

DENSO Spark Plugs | Fault Analysis



Normal

Appearance: Light grey or tan deposits and slight electrode erosion



Carbon Fouling

Appearance: Dry, soft black carbon on the insulator and electrodes

Results: Poor starting, misfiring, faulty acceleration

Possible causes: Faulty choke – over-rich air-fuel mixture, delayed ignition timing, bad ignition leads, plug Heat Range too cold



Lead Fouling

Appearance: Yellow or tan cinder-like deposits or a shiny glaze coating on the insulator

Results: Misfiring under sudden acceleration or heavy load conditions but no adverse effect under normal operating conditions

Possible causes: Use of petrol with high-lead content



Over Heating

Appearance: An extremely white insulator with small black deposits and premature electrode erosion

Results: Loss of power at high speed / heavy load

Possible causes: Plug insufficiently tightened, engine insufficiently cooled, ignition timing too advanced, plug heat range too hot, severe detonation



Pre-Ignition

Appearance: A melted or burned centre and/or ground electrode, blistered insulator and aluminium or other metallic deposits on the insulator

Results: Loss of power then causing engine damage

Possible causes: Much the same as over-heating. Pre-ignition takes place when combustion begins before the timed spark occurs



Fuel-Additives Fouling

Appearance: Red ground electrode and insulator nose

Results: Poor starting, misfiring, faulty acceleration and loss of power

Possible causes: Use of petrol with Fr / Mn additives. Additives are used to increase the octane number (especially in Russia)