



VISUAL ENGINE INSPECTION SHEET

FOR ROTAX 503UL AIRCRAFT ENGINES INSTALLED ON QUAD CITY CHALLENGER AIRCRAFT

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 (regardless of brand)? 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 Is it the right type, is it leaking, is it worn (can enough resistance be felt)? Primer bulb: if present, is it installed with a bypass circuit?		
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, yet not collapsible?		

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 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 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

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?		
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CARBURETORS

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

OIL INJECTION (*if installed*)

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

IGNITION and ELECTRICS

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

AIR COOLING



40 Fan	Is it showing any damage, does it turn smoothly when the propeller is spun?		
41 Belt	Is the tension correct, does it show any damage?		
42 Shrouds and fan cover	Do they show any damage, are all the fasteners present and secured?		

EXHAUST

43 Surface	Is it showing any cracks, damage or excessive corrosion?		
44 Mounting and arrangement	Is the silencer clamp correctly tightened, are the rubber isolators showing any cracks or damage? Is the mounting hardware correctly secured? Is the angle of the elbow with the manifold and silencer correct?		
45 Flexibility	Can the exhaust components move freely to absorb vibration? Are they lubricated correctly?		
46 Springs	Are they all present, of the right type, showing any wear? Are they installed and secured correctly?		

REWIND STARTER (if installed)

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

GPL ELECTRIC STARTER (if installed)

49 Motor casing	Is it showing any damage? Are all of its fasteners present and tight?		
50 Electrical connection	Is the connection secured? Is it insulated correctly?		
51 Adapter ring and end cover	Are the parts showing any cracks or damage? Are all of the fasteners present and tight?		

QUAD CITY BELT REDUCTION DRIVE

52 Redrive tower	Is it showing any damage? Are all of its fasteners present and tight?		
53 Drive pulley	Is it showing any damage? Are the teeth worn? Are the fender rings secure? Is the retaining bolt tight?		
54 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?		
55 Cog Belt	Is it showing any cracks, damage or wear? Is it correctly tensioned?		

PROPELLER

56 Blades and hub	Any cracks, leading edge damage, tip damage, surface damage?		
57 Mounting hardware	Are all of the fasteners tight and correctly secured?		

GENERAL CONDITION

58 Oil leaks	Are there any traces of oil at the spark plugs, cylinder heads, cooling shroud edges, propeller-side oil seal, crankcase and fan tower mating line, or crankcase halves mating line?		
59 Engine block	Is it showing any surface damage, cracks or excess corrosion?		
60 Fasteners	Are they all present, tight and correctly secured?		
61 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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