Glow plug adapters

Standard adapters are used to measure compression of diesel engines.

Different manufacturers use their own adapter sizes to connect to compression testers. All adapters are designed for connection to quick-release connectors.

Fig 1. Diesel compression tester adapters

Glow plug adapters can be purchased in a compression tester kit.

Fig 2. Compression tester for diesel engines with a set of adapters

As a rule, from this set, each specific car service station uses 5-7 adapters for specific car brands.

In general, the technology of measuring compression using mechanical compression testers is currently outdated and is very rarely used in modern car services.

This is due to the high labor intensity and low information content of measurements.

The technology of measuring compression using mechanical compression testers is not accurate, since it depends on the condition of the compression meter and the location of the shut-off valve and the inertia of the mechanics themselves. Therefore, if you measure the compression of the same engine at different car services, the readings and, accordingly, the diagnoses will be different.

The company AUTOSCOPE TECHNOLOGY offers to use high-tech BERU PSG glow plugs, which are free from all the above-mentioned disadvantages of mechanical compression testers using the adapters you already have for the mechanical compression tester.

Fig 3. BERU PSG glow plugs with built-in pressure sensor

PSG glow plugs differ from classic glow plugs by having a built-in pressure sensor.

Fig 4. Upper glow plug with built-in pressure sensor, lower without sensor

Using the signal from the pressure sensor built into the Beru glow plug, you can not only measure the peak pressure, but also display a graph of the pressure in the diesel cylinder on the screen of an oscilloscope or motor tester.

This graph contains information that can be used to search for complex malfunctions in a diesel engine.

Let's take a closer look at how glow plug adapters can be used with BERU glow plugs.

In the glow plug adapter, at the installation site of the quick-release mechanism, it is necessary to cut an M9x1 thread.

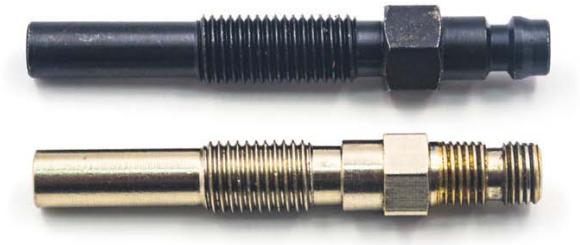

Fig 5. Standard adapter on top, adapter with M9x1mm thread on the bottom

A hole with a diameter of Φ4.5…4.8 mm must be made on the M9x1 thread side to a depth of 40 mm. The BERU glow plug tip should easily fit into this hole.

Fig 6. BERU glow plug adapters

If there is a valve in the adapter, it must be removed.

Fig 7. On the left is an adapter without a valve, on the right is one with a valve

Using the adapter, connect the BERU glow plug to the required adapter type of the vehicle being tested.

Based on the dimensions of the PSG glow plugs, the following adapters can be used:

M9x1 – M9x1, length 100 mm

M9x1 – M10x1, length 100 mm

M9x1 – M10x1.25, length 80 mm

Fig 8. BERU glow plug screwed into the adapter

Fig 9. Set of BERU glow plugs with adapters

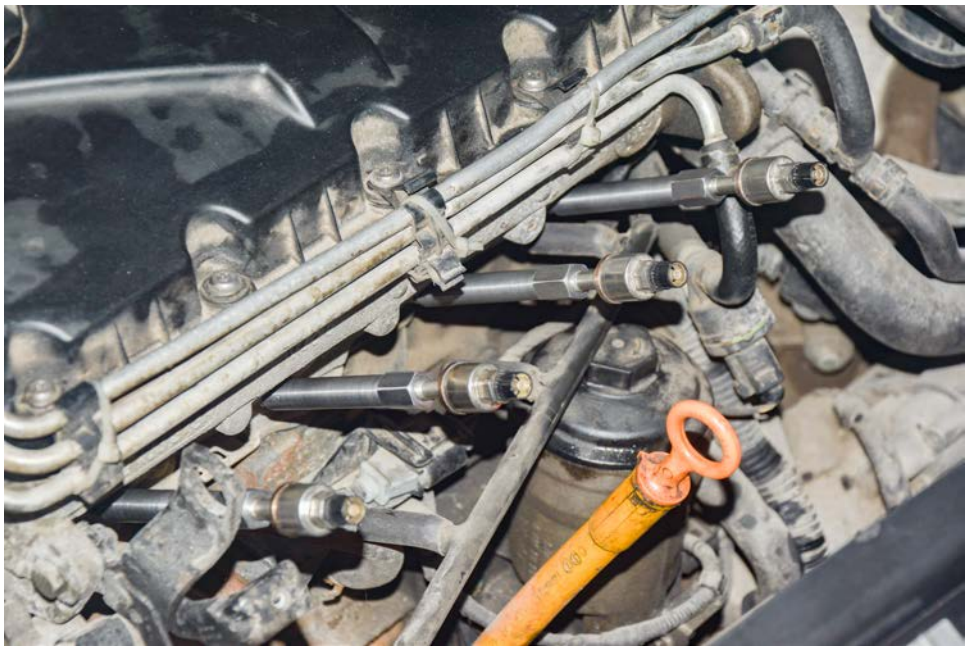

Fig 10. BERU glow plugs installed in the engine instead of standard glow plugs

Fig 11. Measuring pressure in cylinders with BERU glow plugs and signal amplifiers

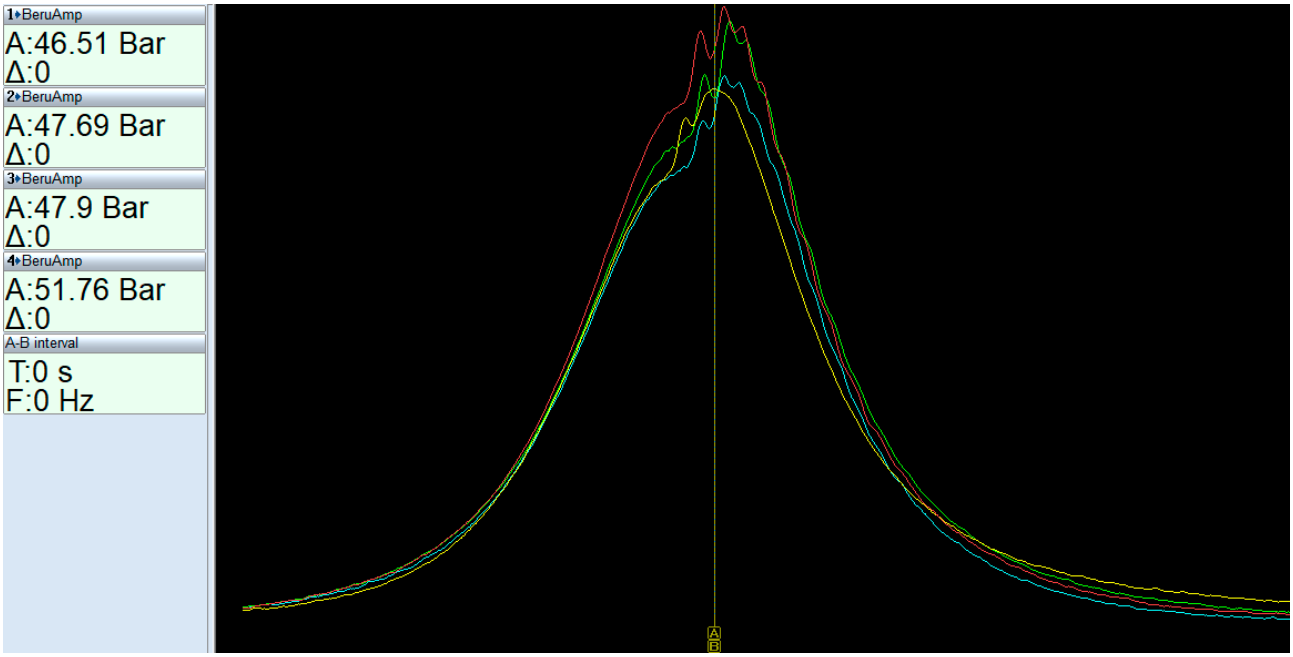

Fig 12. In-cylinder pressure graph at idle

The resulting pressure graphs may contain information that can be used to troubleshoot complex diesel engine malfunctions.