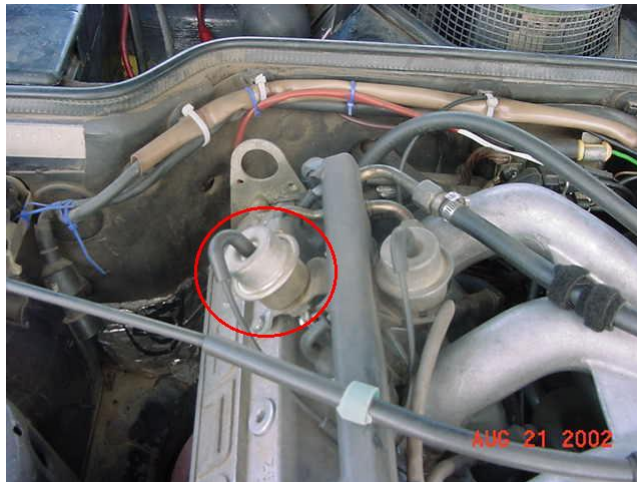


FUEL-07, Fuel Pressure Regulator - General Information and Replacement

General Information

For years, 944 owners and even experienced Porsche mechanics, have on a regular basis replaced perfectly good DMEs, fuel pumps, and various other components because of faulty fuel pressure regulators (FPR). However, it's quite understandable as faulty FPRs can display a wide range of symptoms depending on how the regulator fails. Also, the function and location of the FPR is quite often confused with the fuel damper. The fuel damper is on the supply to the fuel rail and functions to "dampen" the pulsations caused by the fuel injectors. The fuel pressure regulator is located on the return to the fuel tank and functions to control the pressure on the fuel rail. The photos below shown typical 944 fuel rail arrangements and the location of the fuel pressure regulator.



Early 944 (Pre-1985.5)



Late 944



944 Turbo



16V 944S / 944 S2 / 968 (Plastic Cover Removed From Rail)

Fuel Pressure Regulator Failure Symptoms:

- Engine runs rough
- Engine stumbles or sputters
- Engine runs very rich - black smoke from the exhaust
- Engine will not start
- Engine starts but stalls shortly after startup
- Noisy fuel pump
- Noticeable decrease in fuel mileage

Tools

- 10 mm socket and ratchet
- Flat tip or Phillips head screwdriver
- Catch rags
- Safety glasses
- 0-100 psi fuel pressure gauge (desirable)
- Adapter for fuel pressure gauge to fuel rail (11 x 1.50 mm female threads)

Parts

Fuel Pressure Regulator Part Numbers			
Part No.	Model	Year	Engine Code
944 110 198 01	944	1982 - 1985	M44.02 M44.04
944 110 198 03	944	1985.5 - 1988	M44.5-10
944 110 198 04	944S / 944 (2.7L)	1987-1989	M44.40 M44.11 Thru 46K 02979 M44.12 Thru 46K 61255
944 110 198 06	944 (2.7L) / 944 S2 / 968	1989 - 1995	M44.11 46K 02980 Forward M44.12 46K 61256 Forward M44.41 M44.43/44
944 110 198 03 944 110 198 05	944 Turbo	1986 - 1989	M44.51 / M44.52 Thru 47K 02563
944 110 198 05	944 Turbo	1989 - 1991	M44.52 47K 02564 Forward

Other Procedures Needed

- [FUEL-01](#), Fuel Pressure - Checking

Testing

Without question, one of the best checks for a faulty FPR is to check the fuel pressure at the rail. If you have access to a 0-100 psi fuel pressure gauge , check the fuel pressure at the rail using [FUEL-01](#). Normally a faulty fuel pressure regulator will result in a very high fuel pressure. So, if your fuel pressure is well above the specs provided in FUEL-01, you probably have a bad FPR.

One of the most common failure modes for the FPR is to fail closed to the point that fuel rail pressure is extremely high. The high differential pressure across the injectors causes them to draw excessive current. The excessive current is seen by the injector drivers which subsequently shutdown. If you have a condition where the car will not start or starts and almost immediately dies, try disconnecting the wire for one (1) injector. Attempt to start the engine. If it starts and continues to run, the fuel pressure regulator is likely bad. Bear in mind that running on only three cylinders, the car will run very rough. By disconnecting one injector, it reduces the current enough to keep the injector drivers from shutting down.

Replacement

1. Disconnect the fuel pressure regulator vacuum line.
2. Place a catch rag under the regulator fuel line connection.
3. Disconnect the fuel line from the fuel pressure regulator. Normally this will be a hose clamp that can be removed by either a flat tip or Phillips head screwdriver.

CAUTION

Use caution when removing the fuel pressure regulator from the fuel rail as the rail may be under pressure and can spray into your face and eyes. It's a good idea to wear safety glasses while removing the regulator as well as covering the regulator with a rag.

4. Remove the fuel pressure regulator retaining bolts. (normally 10 mm socket)
5. Rock the regulator back and forth gently until it is free from the fuel rail.
6. Install the new regulator in the fuel rail, install and tighten the retaining bolts.
7. Connect the fuel line to the regulator.
8. Connect the vacuum line to the regulator.

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