



## **Repair Sensei Diagnostic Worksheet**

### **Diagnosing a Car That Cranks But Won't Start – Petrol vs Diesel Engine**

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#### **🔍 Section 1: Confirm the Symptom**

**Does the engine crank but fail to start?**

- Cranking sound present
  - No engine start
  - Repeated attempts yield same result
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#### **⚡ Section 2: Battery & Starter System**

- Battery voltage above 12.4V
  - Battery terminals clean and tight
  - Starter motor engages properly
  - No clicking or grinding sounds during crank
  - Load test passed
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#### **🔧 Section 3: Identify Engine Type**

- Petrol Engine
  - Diesel Engine
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#### **📁 Section 4A: Petrol Engine Diagnosis**

##### **Spark System**

- Spark plugs inspected and clean

- Ignition coil tested
- Spark confirmed with tester
- Crankshaft position sensor functional
- Camshaft position sensor functional

### **Fuel System**

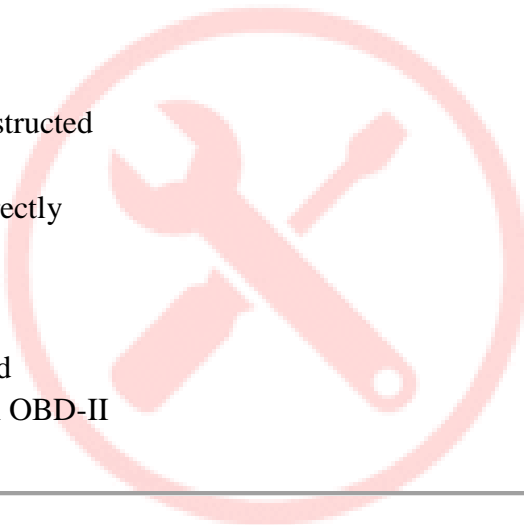
- Fuel pump primes on ignition
- Fuel pressure within spec
- Injectors pulsing correctly
- Fuel filter not clogged

### **Air Intake**

- Air filter clean and unobstructed
- Throttle body clean
- MAF sensor reading correctly

### **Timing & ECU**

- No immobilizer issues
- Cam/crank timing aligned
- No critical fault codes on OBD-II



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## **■ Section 4B: Diesel Engine Diagnosis**

### **Fuel System**

- Fuel pump operational
- Injector pressure verified
- Fuel filter clean
- No air in fuel lines

### **Glow Plug System**

- Glow plugs tested for resistance
- Glow plug relay functioning
- Preheat cycle completes

### Compression

Compression test performed



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No signs of worn piston rings or valves

### Timing & ECU

Timing belt/chain aligned

Crankshaft/camshaft sensors working

No critical fault codes on scan

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### Section 5: Record Observations

| Component Checked           | Status (OK/Fail) | Notes |
|-----------------------------|------------------|-------|
| Battery Voltage             |                  |       |
| Spark Presence (Petrol)     |                  |       |
| Fuel Pressure               |                  |       |
| Glow Plug Function (Diesel) |                  |       |
| Compression Test            |                  |       |
| Error Codes Found           |                  |       |

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### Section 6: Final Diagnosis

**Most likely cause of no-start condition:**

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## □ **Repair Sensei Tips**

- Start with basics: battery, fuel, air.
- Use a scan tool early to save time.
- Diesel engines rely heavily on compression and glow plugs.
- Petrol engines often fail due to spark or fuel delivery issues.
- Document each step to avoid guesswork.



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