

Description of How to Detect Valve Leaks and Functional Issues in the Measurement System.

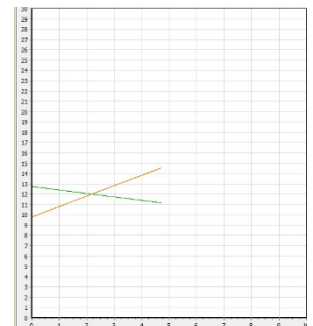
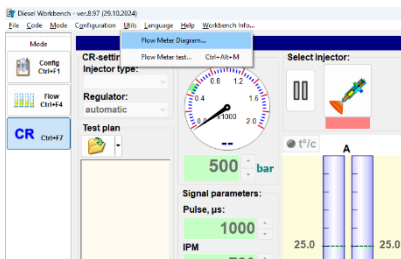
This description explains how to identify valve leaks and functional issues within the entire measurement system. A reason for conducting this check could be when an injector that is presumed to be intact delivers an injection quantity that is too low during testing. **A typical indication of this issue is when the test report shows a "0" as a result for LL (Idle) or VE (pre injection) tests.** This can occur either on the test bench or within the measurement system, particularly in "Upgrade Solutions" manufactured by the company Opensystem.

Our measurement system fundamentally includes two types of valves:

1. A valve that switches between the channels.
2. A valve that allows fluid to flow back from the measurement unit into the tank after the measurement process.

The testing can be conducted in two steps:

1. Testing the Switching Valve (Channel Valve):
 - Start the injector test in the "VL" mode.
 - Open the "Flowmeter Diagram" utility, which displays each injection event on a graph.
 - Once the measurement system is filled, pause the test and observe the progression of the graph.
 - If the line on the graph remains horizontal, this indicates that the switching valve is sealed, and there is no leakage.
 - However, if the line sharply descends, it suggests that the valve cannot maintain pressure and is leaking.
2. Testing the Drain Valve:
 - Stop the test and observe the progression of the graph.
 - A sharp downward trend in the line indicates a leakage in the drain valve.



What to Do in Case of Leakage?

1. Begin by visually inspecting all connections between the valves and the measurement system and rectify any issues if found.
2. If no issues are identified in the connections, remove the affected valve and clean it (e.g., using an ultrasonic cleaning bath). A microscopically small hard particle can impair the normal functionality of a valve, significantly distorting test results, especially at low pressures and injection volumes.

After cleaning the valve or resolving the leakage issue, the problem should be resolved.