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A Comprehensive Study of a Servo-Hydraulic Engine Mount Test Machine

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Final Project Report
April 26th, 2007

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ABSTRACT

The hydraulic test machine is the heart of product testing. Through the study of one test frame at Cooper Standard Automotive in Auburn, Indiana, this report provides detailed information on three key areas of the anatomy of the modern test machine. The first area of discussion details the physical hardware needed for testing, such as the hydraulic actuator, the servovalve, the force transducer, and the displacement transducer. The second area of discussion focuses on the Digital Signal Processor and the main function of Proportional-Integral-Derivative closed loop control. The third area of discussion focuses on the role of data acquisition in the testing world, including the electronic focused topic of analog-to-digital conversion and data storage options.

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