CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY

Name(s)
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Project Number
22345

Project Title
Lubrication: Performance under Pressure

Abstract

Objectives/Goals
Through my project I wanted to find the lubricantthat would withstand the most amount of pressure and produce the least amount wear on a rod and pipe assembly.

Methods/Materials
Six steel rods of the same length were fitted into six steel pipes of the corresponding diameter. Each of these rods was with one of the test lubricants. The rod with the lubricant was rotated within the pipe at extreme speeds with a drill. After the lubricant wore off and the drill locked up, the trial was over. Increasing amounts of pressure were then added to each rod and pipe assembly.

Results
The rod and pipe assembly that was applied with the graphite lubricant was able to be rotated for the longest amount of time without locking up the drill. It also was one of the lubricants that produced the least amount of wear.

Conclusions/Discussion
Graphite is the best lubricant to use when in a rod and pipe assembly rotating at high speeds and in extreme pressure conditions.

Summary Statement
This project is testing various lubricants under different amounts of pressure.

Help Received
My father helped me obtain the rod and pipe assembly and he operated the drill.