



# VOLVO GENUINE SPARK PLUGS



## DEMANDS ON VOLVO GENUINE SPARK PLUGS

The function of the spark plug is to lead the high voltage (10–30,000 V) produced by the ignition system to deliver a spark that ignites the compressed fuel/air mixture in the combustion chamber. The spark plug works under extremely tough conditions and must meet about 150 functional requirements, for example in terms of:

**Capacity to withstand heat and temperature changes.** Temperatures reach as high as 2000°C during combustion, and during the intake stroke, the spark plug is subject to sudden cooling. This sudden heating and sudden cooling is repeated as long as the engine is running. While being able to withstand heat, the spark plug must also give off enough heat to avoid becoming a starting point for surface ignition.

**Capacity to withstand severe pressure changes.** In the intake stroke, the pressure is less than 0.1 MPa (megapascal), but in the combustion stroke it reaches 4.5 MPa or higher. This puts high demands on mechanical strength.

**Insulation at high voltage.** Inadequate insulation can result in engine damage, which is why Volvo Cars puts very high demands on the capability to withstand high voltages that reach 30,000 V and in extreme cases even 40,000 V.

**Minimized electrode wear.** In a Volvo Genuine spark plug, the centre electrode's tip is of iridium and 0.5 mm in diameter. Iridium is a precious metal with ultra-high density and high resistance to corrosion, right up to temperatures of 2000°C. This results in less wear on the centre electrode and long service life. The minus electrode is equipped with a two-layer platinum bed.

In all petrol cars, the spark plug is a key component since its performance influences the overall performance of the engine. Volvo Genuine spark plugs are specifically adapted to suit the characters of each specific Volvo engine. They meet a long list of tough requirements and play an essential role by enabling optimal combustion for low emissions and low fuel consumption.

The Drive-E powertrain engines in Volvo cars are very compact and designed to deliver an outstanding combination of high power and low fuel consumption. For the engine system to deliver to its full potential, it is crucial that every component meets the requirements specified by Volvo Cars' engineers.

## EVERY DETAIL MATTERS

The ceramic quality, the housing material, the type of resistors, the thread diameter, the thread reach, the electrode gap, the tightening torque, the welding process and the quality control – these are but a few of the parameters that Volvo Cars makes sure to optimise in the spark plugs that are carefully specified and tested for each type of Volvo engine.

Knowing that every Volvo Genuine spark plug meets these exact specifications can provide Volvo drivers with the reassurance that there is minimum risk of problems such as premature electrode wear, misfiring, fuel wastage, starting problems, irregular engine vibration, knocking (premature ignition), carbon build-up or compromised emission control.

## SOME BENEFITS OF ALWAYS USING VOLVO GENUINE SPARK PLUGS

### 1. Developed to optimise the performance of Volvo engines

Designed and tested for the specific engine and software of each Volvo model.

### 2. More efficient combustion for lower fuel consumption

Ensures that the fuel-efficient Volvo engine will continue to perform to its full potential.

### 3. Outstanding resistance to high temperatures, pressures and wear

Engineered to perform optimally under the most severe usage conditions.