

ELECTRICAL SYSTEM TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	CORRECTION
STARTER MOTOR FAILS TO OPERATE	<p>Discharged battery.</p> <p>Faulty starter motor, electromagnetic switch, or switch circuit.</p>	<p>Determine battery's state of charge. Recharge or replace battery, as necessary.</p> <p>With battery well charged, bypass the electromagnetic switch by short circuiting the switch terminals.</p> <p>If starter motor still does not operate, the problem is in the starter motor. Check brushes and commutator. Repair or replace starter motor, as necessary.</p> <p>If starter motor does operate, the problem is in the switch or switch circuit. Test switch and check circuit continuity.</p>
ENGINE FAILS TO START (other than electric starter problems).	<p>Fuel system problem.</p> <p>Discharged battery (battery ignition systems only).</p> <p>Fouled, worn, or damaged spark plugs.</p> <p>Faulty ignition contact points and/or incorrect ignition timing.</p> <p>Ignition system has open circuit or short circuit.</p>	<p>Check to be certain that there is fuel in the fuel tank and that fuel flows freely to the carburetor. If the engine has become flooded, clear the combustion chamber by cranking the engine several times with the throttle and choke open.</p> <p>Determine battery's state of charge. Recharge or replace battery, as necessary (if battery is not completely discharged, it may be possible to start the motorcycle using the kickstarter rather than the electric starter).</p> <p>Remove and inspect spark plugs. Replace if fouled, worn, or damaged. Select correct heat range for your operating conditions. Check electrode gap.</p> <p>Ignition system can be tested by cranking the engine with the spark plug lead connected to the spark plug, and the spark plug grounded against the exterior of the engine. The plug should produce a visible spark, if the ignition system is functioning.</p> <p>Inspect ignition contact points, Replace if worn, burned, or pitted (also replace capacitor if points appear abnormally burned or pitted). Adjust gap or dwell and ignition timing.</p> <p>Check electrical continuity of applicable wiring and switches. Repair or replace, as necessary.</p>

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<p>ENGINE FAILS TO START (other than electric starter problems).</p> <p>(continued from page 61)</p>	<p>Faulty magneto (magneto ignition systems only).</p> <p>Faulty ignition coil.</p> <p>No cylinder compression, or very low compression.</p>	<p>Isolate magneto coil from other circuit components, and check electrical continuity of coil windings. Replace magneto coil if it has an open circuit. Refer to shop manual for wiring diagram or special instructions.</p> <p>Disconnect ignition coil and check electrical continuity of primary and secondary coil windings (refer to shop manual to determine whether primary and secondary windings are separated or connected in your model). Replace ignition coil if there is an open circuit.</p> <p>Test ignition coil performance if test equipment is available (refer to shop manual) or obtain dealer assistance.</p> <p>Repair engine.</p>
<p>HARD STARTING, POOR IDLE</p>	<p>Fouled, worn, or damaged spark plugs.</p> <p>Faulty ignition contact points and/or incorrect ignition timing.</p> <p>Faulty magneto (magneto ignition systems only).</p> <p>Faulty ignition coil.</p> <p>Faulty or mis-adjusted carburetors.</p> <p>Low cylinder compression (may cause hard starting, poor idle, and loss of power).</p>	<p>See correction listed under ENGINE FAILS TO START.</p> <p>Repair, clean, and adjust, as necessary.</p> <p>Repair engine.</p>

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ENGINE BACKFIRES.	<p>Incorrect ignition timing.</p> <p>Incorrect air-fuel mixture ratio.</p>	<p>Adjust ignition timing.</p> <p>Adjust carburetors.</p>
<p>SPARK PLUGS SHOW SIGNS OF OVERHEATING.</p> <p>ENGINE OVERHEATS.</p> <p>PISTON SEIZURE.</p>	<p>Excessively advanced ignition timing.</p> <p>Carburetor mixture too lean.</p> <p>Detonation.</p> <p>Preignition.</p> <p>Incorrect spark plug heat range (plug is too hot).</p> <p>Loss of engine oil, loss of coolant (liquid cooled engines), restricted air flow.</p>	<p>Adjust ignition timing</p> <p>Adjust, repair, or change jets, as necessary.</p> <p>Follow fuel octane recommendations for your model. Avoid lugging the engine.</p> <p>Determine and correct cause of hot spots in combustion chamber (e.g. carbon deposits, incorrect spark plug heat range).</p> <p>Install correct spark plug heat range.</p> <p>Repair as necessary.</p>
SPARK PLUGS FOUL.	<p>Excessive use of choke.</p> <p>Excessive idling and low rpm use.</p> <p>Carburetor mixture too rich.</p> <p>Incorrect spark plug heat range (plug is too cold).</p>	<p>Open choke as soon as engine warms up.</p> <p>Avoid excessive idling time. Run at normal rpm in gear.</p> <p>Adjust, repair, or change jets, as necessary.</p> <p>Install correct spark plug heat range.</p>

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<p>SPARK PLUGS FOUL.</p> <p>(continued from page 63).</p>	<p>Insufficient firing voltage.</p> <p>Excessive oil in combustion chamber.</p>	<p>Check ignition system components. Adjust or replace, as necessary.</p> <p>TWO-STROKE ENGINES: Use correct oil-fuel mixture.</p> <p>FOUR-STROKE ENGINES: Replace worn valve guides, worn piston rings, or damaged pistons.</p>
<p>BATTERY DOES NOT BECOME FULLY CHARGED, OR IS PERSISTENTLY DISCHARGED.</p>	<p>Infrequent motorcycle use, low rpm operation, excessive use of electric starter.</p> <p>Low battery electrolyte level.</p> <p>Faulty battery.</p> <p>Open circuit in charging system, poor contact at battery terminals, or short circuits anywhere on the motorcycle.</p> <p>Faulty generator, rectifier, or voltage regulator.</p>	<p>If motorcycle usage precludes normal charging, the battery must be periodically removed and connected to a battery charger.</p> <p>Check electrolyte level, and add water as necessary.</p> <p>Remove battery from motorcycle and connect to a battery charger. Check battery voltage and specific gravity after charging. Replace battery if it cannot be fully charged or will not retain a charge.</p> <p>Check circuit continuity. Repair open or short circuit. Clean battery terminals and cables, and connect securely.</p> <p>Refer to shop manual for wiring diagram, testing procedure, and specifications.</p>
<p>BATTERY BECOMES OVERCHARGED.</p> <p>EXCESSIVE WATER LOSS FROM ELECTROLYTE.</p>	<p>Faulty voltage regulator.</p>	<p>Replace voltage regulator.</p>

