Glow plug

Function Diesel engines are compression-ignition engines. In other words: The fuel injected does not require an ignition spark to ignite. The power stroke is triggered in three steps...

Environmental protection

Protection of the environment Close collaboration between manufacturers of glow plus and the automotive industry starts as early as the engine design stage. The result is environmentally-friendly diesel starting in two to five seconds, safe starting at temperatures as low as –30°C, smooth engine starting without exposing the engine to excess stress and strain and a reduction of up to 40% in soot emissions during the warm-up phase in the case of post-heating plugs.

Reduction in white/blue smoke

Until the ideal ignition temperature is reached, white or blue smoke puffs out of the exhaust. This smoke is attributable to incomplete fuel combustion as a result of the ignition temperature not being high enough. Post-heating ensures more complete and quieter combustion of diesel fuel during the warm-up phase. This reduces clouding of the exhaust gas by up to 40%.

Safety

Safety Annual breakdown figures collated by the ADAC provide an overview of the main causes of accidents involving vehicles on Germany's roads. More than 3.9 million cases were analysed. Electrics and the ignition system continue to top the list, accounting for more than half of all recorded breakdowns. On account of the continued rise in the number of electronic components and their networking via bus systems, electromagnetic compatibility (EMC) has gained significantly in importance in recent years. As a consequence, it is absolutely essential that:

- All electronic components and also the glow system are resistant to external influencing factors under all specific operating conditions.
- Electronic components and the glow system must not interfere with other electrical systems.
- Electronic components and the glow system must support error-free radio reception both inside the vehicle and in the immediate surroundings.

In warm and dry weather, a diesel engine will start even if a glow plug is faulty and only the remaining plugs pre-heat. Although starting under these circumstances is associated with increased emissions of harmful substances and possibly even knocking, most drivers will not notice these signs or will not know how to interpret them correctly.

The nasty surprise comes when it gets cold and damp and the first overnight frost sets in: heat is no longer given off by the diesel engine, which at best starts poorly and emits smoke and fumes. More likely, however, is that it will not start at all.

Depreciation

Depreciation Regular inspection of glow plugs helps to identify faulty glow plugs in good time so that they can be replaced. Consequential damage, difficulties starting and increased emissions of harmful substances are thus avoided. An engine can only reach operating temperature quickly with glow plugs that are in perfect working order. This protects the engine, makes for smoother running and prevents knocking. Fuel combustion is then more uniform and more complete.

Function

Function Diesel engines are compression-ignition engines. In other words: The fuel injected does not require an ignition spark to ignite. The power stroke is triggered in three steps:

1. First, pure air is drawn in.

2. The air drawn in is compressed to 30 to 55 bar, heating up to between 700 and 900°C as part of this process.

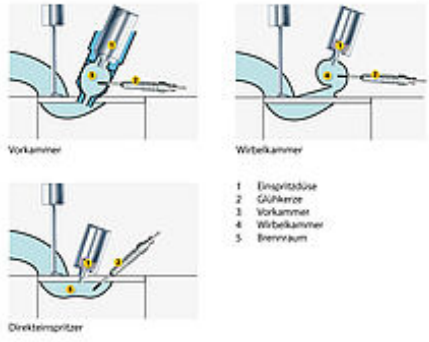
3. Diesel fuel is injected into the combustion chamber. The high temperature of the compressed air triggers combustion ignition. The internal pressure rises sharply and power is deployed to the engine.

Compared with petrol engines, combustion-ignition engines require more complex injection systems and engine designs. The first diesel engines did not provide a particularly comfortable or pleasurable ride. The harsh combustion process meant that they were very loud when cold. They were characterised by

- a higher power-to-weight ratio,
- low power output per litre and
- poor acceleration.

Unceasing development of the injection technology and glow plugs has succeeded in overcoming all of these disadvantages. Today, diesel as a drive source is considered to be of equivalent if not higher quality.

Images



Herth+Buss

Champion

BorgWarner

Valeo_EN

DRiV

HELLA

Bosch

Niterra UK Ltd.

DENSO Aftermarket

Source: https://www.my-cardictionary.com/dictionary/ignition/glow-plug