24. TROUBLESHOOTING

ENGINE DOES NOT START OR IS HARD TO START

1. **Spark Plug Inspection**

   Remove and inspect spark plugs.

   Is the spark plug in good condition?

   YES – GO TO STEP 2.

   NO – • Incorrect spark plug heat range
   • Incorrect spark plug gap

2. **Spark Test**

   Perform spark test.

   Is there weak or no spark?

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

   NO – GO TO STEP 3.

3. **Fuel Pump Inspection**

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

   Is the fuel pump normal?

   YES – GO TO STEP 4.

   NO – Faulty fuel pump unit

4. **PGM-FI System Inspection**

   Check the PGM-FI system (page 6-11).

   Is the PGM-FI system normal?

   YES – GO TO STEP 5.

   NO – Faulty PGM-FI system (page 6-14)

5. **Cylinder Compression Inspection**

   Test cylinder compression.

   Is the compression as specified?

   YES – GO TO STEP 6.

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

6. **Engine Start Condition**

   Start engine by following normal procedure.

   Does the engine start but then stops?

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

ENGINE LACKS POWER

1. **Drive Train Inspection**

   Raise wheel off the ground and spin it by hand.

   Does the wheel spin freely?

   YES – GO TO STEP 2.

   NO – • Brake dragging
   • Worn or damaged wheel bearing
   • Worn or damaged final gear bearing
   • Worn or damaged driven flange bearing
   • Bent axle
   • Bent drive shaft

2. **Tire Pressure Inspection**

   Check the tire pressure.

   Are the tire pressures low?

   YES – • Faulty tire valve
   • Punctured tire

   NO – GO TO STEP 3.

3. **Clutch Inspection**

   Accelerate rapidly from low to second.

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

   YES – GO TO STEP 4.

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

4. **Engine Performance Inspection**

   Accelerate lightly.

   Does the engine speed increase?

   YES – GO TO STEP 5.

   NO – • Dirty air cleaner element
   • Restricted fuel flow
   • Clogged exhaust system

5. **Spark Plug Inspection**

   Remove and inspect spark plugs.

   Is the spark plug fouled or discolored?

   YES – • Plugs not serviced frequently enough
   • Incorrect spark plug heat range
   • Incorrect spark plug gap

   NO – GO TO STEP 6.

6. **Engine Oil Inspection**

   Check the oil level and condition.

   Is there correct level and good condition?

   YES – GO TO STEP 7.

   NO – • Engine oil level too high
   • Engine oil level too low
   • Contaminated engine oil

7. **Ignition Timing Inspection**

   Check the ignition timing.

   Is the ignition timing as specified?

   YES – GO TO STEP 8.

   NO – • Faulty ECM
   • Faulty CKP sensor

8. **Cylinder Compression Inspection**

   Test cylinder compression.

   Is the compression as specified?

   YES – GO TO STEP 9.

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

9. **Fuel pump Inspection**

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

   Is the fuel pump normal?

   YES – GO TO STEP 10.

   NO – Faulty fuel pump unit

10. **PGM-FI System Inspection**

    Check the PGM-FI system (page 6-11).

    Is the PGM-FI System normal?

    YES – GO TO STEP 11.

    NO – Faulty PGM-FI system (page 6-14)

11. **Lubrication Inspection**

    Remove cylinder head cover and inspect lubrication.

    Is the valve train lubricated properly?

    YES – GO TO STEP 12.

    NO – • Clogged oil passage
    • Clogged oil filter
    • Faulty oil pump or oil pressure relief valve

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
    • Wrong type of fuel
    • Clutch slipping

    NO – GO TO STEP 13.

13. **Engine Knocking 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 advance (Faulty ECM)
    • Lean fuel mixture
    • Faulty CKP sensor

POOR PERFORMANCE AT LOW AND IDLE SPEED

1. **Intake Air Leak Inspection**

   Check the intake manifold or insulator for leaks.

   Are these leaks?

   YES – • Loose insulator band screw
   • Loose intake manifold mounting socket bolts
   • Damaged insulator
   • Faulty O-rings

   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 switch
   • Faulty ignition coil
   • Faulty ECM
   • Faulty engine stop switch

   NO – GO TO STEP 3.

3. **Fuel Pump Inspection**

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

   Is the fuel pump normal?

   YES – GO TO STEP 4.

   NO – Faulty fuel pump unit

4. **Ignition Timing Inspection**

   Check the ignition timing.

   Is the ignition timing as specified?

   YES – GO TO STEP 5.

   NO – • Improper valve clearance
   • Faulty ECM
   • Faulty CKP sensor

5. **PGM-FI System Inspection**

   Check the PGM-FI system (page 6-11).

   Is the PGM-FI system normal?

   NO – Faulty PGM-FI system (page 6-14)

POOR PERFORMANCE AT HIGH SPEED

1. **Fuel Pump Inspection**

   Inspect the fuel flow.

   Is the fuel pump normal?

   YES – GO TO STEP 2.

   NO – Faulty fuel pump unit

2. **PGM-FI System Inspection**

   Check the PGM-FI system (page 6-11).

   Is the PGM-FI system normal?

   YES – GO TO STEP 3.

   NO – Faulty PGM-FI system (page 6-14)

3. **Ignition Timing Inspection**

   Check the ignition timing.

   Is the ignition timing as specified?

   YES – GO TO STEP 4.

   NO – • Improper valve clearance
   • Faulty ECM
   • Faulty CKP sensor

4. **Valve Timing Inspection**

   Check the valve timing.

   Is the valve timing correct?

   YES – GO TO STEP 5.

   NO – Cam sprockets not installed properly

5. **Valve Spring Inspection**

   Check the valve springs.

   Is the valve spring free length within specification?

   YES – GO TO STEP 6.

   NO – Faulty valve spring

6. **Camshaft Inspection**

   Remove and inspect the camshaft.

   Is the cam lobe height within specification?

   YES – Camshaft is OK

   NO – Faulty camshaft

POOR HANDLING

Steering is heavy
- Steering top thread too tight
- Worn or damaged steering head bearings
- Low tire pressure

Either wheel is wobbling
- Excessive wheel bearing play
- Bent rim
- Axle fastener not tightened properly
- Excessively worn swingarm pivot bearings
- Bent frame

Motorcycle pulls to one side
- Bent fork
- Bent swingarm
- Bent axle
- Bent frame