

Troubleshooting Tips And Pointers

Here are some tips on finding and rectifying those troublesome niggles that everyone has either had or experiences. Further help, tips or pointers, which aren't listed below, would be greatly received.

<u>Symptoms</u>	<u>Possible cause</u>	<u>Resolution</u>
Engine Fails to Start	Fuel Shortage Blockage in carb jet or fuel line	Check there is fuel in the tank Check fuel is flowing from the tank to the carb, remove pipe is necessary or use tickler
	No fuel in carb	Check float is not stuck or jet blocked
	Carb flooded	Wet spark plug insulator is obvious sign. Kick over the engine with the throttle wide open and the fuel off to clear excess fuel. Remove spark plug, clean and dry in the sunshine or warm place.
	Spark failure	Remove spark plug from cylinder head, lodge on metal fins and kick over engine. If you do not get a spark, change the plug. If still no spark check: Points and condenser, you should get a spark across the points as you open them with a screwdriver blade. If not, check battery and wires. Change coil.
	Fouled or 'Wiskered' plug	Clean or replace plug. Two strokes suffer from wiskering where a deposit bridges the plug gap, a remedy is a cooler plug or larger gap.
	No electrical power	Battery may be dead, on battery ignition models is evident by no lights or horn. Check the fuse, if fitted. Charge battery if dead. Check, clean and tighten battery terminals. Bump start is possible on some models, Disconnect battery earth lead and reconnect When started.
	Slipped ignition timing	If there is a spark, check that it comes just Before top-dead-centre. Check timing marks if present.
Engine fails to start after rain or washing	Wet HT leads, plug covers, ignition coil or distributor	Dry off these components (you can spray with Duck oil-water repellent)
		Dry off spark plugs or turn over engine with throttle open.
Clicking noise from engine at higher revs	Tappet clearance to great	Adjust tappets to correct clearance
Engine runs poorly after period of storage	Stale fuel	Drain the fuel from the tank and refill with new fuel
	Gum deposits in carb	Clean carb with suitable aerosol carb cleanser or metholated spirits.
Knock when accelerating	Piston slap	Check clearances on piston and bore. May need new piston or re-bore as well as piston.
	Small end bearing	Check tolerances no more than 3 thou.

<u>Symptoms</u>	<u>Possible cause</u>	<u>Resolution</u>
Medium speed misfire	Mixture too rich	Drain the fuel from the tank and refill with new
	Magneto fault	Check magneto for fault and repair
	Coil fault	Replace coil
Engine overheating	Weak mixture	Raise needle position, increase main jet or adjust as per manufacturer instruction.
	Ignition timing out	Retime ignition to manufacturers settings.
	Spark plug wrong grade	Replace with manufacturers recommended grade or equivalent.
Engine hard to start, idles poorly or runs erratically	Breaker points dirty or out of adjustment	Clean and adjust points
	HT pickup and slip ring dirty (mag ignition)	Remove pickup wire, wipe clean, wipe collector ring while rotating engine.
	Magneto or ignition coil fault	Remove spark plug and check spark will jump gap (1/8" for magneto and 1/4" for coil) when engine is turned over. Check again when everything is warmed up to determine whether there is any deterioration.
	Condenser fault	Usually indicated by rapid pitting of the contact breaker points and steady intense blue spark across the contacts, whereas a small white spark is normal.
	Ignition coil or condenser terminals loose	Check and tighten
	Water in carb	Drain carb bowl, blow out jets and passage ways
	Carb out of adjustment or requires cleaning	Adjust mixture and clean carb with suitable aerosol cleanser.
	Fuel flow restricted	Check vent hole in filler cap is not blocked.
Engine misfires when accelerating	Dirty plugs	Clean plugs or replace
	Weak spark	Check ignition system
	Magneto pick up brush missing	Replace
	Dirty pick up or collector ring	Clean
	Plug cap or HT cable faulty	Replace
Poor idle	Air leakage at carb flange	Tighten (do not over tighten as you will distort flange). Replace gasket or rubber seal
	Air leakage in manifold balance pipe	Seal joint or replace pipe.
	Worn carb slide and body	Replace carb
Engine cuts out and misfires on load Pronounced when climbing hills	Dirty spark plug	Clean or replace spark plug
	Plug gap to large	Adjust to correct size
	Weak spark or ignition trouble	Battery ignition check coil and set points Magneto ignition clean and set points, check armature and condenser.
Engine hesitates or dies when full throttle is applied	Blocked carb main jet	Remove main jet and blow through. Avoid using a pin to clear.
	Water in carb	Drain and clean carb bowl, jets and passages
	Mixture too weak	Raise needle position, increase main jet or adjust as per manufacturer instruction.
Blue smoke from exhaust when engine is warmed up	Worn bore or piston rings	Replace piston rings. Re-bore, fit new piston and rings.
Blue smoke from exhaust when changing gear	Worn valve guides or valve stems	Replace valves if the stem is worn or replace both guide and valve if excessive play in the guide
Misfire in wet weather	Short circuit of HT system	Check plug cap, coil and cable. Use duck oil (water repellent)
Poor top speed performance	Retarded ignition Faulty ignition auto advance	Check and set correctly Oil advance spindle, check advance springs and establish functionality.
	Dirty or blocked air filter	Clean filter or replace cartridge

<u>Symptoms</u>	<u>Possible cause</u>	<u>Resolution</u>
Blue smoke from exhaust when cold starting and when gear changing Contact breaker points burning	Worn valve stems	Replace valve and re-cut seat
	Worn valve guides	Replace valve and re-cut seat.
	Faulty condenser	Replace condenser
	Loose condenser terminal	Tighten terminal screw
	Dirty battery terminals	Clean and tighten terminals
Engine revs up but speed does not increase or kick start slips, fails to turn engine over	Clutch slipping	Adjust clutch pressure plate springs.
		Replace clutch driving plates if friction material worn
		Add extra driven plate to increase pressure.
Excessive vibration	Loose or worn engine mountings	Tighten bolts or bush mounting holes to remove play
	Loose head stabiliser	Tighten bolts
	Worn piston and crankshaft bearings	Engine overhaul.
	Worn gearbox main shaft bearings	Gearbox overhaul
	Crankshaft unbalanced	Balance crankshaft.
Blue smoke from exhaust when cold starting	Wet sumping caused by leaking oil pump valves. Oil settles in the sump, pushes past the piston into the cylinder and burns off as blue smoke.	After standing a few days, check the oil level before you start up the engine, if it has dropped or low. Recheck after running for a couple of minutes and it should have risen back to normal. Not a major problem, after periods of standing, turn the engine carefully over on the kickstart about ten times before you switch on the fuel and ignition. This will allow the oil pump to return some of the oil out of the sump before starting. Alternative fix or replace oil pump non return valves.
Loss of performance due to poor compression	No valve clearance	Adjust tappets correctly
	Burnt valve seats	Replace valve and recut seat
	Sticking valve	Clean valve stems and remove gum.
	Worn piston rings or bore	Replace rings, re-bore if bore is badly worn.
	Piston failure	Usually a holed piston, accompanied by large amount of smoke from the exhaust caused by weak mixture.
Engine seizes or becomes tight after prolonged high speed	Plug pre-ignition	Fit a cooler plug
	Piston seizure caused by incorrect piston clearance, weak mixture or incorrect timing	Resolve problem, may require new piston or careful smoothing of surfaces.
	Mixture weak	Raise needle position, increase main jet or adjust as per manufacturer instruction.
	Oil pressure failure caused by lack of oil, oil pump failure	Resolve problem, may require new piston, bore and cams or careful smoothing of surfaces.
Engine knocking when accelerating from low revs (pinking)	Ignition too advanced Automatic advance/retard mechanism springs too weak	Retard ignition by a degree or two Replace springs
	Engine needs de-coke	Strip top end down and remove carbon from cylinder head and piston.
Back firing and kicking back	Ignition too advanced Auto-advance unit stuck or broken spring	Retard ignition by a degree or two. Strip unit and replace any broken parts.