

VISUAL ENGINE INSPECTION CHECKLIST

FOR ROTAX 2-STROKE AIRCRAFT ENGINES

FUEL SYSTEM



1	Fuel tank, quantity and quality Is there enough fuel for the planned flight? What was the octane rating at the pump, is the fuel too old? Does the fuel contain too much alcohol? Is the fuel tank cap back on and secured? Is the fuel tank vent clear?		
2	2-stroke Engine Oil Is the right type of oil being used (<i>regardless of brand</i>)? Was oil added to the fuel, using the right ratio? (<i>for engines without oil injection</i>) Is there enough oil in the injection tank? (<i>engines with oil injection</i>)		
3	Contaminants Is there water, dirt or insects inside the fuel tank?		
4	Water separation system Has the fuel tank sump and / or gascolator been drained? Are the drain plugs secured?		
5	Fuel filter Is it the right type, is it clogged, cracked and installed correctly?		
6	Fuel pump Is it the right type, is it leaking, is it installed correctly and securely?		
7	Primer pump Plunger type: is it leaking, is it worn (can enough resistance be felt)? Primer bulb: if present, is it installed with a bypass circuit, is it cracked or leaking?		
8	Fuel line Is it the right type, does it show discoloration, cracks, leaks, stiffness or wear? Is it correctly secured and clamped, especially on the fuel pump fittings?		
9	Primer line Is it the right type, does it show discoloration, cracks, leaks, stiffness or wear?		
10	Pulse line Is it the right type, does it show discoloration, cracks, leaks or wear? Is it still flexible? Is it collapsible between your fingers?		

ENGINE MOUNTING

11	Engine mount Are the parts showing any cracks, corrosion or damage?		
12	Rubber mounts Are they showing any signs of cracks, drying, deformation or wear?		
13	Attaching hardware Are all the nuts, washers and bolts present, tight and not corroded?		

ENGINE CONTROLS

14	Control levers Are the levers in good condition, mounted correctly, moving freely over the full range of travel and stopping adequately?		
15	Control cables Are in they good condition and routed correctly? Do they have the right amount of play at the carburetors?		

ENGINE INSTRUMENTS

16	Hour meter Is one installed, is it operating correctly?		
17	Tachometer Is one installed, is it operating correctly?		
18	Dual Cylinder Head and/or liquid temperature gauge Is one installed, is it operating correctly?		
19	Dual Exhaust Gas Temperature gauge Is one installed, is it operating correctly?		
20	Cylinder Head and/or liquid temperature probes Are they installed and secured correctly? Are they damaged?		
21	Exhaust Gas Temperature probes Are they installed and secured correctly? Are they damaged?		

AIR FILTER and INTAKE SILENCER (*if installed*)

22	Air filter Is it the correct type, is it clean, correctly oiled and correctly secured? Is it clogged with dirt, fuel/oil gel or moist with fuel or water? Is the cover still on?		
23	Intake silencer Is it showing any damage, is it secured correctly?		
24	Intake silencer sockets Are they showing any cracks or damage, are the clamps tight?		

CARBURETORS

25	Angle Are they correctly angled out of the engine and at a right angle to the crankcase?		
26	Rubber caps Are they present, are they cracked?		
27	Vent lines Do they have the right length, right size holes, are they in good condition, any obstructions?		
28	Rubber sockets Are they showing any cracks, are they correctly tightened?		
29	Float bowls Are the clips too easy to undo? Is there any water, varnish, dirt or corrosion?		
30	Float level Are the floats floating at the correct level? Is the float bracket correctly adjusted?		

OIL INJECTION *(if installed)*



31 Tank	Is it showing any damage or leaks, is it installed and secured correctly, is the cap secured? Is the vent clear?		
32 Filter	Is it showing any damage or leaks?		
33 Lines to pump	Are they the right type, are they showing any damage, wear or leaks, are they secured correctly?		
34 Pump	Is it showing any damage or leaks, is the hardware secure?		
35 Pump lever	Is it correctly adjusted?		
36 Lines to manifolds	Are they showing any wear, cracks, leaks or stiffness? Are there any air bubbles?		

IGNITION and ELECTRICS

37 Electronic boxes	Are they showing any damage, are they secured correctly?		
38 Ignition wiring	Is it showing any damage or wear, are all the connections secured? Are the rubber boots in good condition?		
39 Spark plug caps	Are they the right type, are they secured, showing any cracks or damage?		
40 Spark plugs	Are they the right type, are they showing any external damage?		
41 Electrical wiring	Is it showing any damage or wear, are all the connections secured?		

AIR COOLING *(377, 447, 503)*

42 Fan	Is it showing any damage, does it turn smoothly when the propeller is spun?		
43 Belt	Is the tension correct, does it show any damage?		
44 Shrouds and fan cover	Do they show any damage, are all the fasteners present and secured? Are there any debris between the cooling fins and shrouds?		

LIQUID COOLING *(462, 532, 582, 618)*

45 Radiator(s)	Are they showing any damage, are they secured correctly?		
46 Expansion tank <i>(if installed)</i>	Is it showing any damage or leaks?		
47 Radiator cap	Is it secured, is it showing any damage or leaks?		
48 Overflow bottle	Is it the right type, is it correctly secured, is it showing any damage or leaks?		
49 Hoses	Are they showing any damage, wear or leaks? Are all clamps secured?		
50 Vents and bleeding ports	Are they in the right locations, in good condition and secured?		
51 Liquid chambers	Are any leaks showing at the cylinder head, cylinder base and liquid pump?		
52 Liquid level	Is the level within limits at the radiator/expansion tank and at the overflow bottle?		

ROTARY VALVE SYSTEM *(462, 532, 582, 618)*

53 Rotary valve cover	Is it showing any damage, cracks or leaks? Are all its fasteners present and secured?		
54 Rotary valve oil tank	Is it showing any damage or leaks? Is the oil level correct? Is the cap secured?		
55 Rotary valve oil hoses	Are they showing any damage or wear? Are all clamps present and tight?		

EXHAUST

56 Surface	Is it showing any cracks, damage or excessive corrosion?		
57 Mounting and arrangement	Is the mounting hardware correctly secured? Are the rubber isolators (if any) showing any cracks or damage? Is the angle of the elbow with the manifold and silencer correct?		
58 Flexibility	Can the exhaust components move freely to absorb vibration? Are they lubricated correctly?		
59 Springs	Are they all present, of the right type, showing any wear? Are they installed and secured correctly?		
60 Outlet pipe	Is it free of any debris or obstructions? Is the exhaust plug still on?		

REWIND STARTER *(if installed)*

61 Cover	Is the cover showing any damage? Are all of its fasteners present and tight?		
62 Rope and handle	Is the rope frayed, is the movement free and the recoil complete?		

ELECTRIC STARTER *(if installed)*

63 Motor casing	Is it showing any damage? Are all of its fasteners present and tight? Rotax MAG-end starter only: is there a small and consistent gap between the motor and support?		
64 Electrical connection	Is the connection secured? Is it insulated correctly?		
65 Starter support/adaptor	Are the parts showing any cracks or damage? Are all of the fasteners present and tight?		

GEARBOX (if installed)



66 Casing	Is it showing any damage, cracks or leaks? Are all the fasteners present and secured?		
67 Plugs	Magnetic plug, vent plug, 2 level check plugs: Are they correctly secured and safety wired?		
68 Propeller shaft and flange	Is it showing any damage, excessive corrosion or excessive play?		
69 Rubber coupling	(type C and E gearboxes) is it showing any damage or cracks? Are there any debris visible through the side vent holes?		

BELT REDUCTION DRIVE (Quad City Challenger type, if installed)

70 Redrive tower	Is it showing any damage? Are all of its fasteners present and tight?		
71 Drive pulley	Is it showing any damage? Are the teeth worn? Are the fender rings secure? Is the retaining bolt tight?		
72 Driven pulley	Is it showing any damage? Are the teeth worn? Is it parallel to the redrive tower? Is there clearance between the thrust washer and redrive tower surface? Are the shaft castle nut and adjuster bolt correctly tightened and secured?		
73 Cog Belt	Is it showing any cracks, damage or wear? Is it correctly tensioned?		

PROPELLER

74 Blades and hub	Any cracks, leading edge damage, tip damage, surface damage?		
75 Mounting hardware	Are all of the fasteners tight and correctly secured (locknuts or safety wire)?		

GENERAL CONDITION

76 Oil leaks	Are there any traces of oil at the spark plugs, cylinder heads, cooling shroud edges, propeller-side oil seal, crankcase to gearbox mating line, crankcase to fan tower mating line, crankcase to starter casing mating line, or crankcase halves mating line?		
77 Engine block	Is it showing any surface damage, cracks or excess corrosion?		
78 Engine block fasteners	Are they all present, tight and correctly secured?		
79 Engine revolution	When the propeller is spun by hand (with the ignition turned off), can normal resistance and compression be felt, are there any abnormal noises? When the engine is shaken back and forth, can normal springiness be felt, are there any abnormal noises?		

ENGINE MAINTENANCE CLASSES

We offer owners a chance to familiarize themselves with the operation, maintenance, repair and adjustment of their engines. Challenger-specific groups available!



ENGINE MAINTENANCE LOGS

Our Engine Maintenance Log and Handy Reference booklets make maintenance, troubleshooting and operation easy!



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