



Genuine BMW Glow Plugs

- **Short warm-up time**
- **Less space required**
- **Reliable starting down to -30 °C**
- **Exactly matched to the BMW diesel combustion chamber**
- **Intelligent activation technology**
- **Optimal heating coil and regulator coil design**
- **Precise electronic control**
- **Glow plug and glow system – mated unit**
- **Optimal glow temperature**
- **Quick start in 2 seconds**

Function in detail

Diesel motors as a rule are self-igniters. At lower temperatures and in the winter, diesel needs a "heat kick" for starting so that the fuel ignites. Glow plugs perform this task.

- In diesel engines, the injected fuel ignites without needing an ignition spark. The activation of the operating cycle happens in three steps:
 - Pure air is drawn in.
 - The air is compressed to 30 – 55 Bar. It heats under compression to 700 – 900 °C.
 - Diesel fuel is injected into the combustion chamber.
- The high temperature of the compressed air triggers self-ignition, forcing the piston down and starting the engine.
- Starting aids (glow plugs) are installed so that the starting procedure does not become unacceptably long or impossible at low temperatures.
- The glow plug produces the ideal ignition conditions for the injected fuel through the electrically-created heat energy inserted into the combustion chamber.
- Depending on the design and arrangement of the combustion chamber, there are three types of injection systems for diesel engines: antechamber system, swirl chamber method and direct fuel injection. Glow plugs are required for all systems. In each case, the injected fuel vaporises and the fuel-air mixture ignites on the hot surface of the plug.

Benefits

Short warm-up time

Glow plugs have to provide a high temperature in the shortest possible amount of time to aid combustion. Genuine BMW Glow Plugs hold this temperature independently of environmental conditions.

Less space required

With modern diesel engines, space is very limited. The space requirements for a glow plug have to be minimised. Genuine BMW Glow Plugs have a very narrow and long shape. BMW specifies glow plugs with an ignition tube diameter up to 5 mm smaller than other makes.

Reliable starting down to -30 °C

The Genuine BMW Glow Plug produces the ideal ignition conditions through the electrically-created heat energy inserted into the combustion chamber. In the temperature range from +5 °C to -30 °C, they are an indispensable cold starting aid.





Exactly matched to the BMW diesel combustion chamber

A glow plug that extends too far into the combustion chamber disrupts the preparation of the injected fuel and thus the formation of an ignitable fuel-air mixture. Genuine BMW glow plugs are located – in exact alignment to the combustion chamber – right at the edge of the gas mixture. However, they still enter far enough into the combustion chamber or antechamber to position the heating point exactly.

Intelligent activation technology

During the engine start cycle, the glow plug must not be cooled by "blasts of fresh air" from the increased air movement in the combustion chamber. The intelligent activation technology of the combustion preheating control unit and the plugs' characteristics contribute significantly to delivering the required energy in the shortest time possible. Thanks to intelligent activation technology, Genuine BMW Glow Plugs are capable of providing immediate, sufficient heat energy in the glow zone.

Optimal heating coil and regulator coil design

Heating coil and regulator coil create a link to a common resistor element. The entire coil is firmly packaged into a compressed, electrically isolated but very heat-conductive ceramic powder. Through mechanical compression, the coil sits so firmly that the thin wires of the heating and regulator coil permanently withstand all vibrations.

Due to the optimised design of the Genuine BMW Glow Plugs, faults and internal short-circuits, which could destroy the plug, are eliminated. Genuine BMW Glow Plugs can easily cope with 15,000 to 20,000 cold starts.

Precise electronic control

Genuine BMW Glow Plugs function according to an innovative 3-phase glow system. That means they glow before the start, during the starting phase, after the start and during engine operation. Pollutants and noise emissions are thus minimised.

Glow plug and glow system – mated unit

Genuine BMW Glow Plugs form a matched system unit with their corresponding combustion preheating control unit. Both components are exactly matched to each other in their function and operating principle. They cannot be replaced with other components without causing grave malfunctions in the glow system or even serious engine damage.

Optimal glow temperature

The self-regulating ability of the Genuine BMW engine preheater plug is designed for a strongly reduced operating voltage.

The combustion preheating control unit regulates the energy input required to enable an optimal warm-up time. Genuine BMW Glow Plugs are operational post-glow and in combination with the combustion preheating control unit, are fully functional at full alternator voltage.

The regulator coil is limited to the persistent temperature which is below that of plugs that are non-operational post-glow.

Quick start in 2 seconds

The glow time for Genuine BMW Glow Plugs is reduced to 1 to 3 seconds under normal conditions. The front diameter of the heating rod is reduced, thus this zone starts to glow very quickly and reaches a start-ready temperature in a short amount of time. For an ambient temperature of 0 °C, this process takes 1 second; at -25 °C it takes 3 seconds.





Environment friendly and engine friendly

Genuine BMW Glow Plugs are capable of burning the diesel fuel in the hot starting phase more completely and with less noise by means of the post-glow technology. The amount of exhaust soot is thus reduced by up to 40%.

Thanks to the pre and post-start operation, the engine is quickly brought to its operating temperature. More energy is released and the combustion temperature increased more rapidly. This prevents damage and the engine runs more smoothly.

