

SHOCK GENERATOR

Technological advantages

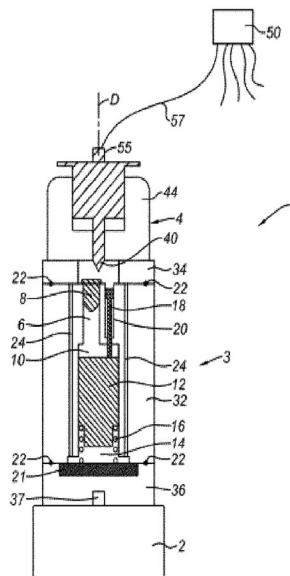
- 🔗 Fine control over the shock magnitude
- 🔗 Several generators may be synchronized or de-phased
- 🔗 No particulate contamination
- 🔗 Ease of use and maintenance
- 🔗 Accurate

Invention synthesis

The invention deals with a cartridge based shock generator and a synchronization or de-phasing process between generators.

Traditionally, pyrotechnic shock generators are used for ground testing to reproduce mission events (eg rocket separation, deployment, ...). Setting the magnitude level is not simple, the pyrotechnic maintenance is complex and there are contamination risks. Pneumatic hammers are difficult to use accurately (manually set-up).

The invention presents a shock generator system using a pyrotechnic cartridge. Combustion gases remains in the water-tight body and may be flushed. The impactor stroke may be fine tuned (setting the initial location) so as to control the shock magnitude. Electric commands allow to operate generators in-phase and in a timely manner.



Schematic view for a shock generator

- (6) Receiver chamber
- (8) Pyrotechnic cartridge
- (10) Expansion chamber
- (12) Impinger
- (14) Boring

Commercial benefits

- Simple system to set-up and use, efficient and compatible with constraining environments (white room, ...)

Potential applications

- Applications for testing mechanical environments with pyrotechnic shock impingers : defense, aeronautics and space (satellites).

Patented invention - under license.