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ENGINE DOES NOT START OR IS HARD TO START**1. Spark Plug Inspection**

Remove and inspect spark plug.

Are there 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** – • Faulty spark plug
• Loose or disconnected ignition system wires
• Faulty ignition coil
• Broken or shorted spark plug wire
• Faulty ignition pulse generator
• Faulty engine stop switch
• Faulty PGM-FI IGNITION relay
• Faulty engine control module (ECM)

YES – GO TO STEP 3.

3. Programmed Fuel Injection System Inspection

Check the fuel injection system.

Is the fuel injection system normally?

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

YES – GO TO STEP 4.

4. 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 valve
• Improper valve timing

YES – GO TO STEP 5.

5. Engine Start Condition

Start by following normal procedure.

Did the engine start but stops?

- Yes** – • Leaking intake manifold gasket
• Faulty idle air control valve
• 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
• Dirty air cleaner

YES – GO TO STEP 2.

2. Tire Pressure Inspection

Check the tire pressure.

Are there tire pressure correct?

- NO – • Faulty tire valve
• Punctured tire

YES – GO TO STEP 3.

3. Clutch Inspection

Accelerate rapidly low 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
• Faulty hydraulic assist system
• Additive in engine oil

YES – GO TO STEP 4.

4. Engine Performance Inspection

Accelerate lightly.

Did the Engine speed increase?

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

YES – GO TO STEP 5.

5. Spark Plug Inspection

Remove and inspect spark plug.

Are there 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 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 specified?

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

YES – GO TO STEP 8.

8. Cylinder compression Inspection

Test the cylinder compression.

Is the compression specified?

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

YES – GO TO STEP 9.

9. Programmed Fuel Injection System Inspection

Check the fuel injection system.

Is the fuel injection system normally?

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

YES – GO TO STEP 10.

10. Lubrication Inspection

Remove cylinder head cover and inspect lubrication.

Is the Valve train lubricated properly?

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

YES – GO TO STEP 11.

11. Over Heating Inspection

Check for engine over heating.

Is the engine over heating?

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

NO – GO TO STEP 12.

12. Engine Knocking Inspection

Accelerate or run at high speed.

Is the engine knocking?

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

NO – • Engine does not knock

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
• Dirty air cleaner

YES – GO TO STEP 2.

2. Tire Pressure Inspection

- Check the tire pressure.
Are there tire pressure correct?
NO – • Faulty tire valve
• Punctured tire

YES – GO TO STEP 3.

3. Clutch Inspection

- Accelerate rapidly low to second.
Did the engine speed change according?
NO – • Clutch slipping
• Worn clutch disc/pistons
• Worn clutch disc/pistons
• Weak clutch spring
• Faulty hydraulic system
• Additive in engine oil

YES – GO TO STEP 4.

4. Engine Performance Inspection

- Accelerate lightly.
Did the engine speed increase?
NO – • Clogged air cleaner
• Restricted fuel flow
• Clogged muffler

YES – GO TO STEP 5.

5. Spark Plug Inspection

- Remove and inspect spark plug.
Are there spark plugs in good condition?
NO – • Plugs not serviced frequently
• 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 good condition?
NO – • Oil level too high
• Oil level too low
• Contaminated oil

YES – GO TO STEP 7.

POOR PERFORMANCE AT LOW AND IDLE SPEED

1. Spark Plug Inspection

Remove and inspect spark plug.

Are there 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 specified?

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

YES – GO TO STEP 3.

3. Programmed Fuel Injection System Inspection

Check the fuel injection system.

Is the fuel injection system normally?

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

YES – GO TO STEP 4.

4. Starter Valve Synchronization Inspection

Check the starter valve synchronization.

Is the starter valve synchronization specified?

- NO** – Adjust the starter valve synchronization (page 6-73).

YES – GO TO STEP 5.

5. Intake Pipe Leaking Inspection

Check for leaks intake manifold pipe.

Is there leaking?

- YES** – • Loose insulator
• Damaged insulator

POOR PERFORMANCE AT HIGH SPEED

1. Ignition Timing Inspection

Check the ignition timing.

Is the ignition timing specified?

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

YES – GO TO STEP 2.

2. Programmed Fuel Injection System Inspection

Check the fuel injection system.

Is the fuel injection system normally?

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

YES – GO TO STEP 3.

3. Valve Timing Inspection

Check the valve timing.

Did the valve timing correct?

- NO** – Camshafts not installed properly

YES – GO TO STEP 4.

4. Valve Spring Inspection

Check for the valve springs.

Is the valve spring free length as specified?

- NO** – Faulty valve spring

YES – Not weak

POOR HANDLING

Steering is heavy

- Steering bearing adjustment nut too tight
- Damaged steering head bearings

Either wheel is wobbling

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

The motorcycle pulled to one side

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