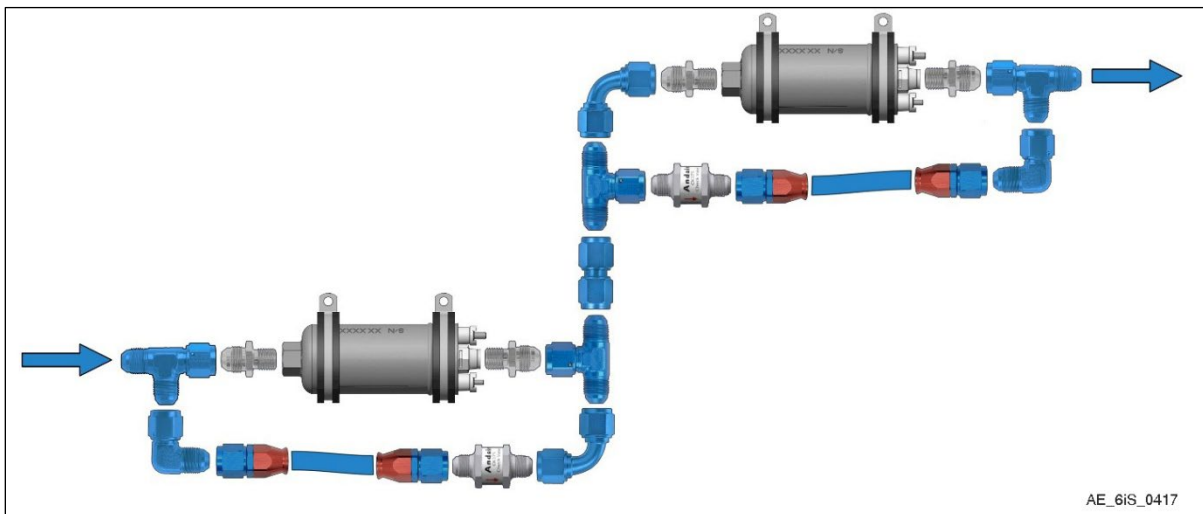


Fig. 3
Sample installation

SERVICE INSTRUCTION

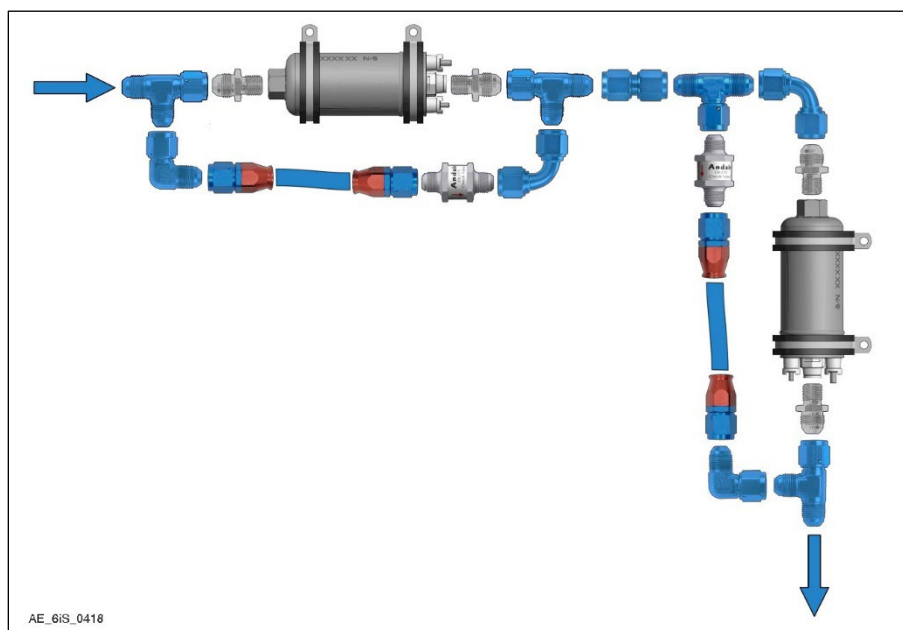


Fig. 4
Sample installation

Step	Procedure
3	Attach the fuel pumps securely to an appropriate mounting surface using cable clamps.
4	Connect fuel pump power connectors (MAIN/AUX) into appropriate wiring harness connector(s).



See current Installation Manual (IM) for engine type 912 i Series, Chapter 73-00-00 Engine – Requirements of the fuel system, such as:

- Inlet and return fuel lines
- Bypass line
- Coarse and fine fuel filters
- Water separator / gascolator
- Fuel pressure sensor
- Fuel tank

NOTE: The hydraulic diagram shown in the current Installation Manual (IM) for the respective engine type must be complied with.

NOTE: A Bypass line must be installed according to the current Installation Manual (IM) for the respective engine type with a restriction jet, see latest SI-PAC-026.

SERVICE INSTRUCTION

3.2.3) Fuel pump assembly - Leakage check

After assembly of modular fuel pump assembly, it must be checked for leaks at each connection point before installation in the aircraft.

NOTICE

For this leakage check disconnect electrical connectors to MAIN and AUX fuel pump.

Step	Procedure
1	Block the OUTLET of the fuel pump assembly with suitable pressure cap (e.g. AN929-6).
2	Connect the INLET of the fuel pump assembly to a differential pressure gauge.
3	Apply operating fuel pressure to the fuel pump assy.
4	NO pressure loss is allowed on the differential pressure gauge.
5	With the fuel pump assy. temporarily pressurized with air, use an appropriate leak detector solution at each fitting connection to verify proper sealing.
6	If any air bubbles are present at connections, re-seat or replace connector.

NOTICE

Do not switch on either of the pumps during the leakage check. This could lead to destruction of one of the pump bodies.

NOTICE

Follow leak detector solution manufacturer's instructions for its use, clean up and safety information.

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NOTICE

Make sure not to mix up IN (Fuel IN) and OUT (Fuel OUT) of fuel pump assembly in the following tasks.

- 1) Compressor
- 2) Manometer/Test gauge set
- 3) Cap on "Outlet"

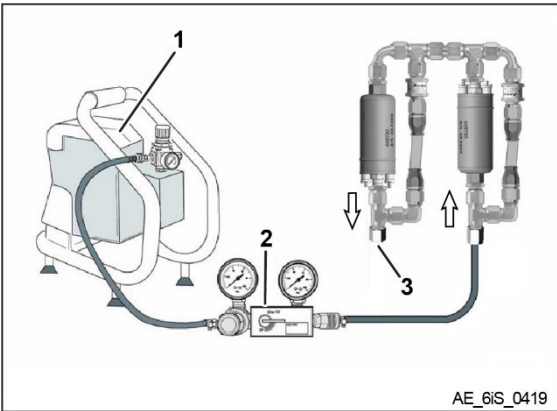


Fig. 6
Leakage test

Step	Procedure
7	Clean up leak detection fluid and dispose of in an environmentally friendly way.

3.3) Operation – related information



See current Operators Manual (OM) for the respective engine type.

3.4) Maintenance (Line) – related information

Points of inspection	Interval Operating Hours		Chapter Reference
	100 h	200 h	
Inspect the fuel pumps. - Visual inspection of lines and connections - Check for leaks - Check for corrosion		X	See current Maintenance Manual Line (MML) for the respective engine type and its periodical maintenance information.

NOTICE

Avoid over-tightening the fastening elements. Use a suitable torque wrench for all work.



See current Maintenance Manual Line (MML) for the respective engine type, Chapter 05-20-00 Scheduled maintenance checks.

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3.5) Storage period

The maximum storage period for the fuel pump part no. 889731 is limited to 4 years from the date of production in following storage environment: - 30°C / + 60°C, humidity < 60%, protected from atmospheric influence.

3.6) Time limit

Fuel pump part no. 889731 must be replaced every 5000 hours of operation or 15 years from the date of production, whichever comes first.

3.7) Maintenance (Heavy) – related information

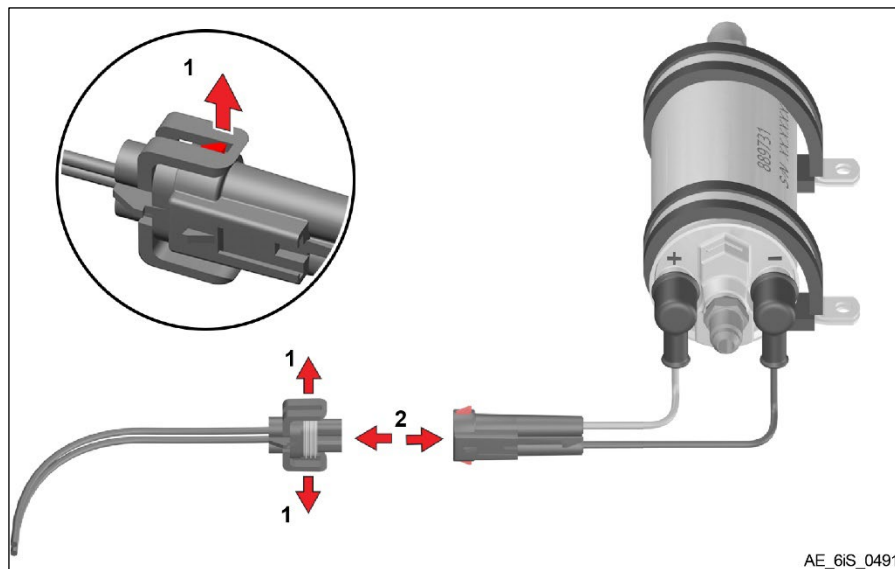
3.7.1) Fuel pump assy. – Removal

It is recommended to perform any fuel pump assy. maintenance on an assy. that has been removed from the aircraft.



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

Step	Procedure
1	Remove the negative terminal of the battery.
2	Disconnect the fuel inlet and outlet hoses.
3	Disconnect the fuel pump power connectors from the wiring harness connectors. (MAIN / AUX): - Lift the latches (1) - Pull the connectors apart (2)
4	Remove the fuel pump assy. from the aircraft according to the aircraft manufacturer's instructions.



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Fig. 7

Fuel pump power connectors

SERVICE INSTRUCTION

3.8) Finishing work

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

3.9) Test run

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



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

3.10) 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.

3.11) Inquiries

Inquiries regarding this Service Instruction should be sent to the ROTAX® Authorized Distributor of your area.

A list of all ROTAX® Authorized Distributors and their independent Service Centers is provided on <https://dealerlocator.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.