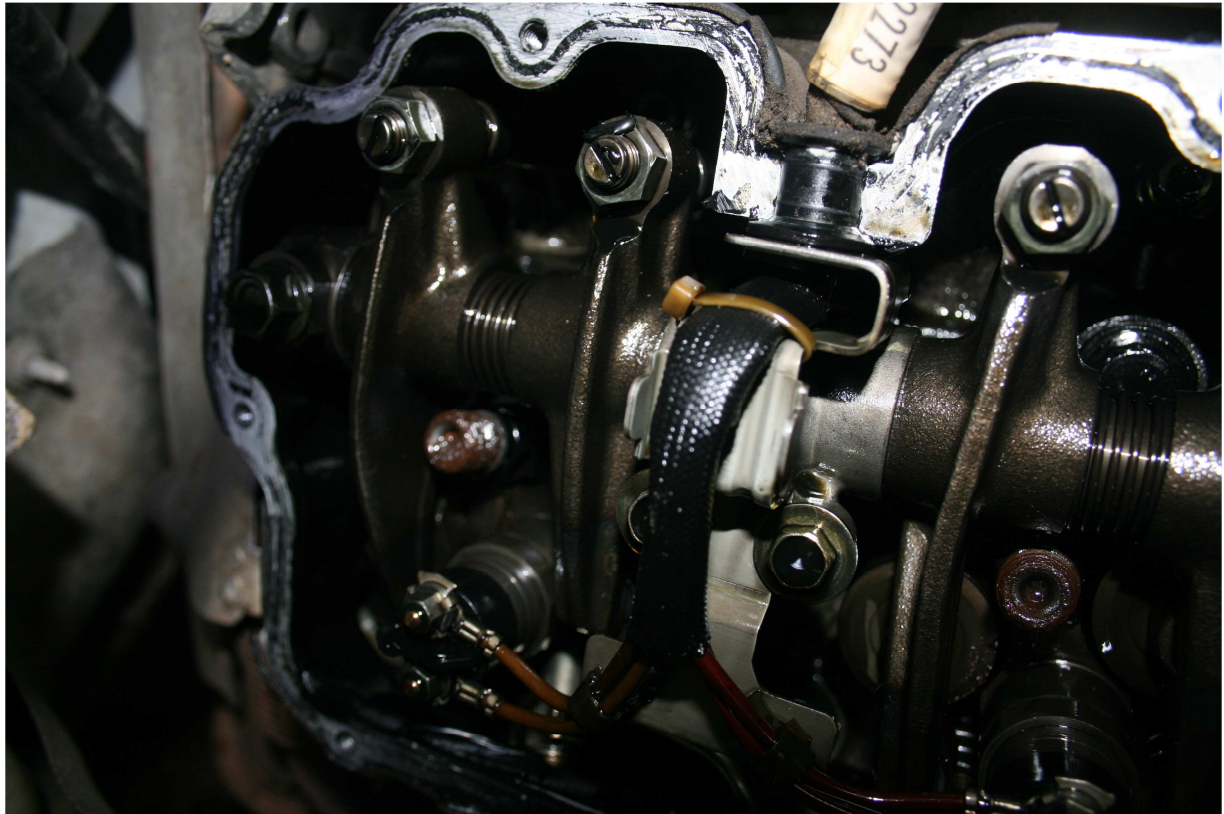


Duramax LB7 Injector Line Corrosion

The Duramax LB7 uses an injector line with an extended length nut in order to project through the rocker cover yet seal to the cover. This line nut seals to the injector at the very bottom via oring as well as the metal to metal high pressure junction of the tapered seat. The line and line nut are open to atmosphere above. The idea is that if the tapered seat were to leak, the fuel could easily escape the engine rather than leaking into the crankcase. While this design is smart in some ways it creates a major issue. The line nut to line interface is exposed to debris and sediments that collect inside and corrode both the nut and the line. During the course of normal operation, this is not an issue as this corrosion is external to the tapered seat seal, but once the line nut is turned the corrosion is ground up and deposited into the inlet bowl of the injector as shown below:



This material can be cleaned out and flushed from the injector, but cannot be cleaned from the line itself. The image below shows the line taper and the definitive break between the sealed area and the affected area.



At a glance one would think that a simple cleaning of the tip of the line taper would suffice, but the reality is that this corrosion is on the inside of the line nut in the threads as well as up the shaft of the line around the entire seating ball. The line nut cannot be slid back enough to expose the seating ball so I sectioned one as shown below:



In my opinion it is just not practical to clean these lines. As soon as you begin to twist to thread them on the deposited crud up above will once again grind up and gravity feed into the injectors which in most cases are being replaced at this point. In other words the first thing your new injectors see is a dose of highly abrasive contamination. A turd sandwich so to speak. For this reason we replace all 8 supply lines. Once assembled I will use a spray lubricant like Eezox Gun Care or CRC Spray dielectric grease to form a protective coating and to prevent corrosion. While some have suggested sealing the line to nut with silicone I do not endorse this position. This junction will likely never be a positive seal regardless how good a job you do. With an imperfect seal comes breathing and with breathing comes moisture condensation and with moisture condensation comes corrosion. In other words the sealer will only keep out large contaminants. To illustrate this theory take a piece of steel tubing and weld a cap on each end. Leave one end imperfect and set outside. In time you will catch water inside this tube especially in humid climates.