

Injector Pulsation Test

A global fuel-injection systems manufacturer sought a turnkey injector pulsation test equipment solution that could be used in the R&D field worldwide for the development of the injectors. The challenge was to provide the best technical solution to a competitive price and to be able to support this global program worldwide. Assembly & Test Worldwide (ATW) successfully met this challenge by designing and building the most robust, reliable, and flexible injector pulsation test system possible.



System Overview

The "back pressure" - principle is used to generate the pressure pulses. Therefore a high pressure piston pump and a servo valve at the outlet of the common rail are used to generate and control the pressure level and the rise & dump rate. Sinusoidal pressure pulses, programmable, in order to stress the injectors at up to 1000bar and 15Hz are possible.

System Values & Benefits

- less components in the test circuit
- less mass in motion under high frequency
- easier maintenance
- automatic bleeding
- fresh and clean test fluid for each pulse cycle
- constant test fluid temperature

System Highlights

- Easy adaptation of up to 12 injectors
- Integrated test fluid conditioning and refinery.
- ATW-Standard test software and data acquisition system based on NI - LabView
- Makrolon guarding with safety switches on all doors
- Flow through concept
- Pressure Range up to 1000 bar
- Frequency up to 15 Hz
- Volume displacement up to XX cm³ under maximum frequency
- Medium: Hydraulic Fluid HLP32 (other medium on request)
- Fluid Temperature 20°C up to 80°C (other temperature on request)
- Test Piece Temperature - Environmental temperature (other temperature on request)
- Pulse form programmable Sinus (Triangle, Trapezium on request)
- Fine Leak: Pressure Decay
- Rough Leak: Catching hopper with sensor
- Noise Level < 75 dB in