

Reducing Noise and Vibration Damage in Mobile Units Enidine Vibration Isolation Application

Courtesy of Credimex AG

Product Overview

A Swiss manufacturer of mobile power units needed to actively isolate the internal electronic components of its newest generator. Units were designed to provide high-energy outputs with less noise than in previous models. To achieve this effect, the manufacturer attempted to use standard elastomers and other low-cost isolators, which did not pass its rigorous quality tests.

A viable solution would have to provide four-point fixation between the rack of the power unit and the housing, while actively isolating the motor vibration. It would also need to operate over a long cycle life while exposed to heat, oil, water and steam and when mounted in a confined space. After seeing ITT Enidine Inc.'s wire rope technology in a local trade publication, the company approached us for assistance.



Product Solution

Mobile Power Unit Technical Data:

- ✦ Total weight: 130 kg
- ✦ Total weight to be isolated: 115 kg (between 24 and 37 kg per point)
- ✦ Motor cycle rate: 1.700 - 3.600 RPMs
- ✦ Temperature range within transport: -25°C to 55°C
- ✦ Temperature range in operation: 0°C to 110°C
- ✦ Requested vibration isolation: > 80%
- ✦ Maximum axial force: 5 g

Due to the multitude of customer specifications and product requirements, the application was rather challenging. The high temperature range and limited space further restricted the number of available solutions. When the equipment was originally designed, the use of ITT Enidine Inc. Wire Rope Isolators was not considered.

Application Opportunity

The use of ITT Enidine Inc. Wire Technology is an effective means of providing multi-axis shock and vibration isolation in harsh environments, or where sway and package space are a premium. ITT Enidine Inc. Wire Rope Isolators are competitively priced to replace low-cost elastomers, particularly where more stability and endurance are required. Any manufacturer of power generators or electronic components, particularly those attempting to reduce vibration caused by noise, could benefit from the use of this technology.