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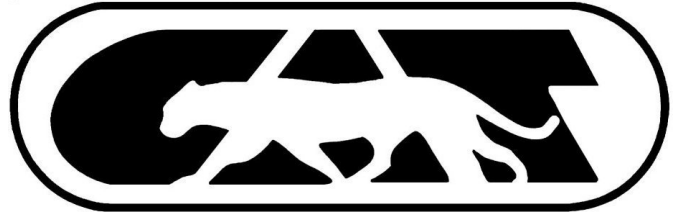
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CURTIS DP500 FLOW TEST MACHINE

Description:

The DP-500 is a flow test machine capable of testing components with a differential pressure of up to 500 bar and an upstream pressure of up to 700 bar. The components are manually loaded onto a 4 position indexer which automatically transfers them to each of the stations in turn. The components are tested under oil to expel any air from the internal cavities before testing, to improve cycle time. Prior to being tested the components are reverse flushed at up to 100 bar to remove any possible contamination. Following the test, excess fluid is removed from the component by a blow off station where the components are blasted with a jet of air in an enclosed chamber. The machine is capable of delta q tests, valve out tests, full lift valve-in test and variable lift tests as well as being capable of generating flow lift curves.

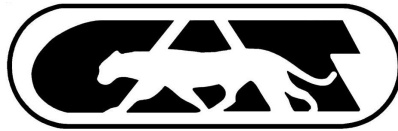
The test results are stored against the component serial number within an Excel® spreadsheet, appending subsequent test information for the same component to the spreadsheet. Operator interaction and feed back is via a touch screen HMI incorporating various charting and digital transducer read out capabilities.



DP500 Flow Test Machine

Operation:

The components are loaded onto the indexer 2 at a time. When the guard is closed and the system is ready, the components are indexed to the first station for flushing. This reverse flushes the components at up to 100 bar. The next index rotates the components to the test fixture where they are automatically clamped. When clamp pressure has been achieved the test sequence commences, only taking measurements when all the test conditions are within limits. When the test has been completed the components are unclamped and indexed to the drying station. Here they are blasted with air in an enclosed chamber to remove excess fluid. Once this has been completed the final index returns the components to the load/unload station where they are replaced with the next set of components to be tested.



CURTIS DP500 FLOW TEST MACHINE

Test Sequence:

When a test is initiated, the machine diverts flow from the bypass circuit to the test circuit and flows it through the components. The servo control on the machine stabilises the upstream pressure and the back pressure until they fall within pre-defined limits. During this process the fluid temperature is being continuously controlled to the target value. Once both the pressure and temperature are within limits the machine begins to average the flow reading from the flow meter for the given period of time. If a delta q test is being performed the upstream pressure and the back pressure are adjusted to the new targets and the control and averaging sequences started again.



DP500 Test Fixture

Specification:

- Pressure: Up to 700 bar
- Back Pressure: Up to 200 bar
- Fluid Temperature: Ambient to 40°C
- Needle Lift: Up to 5mm with 2 micron resolution
- Filtration: 3 micron