

Motion System Design – January 2010

Waving goodbye to vibration

Negative-stiffness mechanism or NSM isolators from Minus K Technology, Inc. Inglewood, Calif., enables laser and optical instruments (and micro-hardness testers and optical profilers) to operate under severe vibration that render passive and even electronic isolators impractical. The isolators can also independently adjust vertical and horizontal resonant frequencies.

Points to remember

- Good isolators shift system natural frequency as far as possible from excitation frequency: The former must be no more than one third excitation frequency.
- Where vibrations are transmitted to equipment through the floor, handheld or mounted sensors can reveal what kind of isolation the machine will require.

This Minus K negative-stiffness isolation has two column isolators. Horizontal stiffness approaches zero when the columns are loaded to critical buckling load.

