

# Visual Engine Inspection Checklist.

## Fuel System

		Yes	No
1	<b>Fuel Tank, Quality and Quantity.</b> Is there enough fuel for the planed flight? What was the octane rating at the pump, is the fuel too old? Does the fuel contain too much alcohol? Is the fuel cap back on and secured? Is the fuel tank vent clear?		
2	<b>2-Stroke Engine Oil.</b> Is the right type of oil being used (Regardless of brand)? Was the Oil added using the right ratio? Is there enough oil in the injection tank?		
3	<b>Contaminants.</b> Is there water, dirt or insects inside the fuel tank?		
4	<b>Water separation system.</b> Has the fuel tank sump and / or gascolator been drained? Are the drain plugs secured?		
5	<b>Fuel Filter.</b> Is the right type, is it clogged, cracked and installed correctly?		
6	<b>Fuel Pump.</b> Is it the right type, is it leaking, installed correctly and securely?		
7	<b>Primer Pump.</b> 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	<b>Fuel Line.</b> Is it the right type, does it show discolouration, cracks, leaks, stiffness or wear? Is it secured and clamped, especially on the fuel pump fittings?		
9	<b>Primer Line.</b> Is it the right type, does it show decolouration, cracks, leaks or wear? Is it still flexible? Is it collapsible between your fingers?		
10	<b>Pulse Line.</b> 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	<b>Engine Mount.</b> Are the parts showing any cracks, corrosion or damage?		
12	<b>Rubber Mounts.</b> Are they showing any signs of cracks, drying, deformation or wear?		
13	<b>Attaching Hardware.</b> Are all the nuts, washers and bolts present, tight and not corroded?		

## ENGINE CONTROLS

14	<b>Control Levers.</b> Are the levers in good condition, mounted correctly, moving freely over the full range of travel and stopping adequately?		
15	<b>Control Cables.</b> Are in they good condition and routed correctly? Do they have the right amount of play at the carburettors?		

## ENGINE INSTRUMENTS

16	<b>Hour Meter.</b> Is one installed, is it operating correctly?		
17	<b>Tachometer.</b> Is one installed, is it operating correctly?		
18	<b>Duel Cylinder Head and/or Liquid Temp Gauge.</b> Is one installed, is it operating correctly?		
19	<b>Duel Exhaust Gas Temp Gauge.</b> Is one installed, is it operating correctly?		
20	<b>Cylinder Head and/or Liquid Temp Probes.</b> Are they installed and secured correctly? Are they damaged?		
21	<b>Exhaust Gas Temp Probes.</b> Are they installed and secured correctly? Are they damaged?		

## AIR FILTER and INTAKE SILENCER (if installed)

22	<b>Air Filter.</b> 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	<b>Intake Silencer.</b> Is it showing any damage, is it secured correctly?		
24	<b>Intake Silencer.</b> Sockets Are they showing any cracks or damage, are the clamps tight?		

## CARBURETTORS

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

## OIL INJECTION (if installed)

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

## IGNITION and ELECTRICS

37	<b>Electronic Boxes.</b> Are they showing any damage, are they secured correctly?		
38	<b>Ignition Wiring.</b> Is it showing any damage or wear, are all the connections secured? Are the rubber boots in good condition?		
39	<b>Spark Plug Caps.</b> Are they the right type, are they secured, showing any cracks or damage?		
40	<b>Spark Plugs.</b> Are they the right type, are they showing any external damage?		
41	<b>Electrical Wiring.</b> Is it showing any damage or wear, are all the connections secured?		

## AIR COOLING (377, 447, 503)

42	<b>Fan.</b> Is it showing any damage, does it turn smoothly when the propeller is spun?		
43	<b>Belt.</b> Is the tension correct, does it show any damage?		
44	<b>Shrouds and Fan Cover.</b> 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	<b>Radiator(s).</b> Are they showing any damage, are they secured correctly?		
46	<b>Expansion Tank.</b> (if installed) Is it showing any damage or leaks?		
47	<b>Radiator Cap.</b> Is it secured, is it showing any damage or leaks?		
48	<b>Overflow Bottle.</b> Is it the right type, is it correctly secured, is it showing any damage or leaks?		
49	<b>Hoses.</b> Are they showing any damage, wear or leaks? Are all clamps secured?		
50	<b>Vents and Bleeding Ports.</b> Are they in the right locations, in good condition and secured?		
51	<b>Liquid Chambers.</b> Are any leaks showing at the cylinder head, cylinder base and liquid pump?		
52	<b>Liquid level.</b> Is the level within limits at the radiator expansion tank and at the overflow bottle?		

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

53	<b>Rotary Valve Cover.</b> Is it showing any damage, cracks or leaks? Are all its fasteners present and secured?		
54	<b>Rotary Valve Oil Tank.</b> Is it showing any damage or leaks? Is the oil level correct? Is the cap secured?		
55	<b>Rotary Valve Oil Hoses.</b> Are they showing any damage or wear? Are all clamps present and tight?		

## EXHAUST

56	<b>Surface.</b> Is it showing any cracks, damage or excessive corrosion?		
57	<b>Mounting and arrangement.</b> 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	<b>Flexibility.</b> Can the exhaust components move freely to absorb vibration? Are they lubricated correctly?		
59	<b>Springs.</b> Are they all present, of the right type, showing any wear? Are they installed and secured correctly?		
60	<b>Outlet Pipes.</b> Is it free of any debris or obstructions? Is the exhaust plug still on?		

## REWIND STARTER (if installed)

61	<b>Cover.</b> Is the cover showing any damage? Are all of its fasteners present and tight?		
62	<b>Rope and Handle.</b> Is the rope frayed, is the movement free and the recoil complete?		

## ELECTRIC STARTER (if installed)

63	<b>Motor Casing.</b> 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	<b>Electrical Connection.</b> Is the connection secured? Is it insulated correctly?		
65	<b>Starter Support/Adapter.</b> Are the parts showing any cracks or damage? Are all of the fasteners present and tight?		

## GEARBOX (if installed)

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

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

70	<b>Redrive Tower.</b> Is it showing any damage? Are all of its fasteners present and tight?		
71	<b>Drive Pulley.</b> Is it showing any damage? Are the teeth worn? Are the fender rings secure? Is the retaining bolt tight?		
72	<b>Driven Pulley.</b> 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	<b>Cog Belt.</b> Is it showing any cracks, damage or wear? Is it correctly tensioned?		

## PROPELLER

74	<b>Blades and Hub.</b> Any cracks, leading edge damage, tip damage, surface damage?		
75	<b>Mounting Hardware.</b> Are all of the fasteners tight and correctly secured (locknuts or safety wire)?		

## GENERAL CONDITION

<b>76</b>	<b>Oil Leaks.</b> 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?		
<b>77</b>	<b>Engine Block.</b> Is it showing any surface damage, cracks or excess corrosion?		
<b>78</b>	<b>Engine Block Fasteners.</b> Are they all present, tight and correctly secured?		
<b>79</b>	<b>Engine Revolution.</b> 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?		