

ENGINE ELECTRICAL

EFI Fuel System Maintenance and Testing

The regulator can also vary pressure consistent with engine load, atmospheric pressure, etc. A manifold pressure tube runs between the mag end throttle body and the top of the diaphragm. As the throttle is opened, the pressure in the throttle bore rises. This additional pressure enters the cavity above the diaphragm, assisting the regulator spring and raising the pressure in the rail, allowing more fuel through the injectors while they are open due to the higher pressure. The opposite is true during deceleration. High engine vacuum while the butterflies are closed is applied to the top of the diaphragm, allowing the fuel to compress the spring and open the regulator valve at a lower pressure. These pressure changes are very small and tend only to maintain a specific pressure differential between the throttle bores and the fuel rail, and not to vary mixture ratios while driving.

In addition to checks made under fuel pump service, the pressure regulator span can also be checked. With a fuel pressure gauge on the fuel line and a Mity-Vac™ pump (PN 2870975) installed on the regulator, activate the system the same as was done for the fuel pump check. The fuel pressure at atmospheric pressure should read between 35 and 37 psi; with five inches of vacuum it should be between 33 and 35 psi; with ten inches of vacuum it should read between 30 and 32 psi; and with five pounds of pressure it should be between 42 and 44 psi. Consistent readings outside the span indicate a bad regulator, bad hoses or filter, bad fuel pump, or an inaccurate test gauge. Verify the problem and correct it before any additional work is done to the system.

Injector

The injector is an extremely close tolerance solenoid type valve which opens and closes electrically. It allows fuel to pass from the fuel rail through the injector body and into the throttle body. The quantity of fuel is controlled by the length of time each injector is open, and constant fuel rail pressure.

