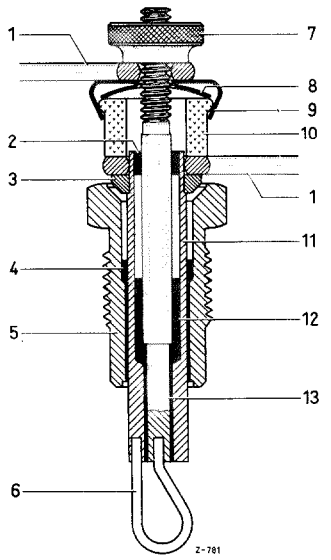
Glow Plugs

Job No. 15-31

Fig. 15-31/1 shows the constructional details of a glow plug. According to the position of the plug the current is supplied by a contact bar (1) or a connector cable to the center electrode (13) or to the annular fitting (3) on the outer electrode (11). The center electrode (13) and the outer electrode (11) are connected by the glow plug filament (6). The two electrodes are insulated from one another by the insulating compound (12) and are insulated against the body of the plug (5) by the insulating compound (4). Furthermore a plastic insulator (2) has been installed at the upper part of the glow plug between the outer and the center electrode. The insulator (10) insulates the two current connections. The corrugated washer (8) on the insulator works as a lock for the knurled nut (7) (see Fig. 15-31/1).



1 Contact bar
2 Plastic insulator
3 Annular fitting (on outer electrode)
4 Insulating compound
5 Plug body
6 Glow plug filament
7 Knurled nut
8 Corrugated washer
9 Sheet-metal cap on insulator
10 Insulator
11 Outer electrode
12 Insulating compound
13 Center electrode

Fig. 15-31/1

The service life of the glow plug depends to a large extent on the condition of the injection nozzles and on the combustion process. Insufficient injection pressure, binding nozzle needles, carburised or dripping nozzles, and advanced injection may cause premature breaking of the filament. Bridge formation by oil carbon may produce a ground connection of the filament and may cause the filament to fuse.

During the pre-heating period the temperature of the filament is approx. 900–1000° C, and as a consequence of the combustion heat in the engine under normal running conditions it is 600–800° C. Continuous running temperatures above 800° C will damage the glow plugs.

Type designations of the various glow plugs:

Glow plugs with a spiral-shaped filament and a rated voltage of 1.4 volts.

Bosch KE/GA 2/2
Beru 202/GE

Glow plugs with a loop-shaped filament and a rated voltage of 0.9 volts.

Bosch KE/GA 1/8
Beru 214/GE