



Summary of maintenance to be carried out at each service interval

2-stroke engines provide exceptional power to weight performance, but require particular attention to critical factors-

- **Fuel/air ratio**, particularly running lean. This can be caused by poor mixture control (jet needle/needle jet selection or wear), leaking inlet manifold and rubbers, low prop loading, high speed/lightly loaded descents. This can cause piston crown damage and metal deposition.
- **Carbon build-up**, particularly running excessively rich. This can be caused by excessive oil/fuel ratio, heavy prop loading, wide open throttle/low rpm operation. This can cause sticking rings and piston seizure.
- **Cold seizure** due to rapid heating of the piston in a cool cylinder. This can be caused by poor/insufficient warm-up, or rapid application of power after a long descent (eg overshooting). This can cause loss of power or complete seizure.
- **Big end bearing failure** due to corrosion, wear or poor lubrication. This generally causes catastrophic failure.

It is therefore important to ensure proper operation and handling of the engine, and monitor piston, cylinder and crankshaft wear over the life of the engine.

The following components and systems must be replaced every 5 years:

- Venting hose of the carburettors
- Carburettor sockets
- All rubber hoses of the cooling system
- All rubber hoses of the fuel system
- Coolant must be replaced as per manufacturers instructions, at the latest during 100hr check

Notes:

1. Refer to the **spark-plug condition inspection procedure** for inspection procedures which may permit returning serviceable parts to service without replacement.
2. Refer to the **rubber parts condition inspection procedure** for inspection procedures which may permit returning serviceable parts to service without replacement.
3. Refer to the **jet needle/needle jet condition inspection procedure** for inspection procedures which may permit returning serviceable parts to service without replacement.
4. Refer to the **crankshaft end-play condition inspection procedure** for inspection procedures which may permit returning serviceable parts to service without replacement.

RAANZ Rotax 503/582 On-condition maintenance checklist/sign-off

These following pages are an extract from the [Rotax 582 Operators Manual](#).

Reference MMH is to the [Rotax 582 Maintenance Manual Heavy](#).

Refer to them for detailed inspection/maintenance instructions

We recommend that at each service interval you print these out, fill/sign them off as each step is carried out, and insert in your engine logbook as proof of maintenance.

AIRCRAFT	
Registration number	
Aircraft make	
Aircraft model and S/N	
Time since new	

ENGINE	
Engine type	
Engine S/N	
TSN (time since new)	
TSO (time since overhaul)	
Used operating fluids:	
Coolant	
	mixture ratio
Fuel	
Oil	
	type
	viscosity

AIRCRAFT OPERATOR	
Name	
Address	
Telephone/email	

MAINTENANCE FACILITY							
Maintenance workshop							
Address							
Telephone/email							
Certificate							
This check is applicable	12.5 hr	25hr	50 hr	100 hr/ annual	200 hr	500 hr	
Leaded fuel more than 30% of operation?	YES/NO						
Next check due at:hr						

Points of Inspection	Interval Operating hours	Chapter Reference	Signature
1) General note			
All (Alert) Service Bulletins are complied with. If necessary to perform these and documented.	annual		
2) Spark plug			
Check and clean inside of spark plug connectors	12.5hr	12-20- 00	
Remove all spark plugs and check for spark plug defects (deposits, melting...).	12.5hr	12-20- 00	
Replace spark plugs (Note 1)	25hr	12-20- 00	
3) Checking gearbox oil level			
Checking gearbox oil level	25hr	12-20- 00	
4) Oil change			
Replace gearbox oil	100hr	12-20- 00	
Replace rotary valve lubrication oil	100hr	12-20- 00	
5) Check and adjust gearbox			
Check and adjust gearbox, preload of springs (type B gearbox)	100hr	12-20- 00	
Inspect gearbox magnetic plug	25hr		
Check gearbox backlash (crankshaft locked)	100hr		
6) Check carburetors			
Check, if necessary clean carburetor(s) and readjust (idle speed, cable tension,..)	50hr	12-20- 00	
Replace jet needle and needle jet (Note 3)	150hr	12-20- 00	
7) Check fuel pump			
Check fuel pump (measure fuel pressure)	50hr	12-20- 00	
8) Exhaust system			
Retorque exhaust manifold screws	100hr	12-20- 00	
Lubricate ball joints	100hr	12-20- 00	
Inspect/replace exhaust muffler springs	100hr	12-20- 00	
9) Clean and oil air filter			
Clean and oil air filter.	25hr	12-20- 00	
10) Fuel filter			
Check fuel filter	25hr	12- 20-00	
Replace fuel filter	100hr	12- 20-00	
11) Check rewind starter rope			
Check rewind starter rope	12.5hr	12-20- 00	
12) Check electric starter gear			
Check electric starter gear	50hr	see MMH	
13) Check ignition system			

Check ignition system	25hr	12-20- 00	
14) Check cylinder head and piston crown			
Inspect cylinder head and piston crown	50hr	see MMH	
15) Piston inspection			
Inspect piston rings for free movement	50hr	see MMH	
Check piston diameter	150hr	see MMH	
Piston ring: Check gap	150hr	see MMH	
Piston ring (rectang. Ring): Check axial clearance	150hr	see MMH	
16) Piston pin inspection			
Inspect piston pin and bearing	150hr	see MMH	
17) Cylinder inspection			
Check compression 1..... 2.....	25hr		
Check cylinder diameter	150hr	see MMH	
Cylinder: Check for roundness	150hr	see MMH	
Replace cylinder head-, cylinder base- and exhaust -gasket	150hr	see MMH	
19) Outer seals and crankshaft			
Inspect crankshaft and replace outer seals if necessary	150hr	see MMH	
Check piston/piston pin/big-end end play (Note 4)	25hr	see MMH	
20) Coolant			
Repace coolant	100hr		
21) Checking the V-belt tension			
Check V-belt condition and tension (forced air 503)	25hr		

22) Engine test run Observe the safety instructions!				
OAT				
QNH				
Minimum RPM		X	SAT/UNSAT	
Maximum RPM		X	SAT/UNSAT	
Mag drop 1/L		X	SAT/UNSAT	
Mag drop 2/R		X	SAT/UNSAT	
CHT		X	SAT/UNSAT	
EGT		X	SAT/UNSAT	
Charge		X	SAT/UNSAT	
Return to service				
Check was carried out according to this schedule and was recorded in the Engine Log book.				
		Signature		
		Date		