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TOA) Table of amendments

Approval*

The technical content of this document is approved
under the authority DOA No. EASA.21J.048.

Current no.	chapter	page	date of change	remark for approval	date of approval from authorities	date of issue	signature
0	1 to 9	all	04 01 2010	DOA*			
1	LEP	LEP-1	04 01 2011	DOA*			
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			02 01 2015	DOA*			

NOTES

TOA) Summary of changes

Content

Summary of the relevant amendments in this context, but makes no claim to completeness.

current no.	chapter	page	date of change	comment
0	1 up to 9	all	04 01 2010	New layout
1	2	2-4	04 01 2011	Engine start operating temperature description
		2-7	04 01 2011	Operating fluids - definition
1	9	9-6,7,8	04 01 2011	Overview of authorized distributor
2	1	1-5	02 01 2015	Warning: change of text
	1	1-11	02 01 2015	change of Type description
2	2	2-4, 2-6	02 01 2015	Suffix -01 added
		2-8	02 01 2015	change of text
2	3	3-10	02 01 2015	change of text
2	4	4-1, 4-6	02 01 2015	Additional text: Exceeding of max. admissible coolant temperature
2	9	9-5, 9-6 up to 9-8	02 01 2015	change of text
			02 01 2015	change of text

NOTES

1.4) Safety notice

Normal use



Non-compliance can result in serious injuries or death!

Never fly the aircraft equipped with this engine at locations, airspeeds, altitudes, or other circumstances from which a successful no-power landing cannot be made, after sudden engine stoppage.

- This engine is not suitable for acrobatics (inverted flight etc.).
- This engine shall not be used on rotorcrafts with an in-flight driven rotor (e.g. helicopters).
- It should be clearly understood that the choice, selection and use of this particular engine on any aircraft is at the sole discretion and responsibility of the aircraft manufacturer, assembler and owner/user.
- Due to the varying designs, equipment and types of aircraft, BRP-Powertrain grants no warranty or representation on the suitability of its engine's use on any particular aircraft. Further, BRP-Powertrain grants no warranty or representation of this engine's suitability with any other part, components or system which may be selected by the aircraft manufacturer, assembler or user for aircraft application.



Non-compliance can result in serious injuries or death!

For each use of DAY VFR, NIGHT VFR or IFR in an aircraft the applicable legal requirements and other existing must be adhered to.

- Certain areas, altitudes and conditions present greater risk than others. The engine may require humidity or dust/sand preventative equipment, or additional maintenance may be required.
- You should be aware that any engine may seize or stall at any time. This could lead to a crash landing and possible severe injury or death. For this reason, we recommend strict compliance with the maintenance and operation and any additional information which may be given to you by your distributor.

Training	<ul style="list-style-type: none"> - Whether you are a qualified pilot or a novice, complete knowledge of the aircraft, its controls and operation is mandatory before venturing solo. Flying any type of aircraft involves a certain amount of risk. Be informed and prepared for any situation or hazard associated with flying. - A recognized training program and continued education for piloting an aircraft is absolutely necessary for all aircraft pilots. Make sure you also obtain as much information as possible about your aircraft, its maintenance and operation from your dealer. <hr/>
Regulation	<ul style="list-style-type: none"> - Respect all government or local rules pertaining to flight operation in your flying area. Fly only when and where conditions, topography, and airspeeds are safest. - Consult your aircraft dealer or manufacturer and obtain the necessary information, especially before flying in new areas. <hr/>
Instrumentation	<ul style="list-style-type: none"> - Select and use proper aircraft instrumentation. This instrumentation is not included with the ROTAX engine package. Only approved instrumentation may be installed. <hr/>
Engine log book	<ul style="list-style-type: none"> - Keep an engine log book and respect engine and aircraft maintenance schedules. Keep the engine in top operating condition at all times. Do not operate any aircraft which is not properly maintained or has engine operating irregularities which have not been corrected. <hr/>
Maintenance	<ul style="list-style-type: none"> - Before flight, ensure that all engine controls are operative. Make sure all controls can be easily reached in case of an emergency. - Since special tools and equipment may be required, engine servicing should only be performed by an authorized ROTAX engine distributor or a qualified trained mechanic approved by the local airworthiness authority. - When in storage protect the engine and fuel system from contamination and exposure. <hr/>

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Engine run

- Never operate the engine without sufficient quantities of operating fluids (oil, coolant, fuel).
 - Never exceed the maximum permitted operational limits.
 - In the interest of safety, the aircraft must not be left unattended while the engine is running.
 - To eliminate possible injury or damage, ensure any loose equipment or tools are properly secured before starting the engine.
 - Allow the engine to cool at idle for several minutes before turning off the engine.
-

Vacuum pump

- This engine may be equipped with a vacuum pump. The safety warning accompanying the vacuum pump must be given to the owner/operator of the aircraft into which the vacuum pump is installed.
-

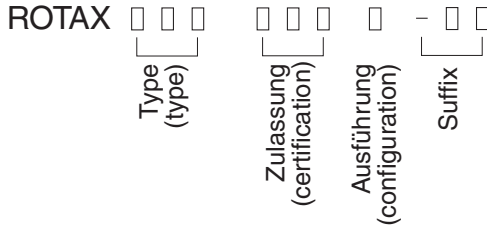
1.5) Technical documentation

General note	<p>These documents form the instructions for continued airworthiness of ROTAX aircraft engines.</p> <p>The information given is based on data and experience that are considered applicable for professionals under normal conditions. The fast technical progress and variations of installation might render present laws and regulations inapplicable or inadequate.</p> <hr/>
Documentation	<ul style="list-style-type: none">- Installation Manual- Operators Manual- Maintenance Manual (Line and Heavy Maintenance)- Overhaul Manual- Illustrated Parts Catalog- Alert Service Bulletins- Service Bulletins- Service Instructions- Service Letters  <hr/>
Status	<p>The status of Manuals can be determined by checking the table of amendments of the Manual. The 1st column of this table is the revision status.</p> <p>Compare this number to that listed on the ROTAX WebSite: www.FLYROTAX.com.</p> <p>Updates and current revisions can be downloaded for free.</p> <hr/>
Revision pages	<p>Further the Manual is in such a way developed that revision pages are offered and the entire document does not have to be exchanged. The overview of the valid pages are in the Chapter LEP. The current edition and revision is shown in the foot note.</p> <hr/>
Reference	<p>Any reference to a document refers to the latest edition issued by BRP-Powertrain if not stated otherwise.</p> <hr/>

1.7) Type description

e.g. 914 F 2 -01

The type designation is of the following composition.

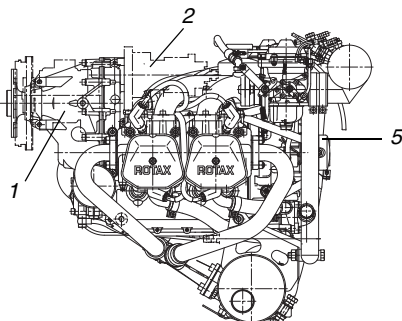


Description

Description		Configuration
Type:	914	4-cyl. horizontally opposed, turbo-charged engine
Certification:	F	certified to FAR 33 (TC No. E00058 NE) JAR-E (TC No. EASA.E.122)
	UL	non-certified aircraft engines
Configuration:	2	Prop shaft with flange for fixed pitch propeller.
	3	Prop shaft with flange for constant speed propeller and drive for hydraulic governor for constant speed propeller.
	4	Prop flange for fixed pitch propeller and prepared for retrofit of a hydraulic governor for constant speed propeller.
Suffix	-XX	Explanation of the type designation Suffix, see SB-914-049.

1.8) Denomination of cylinders, Engine views, components

Lateral view

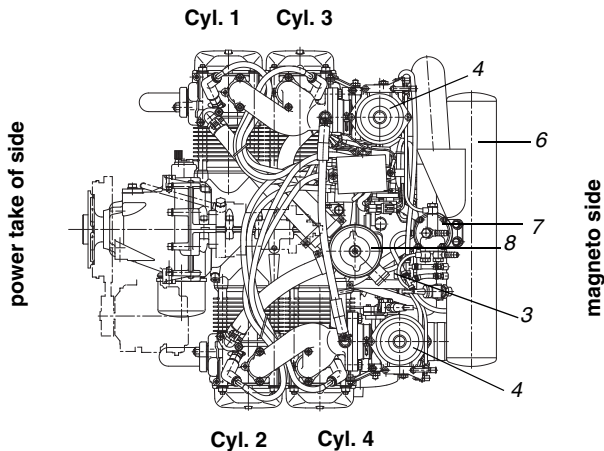


Part	Function
1	propeller gear box
2	vacuum pump or hydraulic governor for constant speed propeller

Fig. 2

03644

Top view



Part	Function
3	engine serial number
4	CD carburetor
5	electric starter
6	intake air distributor "Airbox"
7	fuel pressure control
8	expansion tank with excess pressure valve

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2) Operating instructions

Introduction

The data of the certified engines are based on type certificate of type 914 F FAR 33 (TC No. E00058NE), JAR-E (TC No. EASA.E.122).

Table of contents

This chapter of the Operators Manual contains the operating limits that must be observed to ensure the ROTAX aircraft engine and standard systems operate safely.

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2.1) Operating limits

Performance

Performance data relate to ISA (International Standard Atmosphere) conditions without Governor, external alternator etc.

Take-off performance	84.5 kW at 5800 rpm
Max. continuous performance	73.5 kW at 5500 rpm

Manifold pressure

Take-off performance	1300 hPa (38.4 in.HG)
	*1320 hPa (39.0 in.HG)
Max. continuous performance	1150 hPa (34.0 in.HG)
	*1180 hPa (34.9 in.HG)
*914 F starting with engine S/N 4,420.200 (TCU part no. 966741)	
*914 UL starting with engine S/N 4,417.598 (TCU part no. 966471)	

NOTE: The stated pressure in the suction tube is always lower by the pressure loss in the carburetors than the TCU controlled airbox pressure and may be therefore subject bigger deviations.

Speed

Take-off speed	5800 rpm (max. 5 min)
Max. continuous speed	5500 rpm
Idle speed	min. 1400 rpm

Manifold pressure

NOTICE

Due to the control behavior an overshooting of the manifold pressure is possible. But within 2 seconds this pressure has to stabilize within the allowance.

Take-off performance	max. 1350 hPa (39.9 in.HG)
Max. continuous performance	max. 1200 hPa (35.4 in.HG)

Acceleration

Limit of engine operation at zero gravity and in **negative "g"** condition.

Max.	5 seconds at max. -0.5 g
------	--------------------------

Critical flying altitude

available boost pressure

NOTICE

Up to the stated critical flight altitude the respective manifold pressure is available.

Take-off performance	up to max. 2450 m (8000 ft.) above sea level
Continuous performance	up to max. 4875 m (16000 ft.) above sea level

Airbox temperature

Intervention temperature	72 °C (160 °F)
Intervention temperature	* 88 °C (190 °F) * 914 F starting with S/N 4,420.200 (TCU TNr. 966741) * 914 UL starting with S/N 4,417.598 (TCU TNr. 966471)

Oil pressure

Max.	7 bar (102 psi)
NOTICE	For a short period admissible at cold start.
Min.	0.8 bar (12 psi) (below 3500 rpm) * 1.5 bar (22 psi)
Normal	2.0 to 5.0 bar (29 to 73 psi) (above 3500 rpm) * 1.5 to 5.0 bar (22 to 73 psi) * 914 F up to S/N 4,420.085 * 914 UL up to S/N 4,417.665

Oil temperature

Max.	130 °C (266 °F)
Min.	50 °C (120 °F)
normal operating temperature	approx. 90 to 110 °C (190 - 230 °F)

EGT

exhaust gas temperature

Max.	950 °C (1742 °F)
------	------------------

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Conventional coolantSee also [Chapter 2.2](#).

Applicable for engine S/N without Suffix -01.

Coolant temperature: (coolant exit temperature)	
Max.	120 °C (248 °F)
Cylinder head temperature:	
Max.	135 °C (275 °F)
Permanent monitoring of coolant temperature and cylinder head temperature is necessary.	

Waterless coolantSee also [Chapter 2.2](#).

Cylinder head temperature:	
Max.	135 °C (275 °F)
Permanent monitoring of cylinder head temperature is necessary.	

Conventional coolant

Applicable for engine S/N with Suffix -01.

Coolant temperature limit measured in the cylinder head	Engine type
Max. 120 °C (248 °F)	914 F/UL
Permanent monitoring of coolant temperature is necessary.	

Engine start, operating temperature

Max.	50 °C (120 °F) (ambient temperature)
Min.	-25 °C (-13 °F) (oil temperature)

Fuel pressure**WARNING**

Non-compliance can result in serious injuries or death!

Exceeding the max. admissible fuel pressure will override the float valve of the carburetor and to engine failure.

Max.	Airbox pressure + 0.35 bar (5.08 psi)
Min.	Airbox pressure + 0.15 bar (2.18 psi)
Normal	Airbox pressure + 0.25 bar (3.63 psi)

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Propeller governor

Power consumption of the hydraulic propeller governor:	
Max.	600 W

Vacuum pump

Power consumption of the vacuum pump:	
Max.	300 W

External alternator

Power consumption of the external alternator:	
Max.	1200 W

Bank angle

Deviation from bank angle:	
Max.	40°

NOTE: Up to this value the dry sump lubrication system warrants lubrication in every flight situation.

2.2) Operating media-Coolant

General note

NOTICE

Obey the latest edition of Service Instruction SI-914-019 for the selection of the correct coolant.

Conventional coolant

Conventional coolant mixed with water has the advantage of a higher specific thermal capacity than waterless coolant.

Application

When correctly applied, there is sufficient protection against vapor bubble formation, freezing or thickening of the coolant within the operating limits.

Use the coolant specified in the manufacturers documentation.

Mixture

NOTICE

Obey the manufacturers instructions about the coolant.

Applicable for engine S/N without Suffix -01.

designation	mixture ratio %	
	concentrate	water
conventional e.g. BASF Glysantine anticorrosion	50*	50
waterless e.g. Aero Cool 180°	100	0

* coolant component can be increased up to max. 65 %.

Applicable for engine S/N with Suffix -01.

designation	mixture ratio %	
	concentrate	water
conventional e.g. BASF Glysantine anticorrosion	50*	50

* coolant component can be increased up to max. 65 %.

2.3) Operating media-Fuel

General note

NOTICE

Obey the local codes and the latest edition of Service Instruction SI-914-019 for the selection of the correct fuel.

NOTICE

Use only fuel suitable for the respective climatic zone.

NOTE: Risk of vapour formation if using winter fuel for summer operation.

Knock resistance

The fuels with following specifications can be used:

	Usage/Description
Knock resistance	914 F/UL
	Min. RON 95 (min. AKI* 91)

* Anti Knock Index (RON+MON)/2

Mogas

	Usage/Description
Mogas	914 F/UL
European standard	EN 228 Super EN 228 Super plus

AVGAS

AVGAS 100LL places greater stress on the valve seats due to its high lead content and forms increased deposits in the combustion chamber and lead sediments in the oil system. Thus it should only be used in case of problems with vapor lock or when other types of gasoline are unavailable.

	Usage/Description
AVGAS	914 F/UL
Aviation Standard	AVGAS 100 LL (ASTM D910)

2.4) Operating media-Lubricants

General note

NOTICE

Obey the manufacturers instructions about the lubricants.
If the engine is mainly run on AVGAS more frequent oil changes will be required. See Service Instruction SI-914-019, latest edition.

Oil type

For the selection of suitable lubricants refer to the Service Information SI-914-019, latest edition.

Oil consumption

Max. 0.06 l/h (0.13 liq pt/h).

Oil specification

- Use only oil with API classification "**SG**" or higher!
- Due to the high stresses in the reduction gears, oils with gear additives such as high performance motor cycle oils are recommended.
- Because of the incorporated overload clutch, oils with friction modifier additives are unsuitable as this could result in a slipping clutch during normal operation.
- Heavy duty 4-stroke motor cycle oils meet all the requirements. These oils are normally not mineral oils but semi- or full synthetic oils.
- Oils primarily for Diesel engines have **insufficient high temperature properties and additives which favour clutch slipping, and are generally unsuitable.**

Oil viscosity

Use of multi-grade oils is recommended.

NOTE:

Multi-viscosity grade oils are less sensitive to temperature variations than single grade oils.

They are suitable for use throughout the seasons, ensure rapid lubrication of all engine components at cold start and get less fluid at higher temperatures.

3.5) Prior to take-off

Safety



Non-compliance can result in serious injuries or death!

Do not take the engine into operation if any person is near the aircraft.

Warming up period

Step	Procedure
1	Start warming up period at approx. 2000 rpm for approx. 2 minutes.
2	Continue at 2500 rpm, duration depending on ambient temperature, until oil temperature reaches 50 °C (120 °F).
3	Check temperatures and pressures.

Throttle response

NOTICE

After a full-load ground test allow a short cooling run to prevent vapour formation in the cylinder head.

Step	Procedure
1	Short full throttle ground test (consult Aircraft Operators Manual since engine speed depends on the propeller used).

Ignition check

Check the two ignition circuits at **4000 rpm** (approx. 1700 rpm propeller).

Step	Procedure
1	Speed drop with only one ignition circuit must not exceed 300 rpm (approx. 130 rpm propeller).
2	115 rpm (approx. 50 rpm propeller) max. difference of speed by use of either circuit, A or B.
	NOTE: The propeller speed depends on the actual reduction ratio.

Propeller governor

Check of hydraulic propeller governor:

Check control of the hydraulic propeller governor to specifications of the manufacturer.

NOTE: Cycling the propeller governor puts a relatively high load on the engine. Unnecessary cycling or additional checks should be avoided.

3.6) Take-off

Safety



Non-compliance can result in serious injuries or death!

- Monitor oil temperature, cylinder head temperature, coolant temperature and oil pressure. Limits must not be exceeded! See [Chapter 2.1](#)) Operating limits.
- Respect “cold weather operation” recommendations, see [Chapter 3.9](#)).

NOTICE

If the national Aviation Authority demands the software classification “D” according to RTCA DO 178 B for the TCU software a special starting procedure is laid down which renders any influence of the TCU ineffective during the take-off, see [Chapter 3.6.2](#)).

Climb

Climbing with engine running at take-off performance is permissible (max. 5 minutes) (see [Chapter 2.1](#)).

3.6.1) Take-off (standard - with activated servo motor of the TCU)

Step	Procedure
1	Switch on the auxiliary fuel pump at take-off.
2	Move throttle lever to 115 % (take-off performance).
3	The auxiliary fuel pump should be switched off after the take-off.

3.6.2) Take-off (as per RTCA DO 178 B - with deactivated servo motor of the TCU)

NOTICE

Any improper use of the TCU-switch will be recorded by the TCU. At exceeding of the limits of operation will render any claims on ROTAX null and void.

Step	Procedure
1	Switch on the auxiliary fuel pump.
2	Move throttle lever to 115 % (take-off performance).
3	Set take-off power until the boost pressure stabilizes within the limits of operation.
4	TCU-switch in "OFF" position.
5	After reaching the critical altitude switch on the TCU.
6	The auxiliary fuel pump should be switched off after the take-off.

3.7) Cruising

Performance

Step	Procedure
1	Set performance as per performance specifications Chapter 5) and respect operating limits as per Chapter 2.1).

Oil temperature

Step	Procedure
1	Avoid operation below normal operation oil temperature (90 to 110 °C / 194 to 230 °F), as possible formation of condensation water in the lubrication system badly influences the oil quality. To evaporate accumulated condensation operate engine at over 100 °C (212 °F) oil temperature for a minimum of 10 min. every flight day.

3.8) Engine shut-off

General note

Normally the cooling down of the engine during descending and taxiing will be sufficient to allow the engine to be shut off as soon as the aircraft is stopped.

At increased operating temperatures make an engine cooling run of at least minimum 2 minutes.

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3.9) Cold weather operation

General note Generally, an engine service should be carried out before the start of the cold season.

Coolant For selection of coolant and mixing ratio, see "Coolant", [Chapter 2.2](#).

Lubricant For selection of oil, see table of Lubricants [Chapter 2.4](#).

- Cold start**
- With throttle closed and choke activated (open throttle renders starting carb ineffective).
 - Be aware, no spark below crankshaft speed of 220 rpm (propeller speed of 90 rpm).
 - As performance of electric starter is greatly reduced when hot, limit starting to periods not much longer than 10 sec. With a well charged battery, adding a second battery will not improve cold starts.

Remedy - Cold start

Step	Procedure
1	Use of multigrade oil with the low end viscosity code of 5 or 10.
2	Gap electrode on spark plug to the minimum or fit new spark plugs.
3	Preheat engine.

Icing in the air intake system

Icing due humidity

Carburetor icing due to humidity may occur on the venturi and on the throttle valve due to fuel evaporation and leads to performance loss and change in mixture.

- Remedy**
- Intake air pre-heating is the only effective remedy. See Flight Manual supplied by the aircraft manufacturer.
 - The turbocharger will heat up the intake air. If however a intake air pre-heating is necessary, observe the aircraft manufacturer's engine installation and operating instruction.
-

4) Abnormal operation

Introduction



Non-compliance can result in serious injuries or death!

At unusual engine behaviour conduct checks as per Maintenance Manual, Chapter 05-50-00 before the next flight.

NOTE: Further checks - see Maintenance Manual.

Table of contents

This chapter of the Operators Manual contains expanded operating and maintenance instruction at abnormal operation.

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Periodical rise and drop of boost pressure and speed (boost pressure control is surging)	page 4-3
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Red boost lamp of TCU blinking.	page 4-4
Orange caution lamp of blinking	page 4-5
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4.1) Sudden drop of boost pressure and speed

Sudden drop of boost pressure and speed

Any exceeding of the max. admissible engine speed or boost pressure has to be recorded by the pilot in the logbook, stating the duration, exact time and extent of exceeding.

Loud noise or bang	
Possible cause	Remedy
Fracture of the turbo	Look for landing possibility.
	Flight with reduced performance may be possible.
	Monitor oil pressure.

Orange caution lamp of TCU (turbo control unit) is blinking	
Possible cause	Remedy
Wastegate does not close	Limited flying operation as possibly wastegate does not respond.

NOTE: A minimum performance of approx. 66 kW (88 HP) remains available.

4.2) Sudden rise of boost pressure and speed

Sudden rise of boost pressure and speed

Any exceeding of the max. admissible engine speed or boost pressure has to be recorded by the pilot in the logbook, stating the duration, exact time and extent of exceeding.

Orange caution lamp of TCU (turbo control unit) is blinking	
Possible cause	Remedy
Wastegate fully closed	Immediately reduce engine speed until boost pressure and speed are within operating limits.
	Limited flying operation as wastegate may be fully closed and control of the boost pressure is only possible via throttle lever.

Bowden cable(s) for actuation of throttle valve(s) broken	
Possible cause	Remedy
Due to spring pressure the throttle valve(s) will be fully open - full throttle!	Limited flying operation as wastegate may be fully closed and control of the boost pressure and rpm is only possible via ignition unit.

4.4.3) Orange caution lamp of TCU blinking

Orange caution lamp of TCU blinking

In case of blinking of the orange caution lamp of TCU, this has to be recorded by the pilot in the logbook, stating the duration, exact time and extent of exceeding limits.

NOTICE

If the manually controlled variable is not possible, then turn off the servo motor.

Possible cause	Remedy
Indicates a failure of a sensor, sensor wiring, TCU, or leakage in the airbox	Reduce speed and boost pressure manually to be within the operating limits.
	Limited flying operation, as this may indicate the boost pressure control is no more or insufficiently possible and may affect engine performance.

4.5) Failure of the voltage supply to the TCU

Failure of voltage supply

Any exceeding of the max. admissible operating limits must be recorded by the pilot in the logbook, stating the duration, exact time and extent of exceeding.

Possible cause	Remedy
At a failure of voltage supply the servo motor will remain in its momentary position.	Limited flight operation as boost pressure control is not possible.

4.6) Start during flight

Engine stop

- Starting procedure same as on ground, however, on a warm engine without choke.

4.7) Exceeding of max. admissible engine speed

Exceeding of max. engine speed

- Reduce engine speed. Any exceeding of the max. admissible engine speed has to be entered by the pilot into the logbook, stating duration and extent of overspeed.

4.8) Exceeding of max. admissible cooling system temperature

Exceeding of cooling system temperature

NOTICE

Reduce engine power setting to the minimum necessary to maintain flight and carry out precautionary landing.

4.8.1) Exceeding of max. admissible cyl. head temperature

Applicable for engine S/N without Suffix -01.

- Any exceeding of the max. admissible cylinder head temperature has to be entered by the pilot into the logbook, stating duration and extent of over-temperature condition.
 - Carry out an unscheduled maintenance check according to Maintenance Manual Line chapt. 05-50-00.
-

4.8.2) Exceeding of max. admissible coolant temperature

Applicable for engine S/N with Suffix -01.

- Any exceeding of the max. admissible coolant temperature has to be entered by the pilot into the logbook, stating duration and extent of over-temperature condition.
 - Carry out an unscheduled maintenance check according to Maintenance Manual Line chapt. 05-50-00.
-

4.9) Exceeding of max. admissible oil temperature

Exceeding of oil temperature

NOTICE

Reduce engine power setting to the minimum necessary to maintain flight and carry out precautionary landing.

- Any exceeding of the max. oil temperature must be entered by the pilot in the logbook, stating duration and extent of over-temperature condition
-

4.10) Oil pressure below minimum - during flight

Oil pressure below minimum

NOTICE

Reduce engine power setting to the minimum necessary to maintain flight and carry out precautionary landing.

- Check oil system.
-

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4.11) Oil pressure below minimum - on ground

- Oil pressure below minimum** Immediately stop the engine and check for reason. Check oil system.
- Check oil quantity in oil tank.
 - Check oil quality. See [Chapter 2.4](#)).
-

4.12) Engine on fire or fire in the engine compartment

Engine on fire In the event of fire or signs, e.g. heavy smoke:

Step	Procedure
1	Both electric fuel pumps and the main switched off.
2	The fuel valve has to be closed.
3	If the fire should extinguish it may be tried again to actuate the main fuel pumps and to start the engine (see section Engine start).

NOTICE

If the fire starts anew the fuel system has to be shut off immediately.

Any shut-off of the fuel system for short periods or permanent has to be entered by the pilot into the logbook starting date and duration of shut-off.

4.13) Trouble shooting

Introduction

All checks in accordance with the Maintenance Manual (current issue/revision).



Non-compliance can result in serious injuries or death!

Only qualified staff (authorized by the Aviation Authorities) trained on this particular engine, is allowed to carry out maintenance and repair work.

NOTICE

If the following hints regarding remedy do not solve the problem, contact an authorized workshop. The engine must not be operated until the problem is rectified.

Table of content

This chapter of the Operators Manual contains possible cause and remedy in case of trouble shooting.

Subject	Page
Starting problems	page 4-9
Engine run	page 4-9
Oil pressure	page 4-9
Oil level	page 4-10
Engine hard to start at low temperature	page 4-10

9) Supplement

Introduction

According to the regulation of EASA part 21 A.3 / FAR 21.3 the manufacturer shall evaluate field information and report to the authority. In case of any relevant occurrences that may involve malfunction of the engine, the form on the next page should be filled out and sent to the responsible authorized ROTAX® distributor.

NOTE: The form is also available from the official ROTAX® AIRCRAFT ENGINES Homepage in electronic version.

www.FLYROTAX.com

Table of content

This chapter of the Operators Manual contains the form and the list of authorized distributors for ROTAX aircraft engines.

Subject	Page
Form	page 9-3
Authorized distributors	page 9-5

NOTES

9.2) Authorized Distributor

General note See the official ROTAX[®] AIRCRAFT ENGINES Website
www.FLYROTAX.com

List Overview of authorized distributors of ROTAX aircraft engines.

Subject	Page
Europe	page 9-6
America	page 9-7
Australia	page 9-7
Africa	page 9-7
Asia	page 9-8

1) EUROPE

CZECHIA / SLOVAKIA:

► **TEVESO S.R.O.**
Skroupova 441
CS-50002 HRADEC KRALOVE
CZECHIA
Tel.: +42 049 / 5217 127,
Fax: +42 049 / 5217 226
E-mail: motory@teveso.cz
Website: www.teveso.cz
Contact persons: Ing. Jiri Samal

SWEDEN / FINLAND / NORWAY / ESTONIA / LATVIA / LITHUANIA / DENMARK:

► **LYCON ENGINEERING AB**
Härkeberga, SE-74596 ENKÖPING
SWEDEN
Tel.: +46 (0) 171 / 414039,
E-mail: info@lycon.se
Website: www.aeronord.eu

FRANCE / BELGIUM / LUXEMBURG / MONACO:

► **MOTEUR AERO DISTRIBUTION**
11 Blvd Albert 1
98000 MONACO
Tel.: +377 (0) 93 30 17 40,
Fax: +377 (0) 93 30 17 60
E-mail: mad@libello.com
Website: www.moteuraerodistribution.com
Contact person: Philippe Thys

GERMANY / AUSTRIA / BULGARIA / HUNGARY / LIECHTENSTEIN / ROMANIA / SWITZERLAND / THE NETHERLANDS:

► **FRANZ AIRCRAFT ENGINES VERTRIEB
GMBH**
Am Weidengrund 1a, 83135 Schechen,
GERMANY
Tel.: +49 (0) 8039 / 90350,
Fax: +49 (0) 8039 / 9035-35
E-mail: info@franz-aircraft.de
Website: www.franz-aircraft.de
Contact person: Eduard Franz

GREAT BRITAIN / IRELAND / ICELAND:

► **CFS AEROPRODUCTS LTD.**
BUBBENHALL ROAD
BAGINTON, WARWICKSHIRE CV8 3BB
GREAT BRITAIN
Tel.: +44 (0) 2476 / 305 873,
Fax: +44 (0) 2476 / 302 088
E-mail: rotax@cfsaero.com
Website: www.cfsaero.com

SLOVENIA:

► **PIPISTREL D.O.O. AJDOVSCINA**
Goriska Cesta 50A
5270 AJDOVSCINA
Tel.: +386 (0) 5 / 3663 873,
Fax: +386 (0) 5 / 3661 263
E-mail: info@pipistrel.si
Website: www.pipistrel.si
Contact person: Leon Brecej

POLAND:

► **FASTON LTD.**
ul. Zwirki i Wigury 47
PL-21-040 SWIDNIK
Tel.: +48 (0) 81 / 751-2882;
Fax: +48 (0) 81 / 751-5740
E-mail: faston@go2.pl
Contact person: Mariusz Oltarzewski

ITALY / BOSNIA / HERZOGOVINA / CROATIA / CYPRUS / GREECE / MALTA / PORTUGAL / SPAIN / SERBIA / TURKEY / :

► **LUCIANO SORLINI S.P.A.**
Piazza Roma, 1
Carzago di Calvagese Riviera (Brescia)
ITALY
Tel.: +39 030 / 601 033,
Fax: +39 030 / 601 463
E-mail: avio@sorlini.com
Website: www.sorlini.com
Contact person: Alberto Comincioli

2) A M E R I C A

CANADA:

►ROTECH RESEARCH CANADA, LTD.

6235 Okanagan Landing Rd.
VERNON, B.C., V1H 1M5
CANADA
Tel.: +1 250 / 260-6299,
Fax: +1 250 / 260-6269
E-mail: inquiries@rotec.com
Website: www.rotec.com

3) A U S T R A L I A / N E W Z E A L A N D / P A P U A N E W G U I N E A:

►BERT FLOOD IMPORTS PTY. LTD.

P.O. Box 61, 16-17 Chris Drive
LILYDALE, VICTORIA 3140
AUSTRALIA
Tel.: +61 (0) 3 / 9735 5655,
Fax: +61 (0) 3 / 9735 5699
E-mail: wal@bertfloodimports.com.au
Website: www.bertfloodimports.com.au
Contact person: Mark Lester

ALGERIA / MAROCCO / TUNESIA:

►MOTEUR AERO DISTRIBUTION

11 Blvd Albert 1
98000 MONACO
Tel.: +377 (0) 93 30 17 40,
Fax: +377 (0) 93 30 17 60
E-mail: mad@libello.com
Website: www.moteuraerodistribution.com
Contact person: Philippe Thys

NORTH / MIDDLE / SOUTH AMERICA:

►KODIAK RESEARCH LTD.

P.O. Box N 658
Bay & Deveaux Street
NASSAU
BAHAMAS
Tel.: +1 242 / 356 5377,
Fax: +1 242 / 356 2409
E-mail: custsupport@kodiakbs.com
Website: www.kodiakbs.com

4) A F R I C A

EGYPT:

►AL MOALLA

P.O. Box 7787, ABU DHABI
Tel.: +971 (0) 2/ 444 7378,
Fax: +971 (0) 2/444 6896
E-mail: almoalla@emirates.net.ae
Contact person: Hussain Al Moalla

LIBYA:

►LUCIANO SORLINI S.P.A.

Piazza Roma, 1
Carzago di Calvagese Riviera (Brescia)
ITALY
Tel.: +39 030 / 601 033,
Fax: +39 030 / 601 463
E-mail: avio@sorlini.com
Website: www.sorlini.com
Contact person: Alberto Comincioli

ANGOLA / BOTSWANA / LESOTHO/ MADAGASCAR / MALAWI / MOZAMBIQUE/ NAMIBIA / SOUTH AFRICA / SWAZILAND/ ZAMBIA / ZIMBABWE:

►AVIATION ENGINES ANDACCESSORIES (PTY) LTD

P.O. Box 15749, Lambton 1414,
SOUTH AFRICA
Tel.: +27 (0) 11 / 824 3368,
Fax: +27 (0) 11 / 824 3339
E-mail: niren@cometaviationsupplies.co.za
Website: www.aviation-engines.co.za
Contact person: Niren Chotoki

GHANA / BENIN / BURKINA FASO / CAMEROON / CENTRAL AFRICAN REPUBLIC / CONGO / GABON / GUINEA / IVORY COAST / MALI / MAURITANIA / NIGER/ NIGERIA / SENEGAL / TOGO:

►WAASPS LTD

PMB KA49, Kotoka International Airport, Accra, GHANA
Tel.: +233 (0) 28 5075254,
Fax: +233 (0) 217 717 92
E-mail: info@waasps.com
Website: www.waasps.com
Contact person: Jonathan Porter

5) A S I A

CHINA / HONG KONG / MACAO:

► PEIPOINT INDUSTRIES LTD.

Rm. 1302, Westlands Centre
20 Westlands Road, Quarry Bay
HONG KONG

Tel.: +852 (0) 2885 / 9525,
Fax: +852 (0) 2886 / 3241
E-mail: admin@peiport.com.hk
Website: www.peiport.com
Contact person: Larry Yeung

CIS:

► AVIAGAMMA JSCO.

P.O. Box 51, 125 057 MOSCOW
Tel.: +7 499 / 158 31 23,

Fax: +7 499 / 158 62 22
E-mail: aviagamma@mtu-net.ru
Website: www.aviagamma.ru
Contact person: Vladimir Andriytschuk
General Director

KOREA:

► KOREA BUSINESS AIR SERVICE CO. LTD.

672-4 KBAS Bldg. Deungchon-dong,
Kangseo-ku, Seoul, SOUTH KOREA

Tel.: +82 (0) 2 / 3664 - 6644
Fax: +82 (0) 2 / 2658 - 6562
E-mail: sd.lim@kbas.com
Contact person: Su Dong Lim

INDONESIA / MALAYSIA / PHILIP- PINES / SINGAPORE / THAILAND / TAIWAN:

► BERT FLOOD IMPORTS PTY. LTD.

P.O. Box 61, 16-17 Chris Drive LILYDALE,
VICTORIA 3140

AUSTRALIA
Tel.: +61 (0) 3 / 9735 5655,
Fax: +61 (0) 3 / 9735 5699
E-mail: wal@bertfloodimports.com.au
Website: www.bertfloodimports.com.au
Contact person: Mark Lester

UNITED ARAB. EMIRATES:

► AL MOALLA

P.O. Box 7787
ABU DHABI
Tel.: +971 (0) 2 / 444 7378,
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Contact person: Hussain Al Moalla

ISRAEL / PAKISTAN:

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JAPAN :

► JUA, LTD.

1793 Fukazawa, Gotemba City
SHIZUOKA PREF 412

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Contact person: Yoshihiko Tajika
President

INDIA:

► VARMAN AVIATION PVT. LTD.

Aviation Complex, 16-17
EPIP, Whitefield

BANGALORE - 560066
Tel.: +91 (0) 80 / 28412536, 28412655,
28412656
Fax: +91 (0) 80 / 28413559
E-mail: varman@blr.vsnl.net.in
Website: www.varman.com
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