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MRP DATASHEET: FUEL PRESSURE REGULATOR

What it does and how it works

The fuel pressure regulator is a key component of the fuel system. It works with the fuel pump to maintain a steady pressure relationship between the fuel line side of the injectors and the intake manifold. It is located mounted to the fuel rail.

Most modern fuel injected cars run a fuel pump in the tank and run much more fuel than is needed to the fuel rail. A regulator keeps a certain amount of fuel pressure in the rail and then sends the rest back to the tank.

And this affects you how?

Later rotaries, along with most fuel-injected cars, have a **One to One** fuel regulator. It varies the fuel pressure by 'watching' manifold pressure i.e. vacuum and boost. It uses a diaphragm to control pressure. Most cars idle at a fuel pressure of 30/34psi and at full throttle (No vacuum in theory) somewhere around 45psi. If you put further pressure (via turbo or supercharger) to the manifold, it increases fuel pressure more. In factory regulators, for every pound of boost, it adds a pound of fuel psi. Hence 1 to 1.

Most adjustable regulators are still 'one to one' or close to that, however you can adjust the pressure at idle or full throttle for fine-tuning.

There is another type of regulator used with aftermarket forced induction. These are **Rising Rate** regulators commonly called an **FMU** (fuel management unit). These regulators increase fuel pressure at a multiplication factor of boost. So instead of messing with complicated computers and injection duty cycles, these systems just increase fuel pressure to add fuel. They go inline down from the factory regulators and only start to add pressure under boost. So when you are off boost, you maintain factory tuning and drivability. Only as you get boost does the FMU begin to increase fuel pressure.