# 23. TROUBLESHOOTING

# ENGINE DOES NOT START OR IS HARD TO START

1. **Fuel Line Inspection**

   Check fuel flow to throttle body.

   ***Does fuel reach the throttle body?***

   **NO** – • Clogged fuel line and strainer
   • Clogged fuel tank breather
   • Faulty fuel pump unit (page 5-58)

   **YES** – GO TO STEP 2.

2. **Spark Plug Inspection**

   Remove and inspect spark plugs.

   ***Are the spark plugs in good condition?***

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

   **YES** – GO TO STEP 3.

3. **Spark Test**

   Perform spark test.

   ***Is there weak or no spark?***

   **YES** – • Faulty spark plug
   • Loose or disconnected ignition system wires
   • Broken or shorted spark plug wire
   • Faulty CKP sensor
   • Faulty ignition coil
   • Faulty engine stop relay
   • Faulty ECM
   • Faulty engine stop switch

   **NO** – GO TO STEP 4.

4. **PGM-FI System Inspection**

   Check the PGM-FI system.

   ***Is the PGM-FI system normal?***

   **YES** – GO TO STEP 5.

   **NO** – Faulty PGM-FI system (page 5-13)

5. **Cylinder Compression**

   Test cylinder compression.

   ***Is the compression low?***

   **YES** – • Valve clearance too small
   • Valve stuck open
   • Worn cylinder and piston rings
   • Damaged cylinder head gasket
   • Improper valve timing

   **NO** – GO TO STEP 6.

6. **Engine Starting Condition**

   Start engine by following normal procedure.

   ***Does the engine start then stops?***

   **YES** – • Leaking intake manifold
   • Faulty IACV
   • Improper ignition timing (Faulty ECM, CKP sensor or TP sensor)
   • Contaminated fuel

# ENGINE LACKS POWER

1. **Drive Train Inspection**

   Raise wheel off the ground and spin it by hand.

   ***Does the wheel spin freely?***

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

   **YES** – GO TO STEP 2.

2. **Tire Pressure Inspection**

   Check tire pressure.

   ***Are the tire pressures low?***

   **YES** – • Faulty tire valve
   • Punctured tire

   **NO** – GO TO STEP 3.

3. **Clutch Inspection**

   Accelerate rapidly, shift from first to second.

   ***Does the engine speed change accordingly when clutch is engaged?***

   **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.

   ***Does the engine speed increase?***

   **NO** – • Dirty air cleaner
   • Restricted fuel flow
   • Clogged muffler
   • Clogged fuel tank breather

   **YES** – GO TO STEP 5.

5. **Engine Condition Inspection**

   Accelerate or run at high speed.

   ***Is there knocking?***

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

   **NO** – GO TO STEP 6.

6. **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 7.

**7. Engine Oil Inspection**

Check oil level and condition.

***Is there correct level and good condition?***

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

**YES** – GO TO STEP 8.

**8. Ignition Timing Inspection**

Check ignition timing.

***Is the ignition timing correct?***

**NO** – • Faulty ECM
• Faulty CKP sensor
• Faulty TP sensor
• Improper valve timing

**YES** – GO TO STEP 9.

**9. Cylinder Compression Inspection**

Test cylinder compression.

***Is the compression low?***

**YES** – • Valve clearance too small
• Valve stuck open
• Worn cylinder and piston rings
• Damaged cylinder head gasket
• Improper valve timing

**NO** – GO TO STEP 10.

**10. PGM-FI System Inspection**

Check the PGM-FI system.

***Is the PGM-FI system normal?***

**NO** – Faulty PGM-FI system (page 5-13)

**YES** – GO TO STEP 11.

**11. Lubrication Inspection**

Remove cylinder head cover and inspect for proper lubrication.

***Is the valve train lubricated properly?***

**NO** – • Faulty oil pump
• Faulty oil pressure relief valve
• Clogged oil passage
• Clogged oil orifice

**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
• Thermostat stuck closed
• Excessive carbon build-up in combustion chamber
• Ignition timing too advance (Faulty ECM)
• Faulty CKP sensor

**NO** – • Engine does not knock.

# POOR PERFORMANCE AT LOW AND IDLE SPEED

**1. Intake Air Leak Inspection**

Check for leaking at insulators.

***Are there leaks?***

**YES** – • Loose insulator bands
• Loose insulator mounting bolts
• Damaged insulator
• Faulty O-ring

**NO** – GO TO STEP 2.

**2. Spark Test**

Perform spark test.

***Is there weak or intermittent spark?***

**YES** – • Faulty spark plug
• Fouled spark plug
• Loose or disconnected ignition system wires
• Faulty CKP sensor
• Faulty ignition coil
• Faulty engine stop switch
• Faulty ECM

**NO** – GO TO STEP 3.

**3. Fuel Pump Inspection**

Inspect the fuel flow.

***Is the fuel pump unit normal?***

**YES** – GO TO STEP 4.

**NO** – Faulty fuel pump unit (page 5-58)

**4. Ignition Timing Inspection**

Check ignition timing.

***Is the ignition timing correct?***

**NO** – • Faulty ECM
• Faulty CKP sensor
• Faulty TP sensor
• Improper valve timing

**YES** – GO TO STEP 5.

**5. PGM-FI System Inspection**

Check the PGM-FI system.

***Is the PGM-FI system normal?***

**NO** – Faulty PGM-FI system (page 5-13)

**YES** – GO TO STEP 6.

6. **IACV Inspection**

   Check the IACV operation.

   ***Does the IACV operates normally?***

   **NO** – Faulty IACV

# POOR PERFORMANCE AT HIGH SPEED

1. **Ignition Timing Inspection**

   Check ignition timing.

   ***Is the ignition timing correct?***

   **NO** – • Faulty ECM
   • Faulty CKP sensor
   • Faulty TP sensor

   **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

   **YES** – GO TO STEP 3.

3. **PGM-FI System Inspection**

   Check the PGM-FI system.

   ***Is the PGM-FI system normal?***

   **NO** – Faulty PGM-FI system (page 5-13)

   **YES** – GO TO STEP 4.

4. **Valve Timing Inspection**

   Check valve timing.

   ***Is the valve timing correct?***

   **NO** – Cam sprockets not installed properly

   **YES** – GO TO STEP 5.

5. **Valve Spring Inspection**

   Check valve springs.

   ***Is the valve spring free length within specification?***

   **NO** – Faulty valve spring

   **YES** – GO TO STEP 6.

6. **Camshaft Inspection**

   Remove and inspect the camshaft.

   ***Is the cam lobe height within specification?***

   **NO** – Faulty camshaft

   **YES** – Camshaft is OK.

# POOR HANDLING

**Steering is heavy**
- Steering top thread too tight
- Damaged steering head bearings
- Low tire pressure

**Either wheel is wobbling**
- Excessive wheel bearing play
- Bent rim
- Improperly installed wheel hub
- Excessively worn swingarm pivot bearings
- Bent frame

**Motorcycle pulled to one side**
- Front and rear wheels not aligned
- Bent fork
- Bent swingarm
- Bent axle
- Bent frame