

Accurately Capturing Test Points in Diesel Engine Fuel Injectors



A customer of ours reached out to us to see if we had a solution to their calibration issue. They needed equipment to help them check their diesel fuel injectors used on Naval vessel engines. Assuring the cracking set point and reset point is at the ideal levels is essential for maximizing the efficiency of the engines. The firing ratio and timing of the injectors, sometimes as many as twenty used in synchronicity, is critical to the engine's performance and smooth sailing.

Their current test system failed to meet their requirements for two reasons - they were too slow to capture the points accurately and only went up to 6,000 psi when the injectors work as high as 10,000 psi. Because of these limitations, they had decided to remove and replace the injectors each time the ship was in dry dock.

Our Solution

We presented them with our XP2i digital pressure gauge and its special PSV (pressure safety valve) test mode. While in PSV mode, the XP2i collects readings eight times per second and then displays the maximum or minimum pressure reached on its display. It has a maximum pressure range of 15,000 psi, giving it plenty of room to calibrate up to their 10,000 psi limit.

The customer mounted the XP2i digital pressure gauge in series with their injectors and supplied a nominal pressure value. Once the pressure reached set and reset points, the XP2i pressure gauge displayed this value, and the technician could conduct a quick pass/fail analysis. If the test passed, they could confidently continue to use the same injector rather than unnecessarily replacing it as they had to do before.

In summary, a simple technical solution provided by the XP2i has resulted in the saving of both fuel and replacement equipment.



Crystal XP2i Digital Pressure Gauge