



California Science Center
CALIFORNIA STATE SCIENCE FAIR
2001 PROJECT SUMMARY

Your Name (List all student names if multiple authors.)

Scott R. Denherder

Science Fair Use Only

J0109

Project Title (Limit: 120 characters. Those beyond 120 will be ignored. See pg. 9)

Shocking News

Division

X Junior (6-8) _ Senior (9-12)

Preferred Category (See page 5 for descriptions.)

1 - Applied Mechanics/ Structures & Mechanisms/ Manufacturing

Abstract (Include Objective, Methods, Results, Conclusion. See samples on page 14.)

Use no attachments. Only text inside these boxes will be used for category assignment or given to your judges.

During the project I tested the valve stacks which are part of the shock. I used #A# and #D# valve stacks to test. I used all the same parts except for changing the valve stacks. I thought it would be an easy project but before I knew it I was talking to head engineers from Bakersfield to Michigan. A valve stack is one of the easiest parts to use to change the performance of the shock. During the testing I realized how much a thousandths of an inch could change hundreds of pounds of resistance. There are thirteen different types of shims you can use. You don't have to use all the same types of shims (valve stacks) like all #A# or all #D#. You can mix and match to achieve the resistance that you want. When I did my testing I used the shock dyno (dynamometer) at Victory Circle. I found out that the thicker the valve stack the harder it is for the shock to compress and rebound. When the shock is pushed together it is being compressed. When the shock is being pulled apart it is rebounding. The purpose of the shock is to slow down the spring movement.

Summary Statement (In one sentence, state what your project is about.)

How does changing the valve stacks in a shock effect its resistance.

Help Received in Doing Project (e.g. Mother helped type report; Neighbor helped wire board; Used lab equipment at university X under the supervision of Dr. Y; Participant in NSF Young Scholars Program) See Display Regulation #8 on page 4.

Dad and Allen Montes showed me how to use the shock dynamometer and supervised its use.