

A precise surface technology: Diesel fuel injector

Today's Common Rail Diesel (CRD) systems, which are found in most European vehicles, require extremely high pressures. The injectors operate at these high pressures to reduce particulate matter in vehicle emissions. To operate at these pressures, surfaces are required to be extremely flat and smooth.

Metrology needed for this application must be nondestructive, as a stylus-based system may score the sealing surface. Small defects on an injector surface, such as those caused by a stylus trace, could result in a leak path for the fuel under pressure, causing that injector to fail under load.

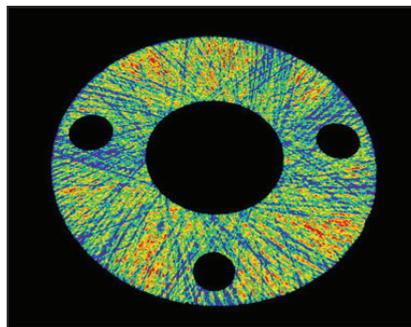
Superfinished sealing surfaces, such as these, can be measured and analyzed quickly and repeatably with Zygo Corporation's flagship optical profiler, Nexview™, while providing confidence the process is under control.

With ZYGO's new Mx™ software, multiple applications have been developed to measure sealing surface roughness and form, valve plunger concentricity, valve seat angle, and contact diameter roundness. See these applications and more by contacting your nearest ZYGO sales representative.



Easy to use

With the adaptability of the Nexview™ optical profiler, any user can place a diesel injector on the stage, press a single button, and capture the area of interest.



Highly repeatable

To monitor a process like injectors, the ability to repeatably measure parts, even after reprocessing, is critical for production, cutting down on scrap and increasing the diesel injector's lifespan.



ISO compliance

Mx™ software is fully ISO 4287/4288 (2D profile) and ISO 25178 (3D area) compliant, with easy-to-understand on-screen tools and controls.

Measuring form and roughness with confidence

Coherence Scanning Interferometry (CSI) produces the highest level of vertical resolution, independent of the interferometric objective used. This means for any objective, measuring slope, surface roughness, or form, a ZYGO instrument will provide better than 0.1 nm vertical resolution, without external vibration isolation.

Will a ZYGO profiler help you? With over 50 years of metrology experience, Zygo Corporation continues to strengthen our reputation of being one of the world's premier suppliers of noncontact optical metrology. Call your local representative for a sample measurement and explanation of features that will best suit your requirements.

Data subject to change without notice.