

J&S Technical Information

Fuel Injection Pressure Test Set - G2001

Overview

For use on most cars fitted with Fuel Injection systems

Enables access to pump, regulator, and injector rails to test fuel delivery pressure.

Two precision gauges to ANSI B40.1 enable accurate testing of both high and low pressure systems.

Comprehensive range of brass and steel adaptors, utilising a quick coupling system for simple connection to the following systems :-

Bosch K , KE , KE3 , L , LE2 , LH Jetronic
Bosch Motronic , M1.3 , M1.7 , M2.5 , M3.1 , ML4.1
Daihatsu FEi
Fiat Spi , Weber IAW
Ford EEC IV , EFi (inc Zeta) Weber CFi
G.M. Multec-m
Honda PGM Fi
Lucas L Hotwire , P Digital
Mazda EGi
Mitsubishi Eci , MPi
Nissan EFi , ECCS
Renault R Electronic
Rover Spi , PGMFi
Subaru EP
Suzuki EP
Toyota Efi , TCCS
VW Digijet , Digifant , VAG Mpi
Weber Marelli IAW



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General Information.

Fuel pressure testing is used to indicate the condition of the fuel system, without the correct pressure, performance and fuel economy will suffer.

It may help to picture the system as a circle. Fuel is pumped from the fuel tank to the regulator and injectors, and the un-used fuel travels back to the tank.

The regulator services as a divider between the supply and return sides.

Low pressure usually indicates a problem on the supply side and can be caused by damaged or restricted fuel line, clogged fuel filter, defective pump or regulator, or incorrect fuel- tank ventilation.

Higher pressures usually indicate a problem on the return side and can be caused by damaged or restricted fuel line, poor venting of the fuel tank or a faulty regulator.

Pin-pointing problem areas on the return side can usually be achieved by re-testing. For example - By removing the return line near the fuel regulator and placing it into a suitable container, a retest with continued high pressure would indicate a faulty regulator. If the pressure drops to specified pressure the problem is more likely to be found further down the line or in the fuel tank.

When the tests are completed be certain that the connections are assembled correctly, using new seals and following the manufacturers torque specifications. Check thoroughly for leaks and correct where necessary.

Always refer to a workshop manual for recommended test procedures and points of access into the fuel systems.

There are two basic types of fuel injection system. Port Fuel Injection uses separate injectors to supply the fuel mixture to each cylinder. Throttle Body Injection injects fuel mixture from a position above the throttle plate on the intake manifold. On both systems there is a supply side, which brings fuel to the injectors, and a return side which carries unused fuel back to the fuel tank.



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Application

There are three basic ways to check fuel pressure:-

1. Many cars with port injection are equipped with a **special test port**. The test can be made by connecting the pressure gauge to this port by means of the correct adapter.
2. Some older port injection systems have a **flexible hose connection** at the cold start injector. This is an end of hose connection and requires the use of either the straight hose connector and the 5/16" or 3/8" diameter hose with quick connector. A hose clamp is useful during this test method. Alternatively some systems have fuel bolt or banjo bolt connections.
3. **In-line connection** which requires the gauge to be placed in series in the fuel line by using the correct adapters.

Most systems require the pressure to be relieved before entering the system unless a schrader-type test port is available. It may be necessary to remove the fuel pump connector, relay or fuse. Some systems have two fuel pumps, and both must be disabled. The engine should be run until it stalls, then continue to try re-starting for up to ten seconds. The system should now be ready to open for connection of test equipment. Once the correct adapters and gauge are connected, reactivate the fuel pump.

Do's

- Refer to the manufacturers instructions or a reliable workshop manual for the correct test procedure, access points, and pressure specifications.
- Wear safety goggles to protect ones eyes when working on fuel systems.
- Keep clothing and tools away from hot and/or moving engine parts.
- Clean fuel system connections before loosening to avoid the serious damage that can result from dirt ingress.
- Wrap a suitable cloth around the fittings when disconnecting.
- Provide correct ventilation for gas and exhaust fumes.
- Use Hose Clamps when using hose adapters.
- Check that all quick connect couplings function correctly, allowing the sleeve to slide into locking position when connected.
- Make sure that the battery is fully charged and that fuel supply is adequate.
- Use two spanners to release and tighten connections to prevent damage by line twisting.
- Check the general condition of engine and fuel system for broken or loose fuel lines, vacuum lines, ignition and electrical wiring, battery cables, and fuses. Also check fuel tank filler cap and venting system.
- Drain the tester of any left over fuel after testing. Use the pressure drain valve whenever possible.

Don'ts

- Smoke, or work near sparks or open flame when working on fuel systems.
- Allow fuel to spill on hot engine parts. If a leak or spill develops, switch off the ignition, disable the fuel pump, and clean up the spill immediately.

