Troubleshooting-Guide

Engine Doesn't Start; Starting Difficulty

- Engine won't turn over
  - Cylinder, piston seizure
  - Connecting rod small end seizure
  - Connecting rod big end seizure
  - Transmission gear or crankcase bearing seizure
  - Kickstarter return spring broken
  - Kick ratchet gear not engaging

- No fuel flow
  - No fuel in tank
  - Fuel tap turned off
  - Tank cap air vent obstructed
  - Fuel tap clogged
  - Fuel line clogged
  - Float valve clogged

- Engine flooded
  - Float level too high
  - Fuel valve worn or stuck open
  - Starting technique faulty
    - (When flooded, kick with the throttle fully open to allow more air to reach the engine.)

- No spark; spark weak
  - Ignition switch not on
  - Engine stop switch turned off
  - Spark plug dirty, damaged, or maladjusted
  - Spark plug cap or high tension wiring damaged
  - Spark plug cap or high tension wiring damaged
  - COI unit damaged
  - Signal coil and/or exciter coil open or shorted
  - Ignition coil damaged
  - Ignition coil damaged
  - Ignition or engine stop switch shorted
  - Wiring shorted or open

Fuel/air mixture incorrect
- Air screw and/or idle adjusting screw maladjusted
- Pilot jet or air passage clogged
- Air cleaner clogged, poorly sealed, or missing
- Starter plunger stuck open
- Float level too high or too low
- Fuel tank air vent obstructed

Compression low
- Cylinder, piston worn
- Piston rings bad (worn, weak, broken or sticking)
- Piston ring/land clearance excessive
- Cylinder head or base-gasket damaged
- Cylinder head not sufficiently tightened down
- Cylinder head warped
- Spark plug loose
- Crankshaft oil seal deteriorated or damaged
- Cylinder head hole plug loose
- Reed valve damaged

Poor Running at Low Speed

- Spark weak
  - Spark plug dirty, damaged, or maladjusted
  - Spark plug cap or high tension wiring damaged
  - Spark plug cap or high tension wiring damaged
  - COI unit damaged
  - Signal coil and/or exciter coil shorted or open
  - Ignition coil damaged
  - Flywheel magneto damaged

Fuel/air mixture incorrect
- Main jet clogged or wrong size
- Jet needle or needle jet worn
- Jet needle clip in wrong position
- Float level too high or too low
- Air jet or air passage clogged
- Air cleaner clogged, poorly sealed, or missing
- Starter plunger stuck open
- Fuel to carburetor insufficient
- Water or foreign matter in fuel
- Fuel tank air vent obstructed

Firing incorrect
- Spark plug dirty, damaged, or maladjusted
- Spark plug cap or high tension wiring damaged
- Spark plug cap or high tension wiring damaged
- Signal coil and/or exciter coil damaged or open
- COI unit damaged
- Ignition coil damaged
- Ignition timing maladjusted

Fuel/air mixture incorrect
- Throttle control cable maladjusted
- Crankshaft oil seal deteriorated or damaged
- Oil passage pipe 0 ring damaged
- Oil pump damaged
- Oil line or check valve clogged
- Air in oil pump or oil line

Engine rpm will not rise properly
- Starter plunger stuck open
- Float level too high or too low
Main jet clogged
Throttle valve does not fully open
Air cleaner clogged
Muffler clogged
Water or foreign matter in fuel
Cylinder exhaust port clogged
Brake dragging
Clutch slipping
Overheating
Transmission oil level too high
Transmission oil viscosity too high
Crankshaft bearing worn or damaged

Knocking
Ignition timing maladjusted
Carbon built up in combustion chamber
Fuel poor quality or incorrect

Miscellaneous
Throttle valve won’t fully open
Muffler clogged
Cylinder exhaust port clogged
Brakes dragging
Clutch slipping
Overheating
Transmission oil level too high
Transmission oil viscosity too high
Crankshaft bearing worn or damaged

Overheating
Firing incorrect
Spark plug dirty, damaged, or maladjusted
Ignition timing maladjusted
Fuel/air mixture incorrect
Main jet clogged
Float level too low
Air cleaner clogged
Oil and fuel/air mixture incorrect
Oil pump damaged
Oil line or check valve clogged
Air in oil pump or oil line
Compression high
Carbon built up in combustion chamber
Engine load faulty
Clutch slipping
Transmission oil level too high
Brakes dragging

Fuel and Oil Consumption Excessive
Idling too fast
Idle adjusting screw maladjusted
Throttle control cable catching or poorly adjusted
Fuel/air mixture too rich
Air screw too large
Jet needle or needle jet worn
Starter plunger stuck open
Float level too high
Air cleaner clogged
Compression low
Cylinder, piston worn
Piston rings bad (worn, weak, broken, or sticking)
Piston ring/land clearance excessive
Cylinder head or base gasket damaged

Cylinder head not sufficiently tightened down
Cylinder head warped
Spark plug loose
Crankshaft oil seal deteriorated or damaged
Cylinder head hole plug loose
Reed valve damaged
Exhaust obstructed
Muffler clogged
Cylinder exhaust port clogged
Engine load faulty
Clutch slipping
Transmission oil level too high
Brakes dragging

Clutch Operation Faulty
Clutch slipping
No clutch lever play
Fricction plates worn or warped
Steel plates worn or warped
Clutch springs weak
Clutch cable maladjusted
Clutch inner cable catching
Clutch release mechanism damaged
Clutch hub or housing unevenly worn
Clutch not disengaging properly
Clutch lever play excessive
Clutch plates warped or too rough
Clutch spring tension uneven
Transmission oil deteriorated
Transmission oil viscosity too high
Clutch housing frozen on driveshaft
Clutch release mechanism damaged

Gear Shifting Faulty
Doesn’t go into gear; shift pedal doesn’t return
Clutch not disengaging
Shift fork(s) bent or seized
Shift return spring weak or broken
Shift lever broken
Shift return spring pin loose
Shift pawl spring broken
Set levers binding on pivot screw
External shift mechanism arm pawl worn
Jumps out of gear
Shift fork(s) worn
Gear groove(s) worn
Gear dogs, holes, and/or recesses worn
Shift drum groove(s) worn
Shift drum set lever ‘spring weak or broken-
Shift fork pin(s) worn
Drive shaft, output shaft, and/or gear splines worn
Overshifts
Shift drum lever spring weak or broken

Abnormal Engine Noise
Knocking
Ignition timing maladjusted
Carbon built up in combustion chamber
Fuel poor quality or incorrect
Overheating

Piston slap
- Cylinder/piston clearance excessive
- Cylinder, piston worn
- Connecting rod bent
- Piston pin, piston pin holes worn

Other noise
- Connecting rod small end clearance excessive
- Connecting rod big end clearance excessive
- Piston ring(s) worn broken or stuck
- Piston seizure damage
- Cylinder head gasket leaking
- Exhaust pipe leaking at cylinder connection
- Crankshaft runout excessive
- Engine mounts loose
- Crankshaft bearing worn

Abnormal Drive Train Noise

Clutch noise
- Clutch rubber damper deteriorated
- Clutch housing/friction plate clearance excessive
- Clutch housing gear/primary gear backlash excessive
- Metal chips jammed in clutch housing gear teeth

Transmission noise
- Transmission gears worn or chipped
- Metal chips jammed in gear teeth
- Transmission oil insufficient or too thin
- Kick ratchet gear not properly disengaging from kick gear
- Oil pump gear/output shaft idle gear worn or chipped

Drive chain noise
- Chain worn
- Rear and/or engine sprocket(s) worn
- Chain lubrication insufficient
- Rear wheel misaligned

Abnormal Frame Noise

Front fork noise
- Oil insufficient or too thin
- Spring weak or broken

Hear shock absorber noise
- Shock absorber defective

Brake noise
- Brake linings overworn or worn unevenly
- Drum worn unevenly or scored
- Brake spring(s) weak or broken
- Foreign matter in hub
- Brake not properly adjusted

Other noise
- Brackets, nuts, bolts, etc. not properly mounted or tightened

Exhaust Smoke

Excessive white smoke
- Throttle control cable maladjusted
- Oil poor quality or incorrect
- Cylinder oil seal damaged
- Oil passage pipe O ring deteriorated or damaged

Brownish smoke
- Air cleaner clogged
- Main jet too large or fallen off
- Starter plunger stuck open
- Float level too high

Handling and/or Stability Unsatisfactory

Handlebar hard to turn
- Steering stem locknut too tight
- Bearing balls damaged
- Race(s) dented or worn
- Steering stem lubrication inadequate
- Steering stem bent
- Tire air pressure too low

Handlebar shakes or excessively vibrates
- Tire(s) worn
- Swing arm bushing damaged
- Rim(s) warped
- Front, rear axle runout excessive
- Spokes loose
- Wheel bearing(s) worn
- Handlebar clamps loose

Handlebar pulls to one side
- Frame bent
- Wheel misalignment
- Swing arm bent or twisted
- Swing arm pivot shaft runout excessive
- Steering stem bent
- Front fork leg(s) bent
- Right/left front fork oil level uneven
- Right/left rear shock absorbers unbalanced

Shock absorption unsatisfactory
- Too hard:
  - Front fork oil excessive
  - Front fork oil viscosity too high
  - Tire air pressure too high
  - Rear suspension maladjusted
- Too soft:
  - Front fork oil insufficient and/or leaking
  - Front fork oil viscosity too low
  - Front fork, rear shock absorber spring(s) weak

Brake Doesn't Hold

Brake not properly adjusted
- Linings overworn or worn unevenly
- Drum worn unevenly or scored
- Cam, camshaft, shaft hole worn
- Oil, grease on lining and drum
- Dirt, water between lining and drum
- Overheated

Battery Discharged

Battery faulty (e.g., plates sulphated, shorted through sedimentation, electrolyte level too low)
- Battery leads making poor contact
- Regulator/rectifier damaged
- Ignition switch damaged
- Load excessive (e.g., bulb of excessive wattage)
- Flywheel magneto damaged
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