16. TROUBLESHOOTING

ENGINE DOES NOT START OR IS HARD TO START

1. **Carburetor Inspection**

   Check the fuel flow to carburetor.

   Is fuel reaching the carburetor?

   NO – • Clogged fuel line and strainer
   • Clogged fuel tank breather hose

   YES – GO TO STEP 2.

2. **Spark Test**

   Perform a spark test.

   Is there a good spark?

   NO – • Faulty spark plug
   • Fouled spark plug
   • Faulty ignition control module
   • Broken or shorted spark plug wire
   • Faulty igniting pulse generator
   • Faulty engine stop switch or ignition switch
   • Loose or disconnected ignition system wires

   YES – GO TO STEP 3.

3. **Spark Plug Inspection**

   Remove and inspect spark plug.

   Is the spark plug in good condition?

   NO – • Flooded carburetor
   • Choke valve closed
   • Air cleaner dirty

   YES – GO TO STEP 4.

4. **Engine Start Condition**

   Start by following the normal procedure.

   Does the engine start but then stop?

   YES – • Improper choke operation
   • Carburetor incorrectly adjusted
   • Intake pipe leaking
   • Improper ignition timing (faulty ignition coil or ignition pulse generator)
   • Fuel contaminated

   NO – GO TO STEP 5.

5. **Cylinder Compression Inspection**

   Test cylinder compression.

   Is the compression normal?

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

ENGINE LACKS POWER

1. **Drive Train Inspection**

   Raise wheel off the ground and spin 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 the tire pressure.

   Is the tire pressure correct?

   NO – • Faulty tire valve
   • Punctured tire

   YES – GO TO STEP 3.

3. **Clutch Inspection**

   Accelerate rapidly from low to second.

   Does 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.

   Does the engine speed increase?

   NO – • Choke valve closed
   • Clogged air cleaner
   • Restricted fuel flow
   • Clogged muffler
   • Pinched fuel tank breather hose

   YES – GO TO STEP 5.

5. **Ignition Timing Inspection**

   Check the ignition timing.

   Is the ignition timing normal?

   NO – • Faulty ignition control module
   • Faulty ignition pulse generator

   YES – GO TO STEP 6.

6. **Cylinder Compression Inspection**

   Test cylinder compression.

   Is the compression normal?

   NO – • Valve clearance too small
   • Worn cylinder and piston ring
   • Leaking head gasket
   • Seized valve
   • Improper valve timing

   YES – GO TO STEP 7.

7. **Carburetor Inspection**

   Check the carburetor for clogs.

   Is the carburetor clogged?

   YES – Carburetor not serviced frequently enough

   NO – GO TO STEP 8.

8. **Spark Plug Inspection**

   Remove and inspect the spark plug.

   Is the spark plug in good condition?

   NO – • Plug not serviced frequently enough
   • Incorrect spark plug heat range

   YES – GO TO STEP 9.

9. **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 10.

10. **Lubrication Inspection**

    Remove cylinder head cover and inspect lubrication.

    Is the valve train lubricated properly?

    NO – • Clogged oil passage
    • Clogged oil control orifice

    YES – GO TO STEP 11.

11. **Over Heating Inspection**

    Check for engine over heating.

    Is the engine over heating?

    YES – • Excessive carbon build-up in combustion chamber
    • Use of poor quality fuel
    • Clutch slipping
    • Lean fuel mixture
    • Wrong type of fuel

    NO – GO TO STEP 12.

12. **Engine Knocking Inspection**

    Accelerate or run at high speed.

    Does the engine knock?

    YES – • Worn piston and cylinder
    • Wrong type of fuel
    • Excessive carbon build-up in combustion chamber
    • Ignition timing too advanced (faulty ignition control module)
    • Lean fuel mixture

POOR PERFORMANCE AT LOW AND IDLE SPEED

1. **Carburetor Air Screw Inspection**

   Check the carburetor air screw adjustment.

   Is the air screw correct?

   NO – (page 5-13)

   YES – GO TO STEP 2.

2. **Intake Manifold Leaking Inspection**

   Check for leaks in the intake Manifold.

   Is there leaking?

   YES – • Loose carburetor mounting bolts
   • Damaged insulator

   NO – GO TO STEP 3.

3. **Spark Test**

   Perform a spark test.

   Is there a good spark?

   NO – • Faulty or fouled spark plug
   • Faulty ignition control module
   • Faulty ignition coil
   • Broken or shorted spark plug wire
   • Faulty engine stop switch or ignition switch
   • Faulty ignition pulse generator
   • Loose or disconnected ignition system wires

   YES – GO TO STEP 4.

4. **Ignition Timing Inspection**

   Check the ignition timing.

   Is the ignition timing normal?

   NO – Improper ignition timing (Faulty ignition control module)

POOR PERFORMANCE AT HIGH SPEED

1. **Fuel Line Inspection**

   Disconnect the fuel hose at the carburetor.

   Does the fuel flow freely?

   NO – • Clogged fuel line
   • Clogged fuel tank breather hose
   • Faulty fuel valve
   • Clogged fuel strainer

   YES – GO TO STEP 2.

2. **Carburetor Inspection**

   Remove the carburetor and check for clogged jets.

   Are the jets clogged?

   YES – Clean

   NO – GO TO STEP 3.

3. **Valve Timing Inspection**

   Check the valve timing.

   Is the valve timing correct?

   NO – Cam sprocket not installed properly

   YES – GO TO STEP 5.

4. **Ignition Timing Inspection**

   Check the ignition timing.

Is the ignition timing normal?

NO – • Faulty ignition control module
• Faulty ignition pulse generator

YES – GO TO STEP 5.

5. **Valve Spring Inspection**

Check the valve springs.

Is the valve spring free length normal?

NO – Faulty spring

YES – Not weak

POOR HANDLING

Steering is heavy
- Steering stem adjusting 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 pulls to one side
- Faulty shock absorber
- Front and rear wheel not aligned
- Bent fork
- Bent swingarm
- Bent axle