Optional oil system parts for ROTAX® Aircraft Engines

ATA System: 79-00-00 Lubrication system

1) Planning information

"PAC" Service Instruction Documents provide detailed information on ROTAX® Aircraft Engine Parts and Accessories. Depending on the engine type used with referenced parts and accessories may be provided with or without EASA certification or ASTM compliance. Certification / Compliance of referenced Parts and Accessories must in such cases be completed by the aircraft OEM.

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

Refer to the latest issue of the relevant Illustrated Parts Catalog of your specific engine type.

NOTICE

The optional oil system parts may be declared as part of the oil system on aircraft-side and so might not be a part of the Engine Type Design. Such a PAC part has been then tested and released by BRP-Rotax, but it might not be certified for the relevant engine type.
In such a case the correct function in conjunction with the entire system is the responsibility of the aircraft manufacturer and must be carried out jointly with the aircraft.

1.2) Concurrent ASB/SB/SI and SL

In addition to this Service Instruction - PAC the following SI-PAC should be considered:
SI-PAC-014, title "Oil radiator/-sets", current issue.

1.3) Reason

In the course of continuous development and standardization, optional oil system parts have been introduced as an optional extra part.

1.4) Subject

Optional oil system parts for ROTAX® Aircraft Engines.

1.5) Compliance

None - For Information Only.

1.6) Approval

None.

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.

d06793.fm

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

- Operators Manual (OM)
- 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 that 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 replacement parts within the same size are interchangeable without limitation with the current equivalent part of the same size. See also the requirements for installation and maintenance in Chapter 3.

2) Material Information

2.1) Material- cost and availability

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

CONNECTORS FOR OIL RADIATOR:

Fig.1 / pos.	Part no.	Qty/ engine	Description
2	242873	4	Hex. nut M22x1.5
3	230387	2	Gasket ring 14.2/18/2
4	840461	2	Nipple 13.2/9.5 - M14x1.5
5	956577	2	Adapter M18x1.5/M14x1.5
6	956580	AR	Bent socket assy.
7	924585	AR	Angular tube M14x1.5
8	956610	AR	Hose nipple with union nut
9	956643	2	Adapter 3/4-16 UNF (AN 8) / M14.5
10	956572	2	Adapter M22X1.5 / M14X1.5
11	956648	2	Adapter 7/8-14 UNF (AN 10) / M14X1.5
12	956685	2	Adapter M22X1.5 / M22X1.5
13	956680	2	Adapter 7/8-14 UNF (AN 10) / M22X1.5
14	250735	2	Gasket ring A 14x20

CONNECTORS FOR OIL TANK METRIC*:

Fig.2 / pos.	Part no.	Qty/ engine	Description
1	956610	AR	Hose nipple with union nut
2	956580	AR	Bent socket
3	951826	AR	Hose clamp

* only applicable for oil tank and oil tank covers with M18x1.5 connectors.

HOSE FOR OIL SYSTEM:

Part no.	Qty/ engine	Description
956394	AR	Oil tube M4M-2 12X19

d06793.fm

2.4) Material requirement per spare part

None.

2.5) Rework of parts

None.

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

None.

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 Authority
- Persons with approved qualifications for the corresponding engine types. Only authorized persons (iRMT, Level Heavy Maintenance) are entitled to carry out this work

General All general inspection, maintenance and repair has to be carried out e.g. in accordance with relevant Advisory Circular AC 43.13 from FAA.

Advisory Circular This Manual "Advisory Circular" AC describes maintenance methods, techniques and practice. These are recognized and authorized for inspection and repairs in non-pressurized areas for which there are no separate maintenance and repair instructions.

Safety notice

- Secure aircraft against unauthorized operation
- Disconnect negative terminal of aircraft battery

3.1) Spare Parts - related information

VARIANTS OF CONNECTORS

See relevant Illustrated Parts Catalog (IPC) for the respective engine type, Chapter 79-20-00.

OIL RADIATOR CONNECTORS

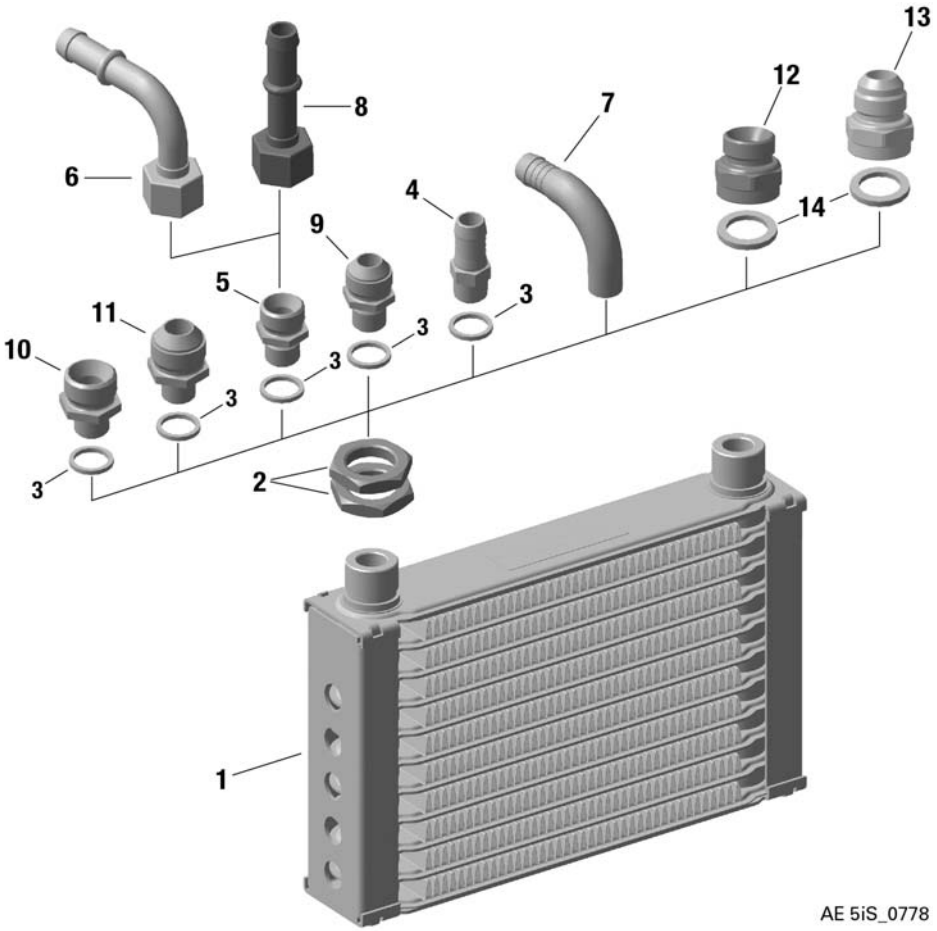

Fig. 1

1	Oil radiator	2	Hex. nut M22x1.5
3	Gasket ring 14.2/18/2	4	Nipple 13.2/9.5
5	Adapter M18x1.5/M14x1.5	6	Bent socket assy.
7	Angular tube M14x1.5	8	Hose nipple with union nut
9	Adapter 3/4-16 UNF (AN 8) / M14x1.5	10	Adapter M22X1.5 / M14X1.5
11	Adapter 7/8-14 UNF (AN 10) / M14X1.5	12	Adapter M22X1.5 / M22X1.5
13	Adapter 7/8-14 UNF / M22X1.5	14	Gasket ring A 14x20

d06793.fm

OIL TANK CONNECTORS (for oil tank cover assy. metric)

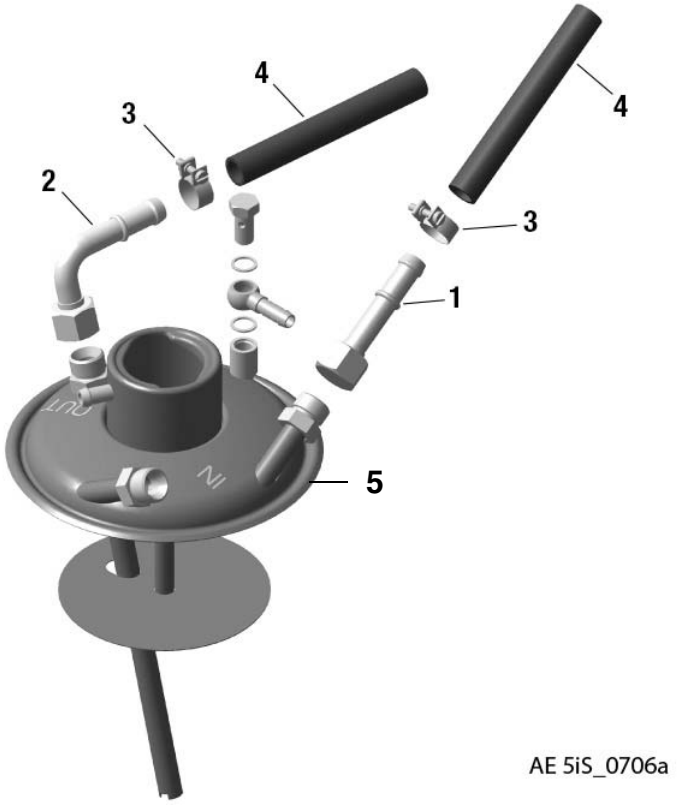

Fig. 2

1	Hose nipple with union nut	2	Bent socket
3	Hose clamp	4	Oil tube M4M-2 12X19
5	Oil tank cover assy. metric		

d06793.fm

3.2) Operation - related information

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

3.3) Installation - related information

See relevant Installation Manual (IM) for the respective engine type.

3.4) Maintenance (Line) - related information

Points of inspection	Interval Operating hours	Chapter Reference
	100 h	
Visual inspection of the oil system parts (for cracks, leaks, damages, kinks, secure fit and signs of wear)	x	See relevant Maintenance Manual (Line) for the respective engine type and its periodical maintenance information.

3.5) Maintenance (Heavy) - related information

3.5.1) Removal of the oil system connectors

Preparation

- Switch the ignition key OFF
- Drain the oil

NOTICE

The oil hoses, oil radiators and its connectors are not included in the delivery of the engine. Maintenance must be carried out in accordance with the aircraft manufacturer's instructions.

ENVIRONMENTAL NOTE

All the operating fluids and cleaning agents can damage the environment if not disposed of properly. Dispose of operating fluids in an eco-friendly manner!

NOTICE

Use appropriate protective coverings to prevent the ingress of debris particles into all disconnected lines and connections.

d06793.fm

- Remove surrounding assemblies and detach oil hoses

NOTE: The assemblies and lines are only to be removed if necessary and only as far as is necessary!

Step	Procedure
1	Remove the oil hoses and clamps according to the instructions in the aircraft manufacturer's manual.
2	Remove the oil system connectors as required (cause of damage etc.).

ENVIRONMENTAL NOTE

Ensure that no oil gets into the waste water system or the ground – risk of contaminating drinking water!

3.5.2) Oil system connectors - Inspection

Preparation

- Clean all parts carefully
- General visual inspection

General visual inspection. See Chapter 05-20-00 of the latest Maintenance Manual Line (MML) for the respective engine type.

3.5.3) Oil system connectors - Installation

NOTICE Use backup wrench to counter-hold screw sockets when securing the oil lines.

Step	Procedure
1	Install oil system connectors and tight up to the specific torque given in the following table.
2	Install the oil hoses and clamps according to the instructions in the aircraft manufacturer's Manual.

Finishing work:

- Fill with fresh oil according to the latest Maintenance Manual Line (MML)
- Purge the oil system according to the latest Maintenance Manual Line (MML)
- Restore aircraft to original operating configuration
- Connect negative terminal of aircraft battery

Conduct test run and perform leakage check. See Chapter 12-20-00 of the latest Maintenance Manual Line (MML) for the respective engine type.

CONNECTORS TIGHTENING TORQUE:

	Thread/ Outer dia.	Slip-on length	Tightening torque of connectors	Tightening torque of hose-end fittings
UNF screw sockets	3/4-16 UNF AN 8		22 Nm (16.23 ft.lb.) + LOCTITE 648	25 Nm (18.44 ft.lb.)
	7/8-14 UNF AN 10		22 Nm (16.23 ft.lb.) + LOCTITE 648	25 Nm (18.44 ft.lb.)
Nipple 13.2/9.5	13.2 mm (0.52 in.)	max. 21 mm (0.83 in.)	22 Nm (16.23 ft.lb.) + LOCTITE 243	
Metric screw sockets	M18x1.5		22 Nm (16.23 ft.lb.) + LOCTITE 648	25 Nm (18.44 ft.lb.)
	M22x1.5		22 Nm (16.23 ft.lb.) + LOCTITE 648	25 Nm (18.44 ft.lb.)
Angular tube (90° Angular socket)	13.2 mm (0.52 in.)	max. 21 mm (0.83 in.)	22 Nm (16.23 ft.lb.) + LOCTITE 648	
Bent socket (90° Bent socket)	12 mm (0.47 in.)	max. 24 mm (0.94 in.)	25 Nm (18.44 ft.lb.)	
Hose nipple with cap nut (straight nipple)	12 mm (0.47 in.)	max. 24 mm (0.94 in.)	25 Nm (18.44 ft.lb.)	

3.6) Test run

In case of uninstalled engines test run can be skipped as this is covered by the mandatory test run after installation.

Conduct test run and perform leakage check. See Chapter 12-20-00 of the latest Maintenance Manual Line (MML) for the respective engine type.

3.7) Summary

The execution of the Service Instruction - PAC must be confirmed in the logbook.

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 Instruction - PAC 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.

d06793.fm