

SMALL ENGINE TROUBLESHOOTING CHART

Problem	Possible Cause	Solution
Engine fails to start or is hard to start	1. No fuel in tank.	1. Fill tank with recommended fuel.
	2. Fuel shutoff valve closed.	2. Open shutoff valve.
	3. Fuel line plugged or kinked.	3. Clean or replace fuel line.
	4. Fuel tank suction tube screen plugged.	4. Clean screen; if ball is stuck, clean or replace tube.
	5. Water in fuel tank.	5. Drain and clean fuel tank; refill with recommended fuel.
	6. Weak or no voltage at spark plug.	6. Check breaker points, coil, condenser, and lead; adjust or replace as necessary.
	7. Spark will not jump gap.	7. Check spark plug condition and gap; clean or replace plug; check ignition coil and replace as necessary.
	8. Engine flooded with fuel.	8. Open choke and close fuel tank valve; then crank engine until excess fuel is forced from exhaust.
	9. Choke partly open.	9. Close choke completely; if necessary, adjust choke cable.
	10. Carburetor needs adjustment.	10. Adjust needle valve and idle mixture to recommended settings.
	11. Throttle closed.	11. Open throttle to FAST or RUN position; check for binding throttle linkage or disconnected governor linkage.
	12. Plugged exhaust ports.	12. Remove muffler and clean exhaust ports.
	13. Bent or broken reed valve.	13. Replace reed valve or reed valve assembly.
	14. Leaking oil seal or gaskets.	14. Install new oil seal or gasket set.
	15. Low or no compression.	15. Check head gasket; if blown, replace gasket. Check piston rings; if worn or broken, replace piston rings. Check valves; if sticking, burned, or warped, recondition or replace valves.
	16. Carburetor or fuel tank vent blocked with dirt.	16. Clean out vent holes.
	17. Faulty magneto.	17. Check timing and point gap and, if necessary, repair or replace magneto.
Engine misfires under load	1. Weak or irregular spark.	1. Check ignition system, coil, and leads; replace as needed.
	2. Worn or fouled spark plug.	2. Replace with new spark plug, setting gap to recommended setting.
	3. Air cleaner plugged.	3. Service air cleaner.
	4. Choke partly closed.	4. Open choke; if necessary, adjust choke cable.

SMALL ENGINE TROUBLESHOOTING CHART

Problem	Possible Cause	Solution
Engine misfires under load (continued)	5. Carburetor mixture too lean.	5. Adjust needle valve for richer mixture.
	6. Carburetor or fuel tank vent blocked with dirt.	6. Clean out vent holes.
	7. Fuel not reaching carburetor.	7. Remove and clean fuel tank; clean or replace fuel line and fuel screen.
	8. Ignition shutoff not in full ON position.	8. Move or adjust shutoff to full ON position.
	9. Engine running too hot.	9. Remove debris from cooling fins. Check oil level; if low, add oil as needed.
	10. Too much or too little oil mixed with gasoline.	10. Drain fuel tank and refill with correct fuel/oil mixture.
	11. Plugged exhaust system.	11. Clean exhaust ports; remove and clean or replace muffler.
	12. Low compression.	12. Recondition or replace valves and valve seats; replace worn piston rings.
	13. Weak valve springs.	13. Install new valve springs.
	14. Reed valve bent.	14. Replace reed and reed valve assembly.
	15. Crankshaft seals or gaskets leaking.	15. Replace faulty seals or gaskets.
	16. Pitted ignition breaker points.	16. Replace pitted breaker points.
	17. Faulty condenser.	17. Replace condenser.
Engine overheats	1. Insufficient oil in fuel mixture.	1. Drain fuel tank and refill with recommended fuel/oil mixture.
	2. Air cooling fins blocked with dirt.	2. Clean areas between cooling fins.
	3. Shroud not in place or screen plugged.	3. Clean shroud and replace it in correct position; clean screen.
	4. Carburetor set too lean.	4. Adjust needle valve for richer fuel/air mixture.
	5. Ignition system out of time.	5. Retime ignition to correct firing point.
	6. Valves out of adjustment.	6. Adjust valves to recommended specifications.
Engine surges, will not hold steady speed	1. Carburetor or fuel tank vents are plugged.	1. Clean vent holes.
	2. Float level set too low.	2. Adjust carburetor float to correct level.
	3. Fuel tank screen or fuel line partly plugged.	3. Clean fuel tank, screen, fuel line, float needle, and seat.
	4. Needle valve not properly adjusted.	4. Adjust needle valve.
	5. Governor linkage binding.	5. Clean and repair governor.
	6. Throttle or shaft binding.	6. Clean and adjust throttle and shaft.
	7. Throttle or governor springs unhooked, or in wrong position.	7. Connect or replace broken throttle or governor spring in correct position.

SMALL ENGINE TROUBLESHOOTING CHART

Problem	Possible Cause	Solution
Engine surges, will not hold steady speed (continued)	8. Carburetor not adjusted properly.	8. Adjust carburetor to recommended specifications.
	9. Carburetor internal parts dirty.	9. Clean or replace carburetor.
	10. Water in fuel.	10. Drain tank, carburetor, and fuel lines; replace with recommended fuel.
Engine functioning well but driven device doesn't work properly	1. Driven device doesn't move.	1. Check belts, chains, and shafts; adjust or replace as needed.
	2. Driven device moves slower than normal.	2. Check belts, chains, and shafts; adjust as needed.
	3. Blade or tines don't cut properly.	3. Sharpen or replace blade or tines; lubricate as needed.
	4. Wheels don't turn properly.	4. Tighten wheels on shaft; check for wear and replace as needed.
	5. Belt or chain slips.	5. Check adjustment bolt or screw; replace if damaged or stripped.
	6. Chain broken.	6. Replace chain link or chain.
Engine lacks power	1. Choke partially closed.	1. Open choke.
	2. Improper carburetor adjustment.	2. Adjust carburetor.
	3. Magneto improperly timed.	3. Time magneto.
	4. Worn rings or piston.	4. Replace rings or piston.
	5. Air cleaner fouled.	5. Clean air cleaner.
	6. Valves leaking.	6. Recondition valves.
	7. Reed valves fouled or sluggish.	7. Clean or replace reed valves.
	8. Incorrect fuel/oil mixture.	8. Drain tank and fill with recommended fuel/oil mixture.
	9. Crankcase seal leaks.	9. Replace worn crankcase seals.
Engine rattles or knocks	1. Piston hitting carbon deposit in upper cylinder.	1. Remove cylinder head or pot and clean carbon from surfaces.
	2. Loose blade, pulley, gear, or clutch on crankshaft.	2. Tighten or replace loose end of part.
	3. Worn cylinder.	3. Repair or replace cylinder.
	4. Magneto improperly timed.	4. Time magneto.
	5. Loose connecting rod cap.	5. Tighten connecting rod bolts and bend up locking lugs.
	6. Worn connecting rod or crankshaft.	6. Replace connecting rod and, if necessary, crankshaft.
	7. Worn main bearings.	7. Replace main bearings and, if necessary, crankshaft.
	8. Loose flywheel.	8. Replace flywheel key and tighten flywheel to correct torque.

SMALL ENGINE TROUBLESHOOTING CHART

Problem	Possible Cause	Solution
Engine rattles or knocks (continued)	9. Blade, pulley, gear, or clutch out of balance.	9. Balance or replace unbalanced part.
	10. Engine loose on mountings.	10. Tighten mounting bolts.
	11. Bent crankshaft.	11. Install new crankshaft.
	12. Flywheel fan blades broken off.	12. Replace flywheel.