



US Patent # 6, 199, 801



Application

SoftRide ShockRing is a highly-damped flexure system designed for shock isolation of a whole spacecraft from launch vehicle induced shock loads such as fairing separation, pyrotechnic events, and motor shutdowns. This system is ideal for reducing axial (thrust-direction) and lateral shock loads imparted to the spacecraft for frequencies of about 200 Hz and above. SoftRide ShockRing may be inserted at any field joint below the spacecraft and does not require modifications to flight hardware.

Features

- Attenuates axial and lateral vehicle shock loads
- Scalable to any launch vehicle diameter
- Aluminum construction
- Constrained layer damping
- Linear passive isolation system, no linkages, no fluids

Specifications

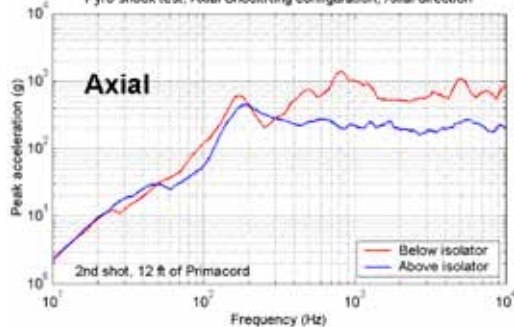
- Isolation frequency: Mission-specific, 70 Hz to 150 Hz
- Damping: Approximately 15% critical
- Weight: Mission-specific, approximately 25 lb to 50 lb
- Dimensions: Typically about 2.5 to 3.5 inches high
- Payload weight: Isolator can be sized for any payload

Flight Heritage

First flights were on VALPE Terrier-Orion launches in November 2002 and August 2003. Manifested for ESPA/FalconSat3 on STP-1 Atlas V launch March 2007.

Pyrotechnic Shock Test Data

Pyro shock test, Axial ShockRing configuration, Axial direction



Pyro shock test, Axial ShockRing configuration, Lateral direction

