

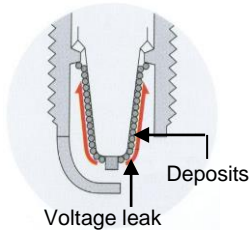


IGNITION
PARTS

TECHNICAL INFORMATION SHEET

FOULING OF SPARK PLUGS

Deposits settling on the insulator surface on the spark plug firing end cause this and is not caused by the spark plugs. Voltage will always take the easiest route to ground (earth).



Deposits are conductive and cause the high-tension voltage to leak from the centre electrode, across the surface of the center electrode insulator to the ground side (threaded side) of the plug. No spark occurs at the spark plug electrode gap and the engine then misfires or fails to start.

Plugs can be fouled by 'dry' deposits (deposits left as a result of the burning of an abnormal fuel charge) or 'wet' deposits (caused by fuel or oil wash/saturation).

Dry:

Carbon Fouling:

Black deposits on the firing end of the insulator. The most common causes are:

- Excessively rich mixture, dirty air filter, prolonged or incorrect choke/fuel enrichment operation, unsuitable heat range of spark plug, prolonged low speed running, repeated stop and start running, degraded fuel (see also 'Wet' fouling below), engine idling for long periods.

Oil Burning:

The result is often a build-up of an off-white-coloured deposit covering the insulator and electrodes. This is caused by a high amount of oil entering the combustion chamber.

Fuel Additive Fouling:

Some additives used by fuel companies or added to fuel by consumers contain an iron derivative, which acts as an 'anti-knock' agent. Sometimes the additives can cause an orange or red appearance to the centre electrode insulator on the firing end. The cure is to check the amount of additive being used per tank is not excessive, to try another additive type or if an additive is not being used, try another fuel supplier.

Wet:

Fuel/Oil Fouling:

Electrodes and insulator are washed/wet with fuel or oil. The reason for the contamination should be found and rectified vehicle-side. (Note that modern fuels are said to degrade more quickly - becoming harder to ignite after perhaps just 3 months. Fuel stored for long periods can cause starting difficulty/plug fouling).

In all the above circumstances, replacing the plug(s) with non-fouled or new ones can temporarily cure the misfire or poor starting. If however the engine tune and/or operating condition remain the same the replacement spark plugs will also eventually foul and the problem will re-occur. The time taken for replacement spark plugs to re-foul varies considerably, but it can be as long as six months or more.

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