CALIFORNIA SCIENCE & ENGINEERING FAIR
2019 PROJECT SUMMARY

Name(s)

Griffin Short

Project Number

J1321

Project Title

Densities of Fluids in Shock Absorbers

Abstract

Objectives

The purpose of the project is to determine if whether or not, a fluid's density will contribute to the amount of force needed to move that fluid.

Methods

Water, Vegetable oil, Fox custom oil, Table salt, 10 mL graduated cylinder, 100 mL graduated cylinder, Dynamometer machine, Shock, nitrogen

Ran the shock on the dynamometer at different velocities and the "dyno" measured the force it took to compress the shock.

Results

Force outputs did not directly vary to the density of each fluid like I thought. At times, fluids with higher densities took less force to move than a fluid with a lower density.

Conclusions

The data did not support my hypothesis. Viscosity is the main factor in this situation and my data does prove that. Water and salt-water produced almost identical results to the Fox oil meaning you could fill a shock with them, but chemical and physical reactions would be detrimental to the shock over time.

Summary Statement

I used different fluids in shock absorbers to see if it took more force to move a denser liquid.

Help Received

I used lab equipment at Fox Racing Shox under the supervision of my brother, Robert Heinevetter.