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How Can I Improve My Gas Mileage?

Like you, we've been watching the price of gas shoot up to unprecedented levels and have to wonder where it will stop. In Tempe, we're seeing prices in the $3.20/gallon range. I know, I know, many of you, especially you poor Californians, are thinking, “hey, that's not bad!”, but, you see, the oil companies have just done a better job of conditioning you! If we ever see gas below $2.00/gallon again, we'll all think they're giving it away!

Because of the high gas prices we get a lot of people asking how they can get better mileage in their vehicle. Our knee-jerk reaction is to suggest that they drive down-hill more, which isn't particularly helpful and certainly not practical. So we refrain and suggest that a good fuel injector cleaning might help. As it turns out, this is both helpful *and* practical!

In a modern fuel injected engine, the engine computer controls the fuel injectors by varying the length of the pulse when fuel is sprayed into the engine. It also monitors the amount of oxygen in the exhaust gas to determine whether the engine is running lean or rich. If the fuel mixture isn't just right, the engine computer will try to adjust by increasing or decreasing the amount of fuel entering the engine. The computer knows how much fuel the injectors are supposed to be delivering but if the tiny valve in one or more of the injector has gotten sticky and isn't opening and closing as well as it should, it may actually spray more or less fuel than the computer is expecting.

The oxygen sensor, as the name implies, measures the amount of oxygen in the exhaust and the computer uses this information to adjust the fuel supplied by the injectors. When a cylinder doesn't receive enough fuel, all the fuel is burned and there is still oxygen left over in the exhaust which alerts the system to a lean condition.

In a V8 engine, there are at least four cylinders per oxygen sensor and often all eight are monitored by a single sensor. So, if one cylinder receives too little fuel, because of a dirty injector, there's extra oxygen in the exhaust but the system can't tell that it's only coming from one cylinder. It adds gas to all the cylinders that the oxygen sensor is monitoring, meaning that, with one plugged injector, at least three, and possibly seven, cylinders will be running extra rich! Imagine what that does for your gas mileage!

If you want to save some gas, or at least verify that your engine isn't *wasting* gas, get the injectors to us.. We'll flow test them before and after our extensive cleaning process and provide you the before and after picture. If you have an injector that's partially plugged we'll likely increase your mileage and save you a lot of money at the pumps!

AN Fuel Fitting How-To

Since we became a dealer for Fragola fittings and hose, we've helped a lot of people with some great plumbing projects. We've also discovered that some people shy away from AN fittings because they're not familiar with them.

In an effort to educate those of you who would like to use AN fittings but aren't sure where to start, we've decided to write some “how-to” articles over the next few months.

The AN specification was created after World War II so that the spare parts for the Army Air Corps planes would be interchangeable with those of the Navy. The specification covers plumbing items that are commonly used on aircraft.

The size of all AN fittings are referenced by a number preceded by a dash. This number refers to the number of 1/6th's of an inch of the outside diameter of the steel tubing that a part is designed to work with. So parts that would work with a 3/8” steel fuel line would have a size of -6. In other words, 3/8” = **6**/16” = -**6**AN. For fuel lines, the most common size is -6, although we also see -8 (1/2”) and sometimes -10 (5/8”) sizes. Anything larger than that is only necessary for super-high-performance applications.

The sealing portion of an AN connection utilizes a 37° flare, unlike most automotive fittings that use a 45° flare. The connections are reusable and very secure.

One of the problems we've seen people have with these fittings is that they often over-tighten the connections. When this happens the flare gets distorted and the sealing surfaces don't mate properly, causing a potential leak. A -6 fitting only needs a maximum of 16 ft/lb of torque and -8 only needs 29 ft/lb.

When making these connections, a couple drops of oil or a bit of anti-seize compound on the threads and mating surface will facilitate even tightening. The most import rule is: always check for leaks! (To be continued next month)

