Fault diagnosis at a glance: Glow plug faces

BOSCH
Invented for life

Tip of heating element damaged

Cause:
Premature start of injection.

Effect:
Tip of heating element too hot, becomes brittle and breaks.

Remedy:
Check injection system, set injection point exactly.

Heating element creased and dented

Cause:
Operation with excessively high voltage, e.g. starting assistance. Excessively long energization (power supply/preheating relay). Impermissible post-glow with engine running. Glow plug with no post-glow capability fitted. Increased alternator voltage.

Effect:
Break in heating wire.

Remedy:
Starting assistance with 12 V vehicle electrical system only. Check glow-plug system. Replace preheating-time relay.

Heating element melted/broken off

Cause:
Premature start of injection. Nozzles with coke deposits or nozzle wear. Engine damage (after valve damage, piston seizure, etc.). Dribbling nozzles. Seized piston rings.

Effect:
Heating element too hot and melts or breaks.

Remedy:
Check injection system (e.g. nozzle-and-holder assembly), set injection point exactly.

No glow-plug continuity

Cause:
Annular orifice between plug shell and heating element constricted or blocked by coke deposits. Too much heat dissipated by heating element, control filament remains cold and allows too much current to reach heating wire.

Effect:
Break in heating wire, premature failure.

Remedy:
Check injection system. Set injection point exactly. Comply with specified tightening torque.

Heating element ruptured

Cause:
Cheap glow plugs/imitations (tube may swell, burst or even explode due to incorrect filling or poor drying of insulating powder before filling).

Effect:
Short circuit due to overheating. Tube may burst or explode.

Remedy:
Use Bosch glow plugs.

Terminal stud damaged

Cause:
Excessive terminal-nut tightening torque. Use of incorrect tool.

Effect:
Terminal stud shears off, damage to hexagon, short circuit.

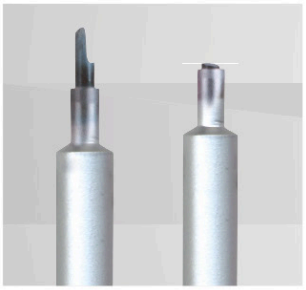
Remedy:
Use appropriate torque wrench. Comply exactly with specified tightening torque.

Ceramic heating element broken

Cause:
Incorrect injection point. Incorrect spray pattern. Overvoltage (refer to heating element melted). Incorrect fitting due to plug being tilted during installation.

Effect:
Ceramic heating element becomes too hot and breaks.

Remedy:
Check engine for loss of oil due to leakage. Check correct operation of control unit. Correct fitting of plug.



Ceramic heating element melted

Cause:
Installation of wrong glow plug (e. g. 12 V glow plug instead of 24 V glow plug). Defective control unit generating too much voltage or not shutting off current flow soon enough.

Effect:
Ceramic heating element melts due to overvoltage.

Remedy:
Check alternator. Check correct operation of control unit. Use vehicle-specific glow plugs.