## Abstract Submitted for the SHOCK19 Meeting of The American Physical Society

The Effect of Confiner Concentricity on Cylinder Test Results ERIC ANDERSON, SCOTT JACKSON, VON WHITLEY, Los Alamos National Laboratory — The cylinder test is an established experiment where an explosive accelerates a copper confiner tube so that the tube velocity profile may be measured. Analysis of the results allows the explosive product equation of state to be inferred. In this work, we describe a method to measure the wall thickness of the confiner tube as a function of axial and angular position on the tube. We also describe additional assembly steps necessary to ensure maximum fidelity of wall velocity profiles measured by multiple photonic Doppler velocimetry (PDV) probes. The confiner measurements indicate that variations in confiner wall-thickness as a function of angular position on the tube are possible due to slightly off-center inner and outer tube surfaces. The results of four tests with probes positioned at the minimum, maximum, and average wall thickness for each axial probe position are reported. These results show that concentricity errors on the order of 0.0001 in. have a measurable effect on the resulting wall velocities and inferred product equation of state. Results of these tests are compared to prior tests for the same explosive.

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