

Market Application Case Study:

2-STATION SEMI-AUTOMATIC DIFFERENTIAL PRESSURE TEST SYSTEM

Market driver:

An automotive component manufacturer needs to test multiple types of master cylinder assemblies to ensure they meet performance specifications. Production throughput requires short cycle times for testing and the manufacturer has 9 distinct part variations that must be tested with no downtime for tooling changes. The test system needs to perform leak tests on two parts simultaneously, providing independent test results for each part and applying acceptance marks on parts that meet specification.

Test Requirements:

The internal volume of the part is pressurized to 600 kPa and must not exceed a leak rate of 0.5 scc/min. Machine cycle time required is 25 seconds, including operator loading and unloading of parts.

CTS test solution:

Two Sentinel C28DP instruments were selected for integration into the test system. Differential Pressure decay supplies highly accurate and repeatable test results when a low leak rate test measurement is necessary similar to this project.

The system was designed as a two part, single-station semi-automatic test system where the parts are tested simultaneously, providing independent test results from the two Sentinel C28DP test instruments.

The operator will manually unload two master cylinder assemblies from the fixtures (if applicable), then load two new assemblies into the fixtures, clear the light curtain, and then bump the toggle START switch to initiate the test sequence. The parts are automatically clamped, sealed, and leak tested. Upon successful completion of the test, each C28DP will display the leak test result. When a part passes the leak test, it is stamped with an acceptance mark, the tooling clamps and seals are automatically retracted, and the parts are removed.

