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## C.V. JOINT COMPLIANCE TEST SYSTEM

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### Determines torque versus displacement characteristics

This system is custom-designed to acquire the applied torque and angular displacement of a C.V. joint as it is twisted in the test fixture.

The C.V. joint assembly is clamped at both ends into the fixture; one end is fixed while the other is rotated by an electric motor. The motor rotates at a selectable rate between 0.1 and 1.0°/s to a selectable torque of up to 200N. As the unit rotates, hardware timed torque and position measurements are taken.

A graph of the acquired data is displayed while the test is running. At the conclusion of the test, the data and calculated values are displayed and automatically saved to disk. This data can be retrieved from disk without any loss of function.

LabVIEW was used as the control package for this test system. It completely controls the machine, acquires data, and calculates the engineering functions. This system performs linear regression to determine crossing values. Complex algorithms can be implemented automatically, eliminating a post-processing step in the testing process.



The reports are generated in MS Word format with the option to automatically print and email them to designated recipients. The reports are then named and stored on the hard drive of the PC in a meaningful, chronological order.

### Specifications:

- Encoder for 1/320° resolution
- Rotary torque cell for 1% uncertainty f.s.
- LabVIEW for control, data acquisition, and analysis
- Reports generated in MS Word
- Ability to automatically e-mail and print
- Powered by standard 120VAC from wall plug
- Capable of 50inch-long assemblies