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ENGINE DOES NOT START OR IS HARD TO START

1. Spark Plug Inspection

Remove and inspect spark plug.

Are the spark plugs in good condition?

- NO – • Incorrect spark plug heat range
• Incorrect spark plug gap
• Dirty air cleaner

YES – GO TO STEP 2.

2. Spark Test

Perform spark test.

Are there good sparks?

- NO – • Loose or disconnected ignition system wire
• Faulty ignition coil
• Broken or shorted direct ignition coil connector wire
• Faulty ignition pulse generator
• Faulty engine stop switch
• Faulty engine control module (ECM)

YES – GO TO STEP 3.

3. Fuel Pump Inspection

Check for operation of the fuel pump and inspect the fuel flow.

Is the fuel pump unit normal?

- NO – Faulty fuel pump unit (page 6-58).

YES – GO TO STEP 4.

4. Programmed Fuel Injection System Inspection

Check the fuel injection system.

Is the fuel injection system normal?

- NO – Faulty fuel injection system (page 6-79), (page 6-67).

YES – GO TO STEP 5.

5. Cylinder compression Inspection

Test the cylinder compression.

Is the compression specified?

- NO – • Valve stuck open
• Worn cylinder and piston rings
• Damaged cylinder head gasket
• Seized valves
• Improper valve timing

YES – GO TO STEP 6.

6. Engine Start Condition

Start by following normal procedure.

Did the engine start but stops?

- YES – • Leaking intake manifold
• Leaking intake pipes
• Faulty starter valves
• Improper ignition timing (Faulty ECM or ignition pulse generator)
• Contaminated fuel

ENGINE LACKS POWER

1. Drive Train Inspection

Raise wheel off the ground and spin by hand.

Did the wheel spin freely?

- NO – • Brake dragging
• Worn or damaged wheel bearings

YES – GO TO STEP 2.

2. Tire Pressure Inspection

Check the tire pressure.

Is the tire pressure correct?

- NO – • Faulty tire valve
• Punctured tire

YES – GO TO STEP 3.

3. Clutch Inspection

Accelerate rapidly, shift from first to second.

Did the engine speed change accordingly when clutch is released?

- NO – • Clutch slipping
• Worn clutch discs/plates
• Warped clutch discs/plates
• Weak clutch spring
• Additive in engine oil

YES – GO TO STEP 4.

4. Engine Performance Inspection

Accelerate lightly.

Did the Engine speed increase?

- NO – • Dirty air cleaner
• Restricted fuel flow
• Clogged muffler

YES – GO TO STEP 5.

5. Spark Plug Inspection

Remove and inspect spark plugs.

Are the spark plugs in good condition?

- NO – • Plugs not serviced frequently enough
• Incorrect spark plug heat range
• Incorrect spark plug gap

YES – GO TO STEP 6.

6. Engine Oil Inspection

Check the oil level and condition.

Is the engine oil in good condition?

- NO – • Oil level too high
• Oil level too low
• Contaminated oil

YES – GO TO STEP 7.

7. Ignition Timing Inspection

Check the ignition timing.

Is the ignition timing as specified?

- NO – • Faulty engine control module (ECM)
• Faulty ignition pulse generator
• Improper valve timing

YES – GO TO STEP 8.

TROUBLESHOOTING

8. Cylinder compression Inspection

Test the cylinder compression.

Is the compression as specified?

- NO** – • Valve clearance too small
• Valve stuck open
• Worn cylinder and piston rings
• Damaged cylinder head gasket
• Improper valve timing

YES – GO TO STEP 9.

9. Fuel Pump Inspection

Inspect the fuel flow.

Is the fuel pump unit normal?

NO – Faulty fuel pump unit (page 6-58).

YES – GO TO STEP 10.

10. Programmed Fuel Injection System Inspection

Check the fuel injection system.

Is the fuel injection system normal?

NO – Faulty fuel injection system (page 6-79), (page 6-67).

YES – GO TO STEP 11.

11. Lubrication Inspection

Remove cylinder head cover and inspect lubrication.

Is the valve train lubricated properly?

- NO** – • Faulty oil pump
• Faulty pressure regulator valve
• Clogged oil strainer
• Clogged oil passage

YES – GO TO STEP 12.

12. Over Heating Inspection

Check for engine over heating.

Is the engine over heating?

- YES** – • Coolant level too low
• Fan motor not working
• Thermostat stuck closed
• Excessive carbon build-up in combustion chamber
• Use of poor quality fuel
• Wrong type of fuel
• Clutch slipping

NO – GO TO STEP 13.

13. Engine Knocking Inspection

Accelerate or run at high speed.

Is the engine knocking?

- YES** – • Worn piston and cylinder
• Wrong type of fuel
• Excessive carbon build-up in combustion chamber
• Ignition timing too advance (Faulty ECM)
• Faulty ignition pulse generator
• Faulty cam pulse generator

NO – • Engine does not knock

POOR PERFORMANCE AT LOW AND IDLE SPEED

1. Spark Plug Inspection

Remove and inspect spark plugs.

Are the spark plugs in good condition?

- NO** – • Plugs not serviced frequently enough
• Incorrect spark plug heat range
• Incorrect spark plug gap

YES – GO TO STEP 2.

2. Ignition Timing Inspection

Check the ignition timing.

Is the ignition timing as specified?

- NO** – • Faulty engine control module (ECM)
• Faulty ignition pulse generator
• Faulty cam pulse generator
• Faulty vehicle speed sensor
• Improper valve timing

YES – GO TO STEP 3.

3. Fuel Pump Inspection

Inspect the fuel flow.

Is the fuel pump unit normal?

- NO** – Faulty fuel pump unit (page 6-58).

YES – GO TO STEP 4.

4. Programmed Fuel Injection System Inspection

Check the fuel injection system.

Is the fuel injection system normal?

- NO** – Faulty fuel injection system (page 6-79), (page 6-67).

YES – GO TO STEP 5.

5. Starter Valve Synchronization Inspection

Check the starter valve synchronization.

Is the starter valve synchronization as specified?

- NO** – Adjust the starter valve synchronization (page 6-86).

YES – GO TO STEP 6.

6. Intake Pipes Leaking Inspection

Check for leaks at the intake manifold pipes.

Are there leaks?

- YES** – • Loose insulator
• Damaged insulator

POOR PERFORMANCE AT HIGH SPEED

1. Ignition Timing Inspection

Check the ignition timing.

Is the ignition timing as specified?

- NO – • Faulty engine control module (ECM)
• Faulty ignition pulse generator
• Faulty cam pulse generator
• Faulty vehicle speed sensor
• Improper valve timing

YES – GO TO STEP 2.

2. Fuel Pump Inspection

Inspect the fuel flow.

Is the fuel pump unit operation normal?

- NO – Faulty fuel pump unit (page 6-58).

YES – GO TO STEP 3.

3. Programmed Fuel Injection System Inspection

Check the fuel injection system.

Is the fuel injection system operation normal?

- NO – Faulty fuel injection system (page 6-79), (page 6-67).

YES – GO TO STEP 4.

4. Valve Timing Inspection

Check the valve timing.

Is the valve timing correct?

- NO – Camshafts not installed properly

YES – GO TO STEP 5.

5. Valve Spring Inspection

Check for the valve springs.

Is the valve spring free length as specified?

- NO – Faulty valve springs

YES – Not weak

POOR HANDLING

Steering is heavy

- Steering stem adjusting nut too tight
- Damaged steering head bearings
- Low tire pressure

Either wheel is wobbling

- Excessive wheel bearing play
- Bent rim
- Swingarm pivot bearing excessively worn
- Bent frame

The motorcycle pulls to one side

- Front and rear wheel not aligned
- Faulty shock absorber
- Bent fork
- Bent swingarm
- Bent axle
- Bent frame