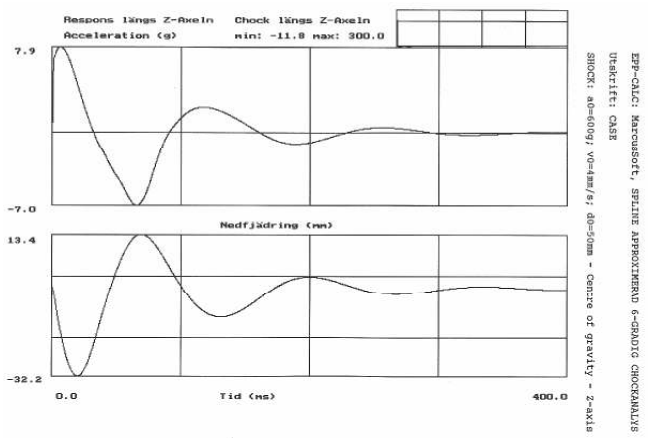
Vibratec®
akustikprodukter

Engineering

SHOCK AND VIBRATION CALCULATION AND ANALYSIS

Some resilient suspensions may be rather complicated to calculate. Akustikprodukter Norge (APN) offers a complete shock and vibration engineering service. Many years of experience in the field, combined with use of modern tools, enable us making the optimized selection of resilient mounts for your applications and ensure that the suspension meets the required standards or demands. Utilizing our sophisticated vibration and shock calculation program, elements like 6 degrees of freedom, inertia of moments, centre of gravity of the suspended unit, dynamic stiffness of the selected mounts, earth gravitation, inherent damping, etc., are taken into account. The results of our calculations and analyses are supported by an explanatory summary report.



Residual shock determined by our calculation programme.

The upper graph indicates the residual shock measured at the centre of gravity of a suspended unit. Basis for the analysis is a double sine shock pulse (300g/-11.8g) with the durations of 1.4 and 36 ms., respectively. The values are calculated on the basis of a shock spectrum nomogram.

The lower graph indicates the dynamic travel, generated by the shock pulse, as well as the duration of the oscillation. The short duration is typical for a suspension using resilient mounts with essential inherent damping, like cable mounts.

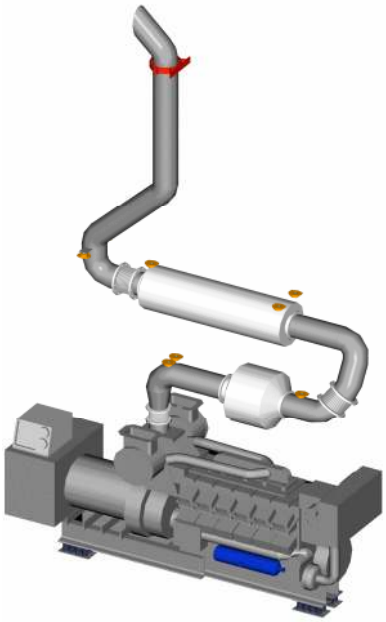
Shock insulation of sensitive mobile electronics.

Cable mounts, located in each of the four corners, are fixed between the inner cabinet containing sensitive components, and the outer protecting cabinet. The load mode is thus 45º compression/roll at the bottom and 45º tension/roll at the top of the inner cabinet. To select shock mounts for applications like this may require our engineering assistance.

3D DESIGN AND ANALYSIS

In order to optimize development projects it is highly important to avoid deviations and to communicate with all involved parties.

A sound technical design and low costs demand focus, visualization of ideas and early verification of said ideas. This can be achieved by using modern development tools for 3D CAD and FEM-based analysis. To avoid late discovery of a weak or inconsistent design we can supply your projects with 3D design and analysis of resonant frequencies and shock, as well as mechanical and thermal stress.



With modern 3D tools one can develop the basic geometry early and communicate the design via visualized data and models for analyses and better understanding. At the same time, the parametric data of the computer models provide freedom to change basic dimensions late in the project and still reach critical milestones.

The modern tools available make the communication between the parties effective. You may, f. inst., transfer your basic drawing of a complete exhaust system in 2D or 3D format by e-mail, whereupon we return it to you with adviced components - Silencer(s), Compensators, contingent Catalytic Converter, Resilient Mounts, etc. - implemented to the drawing and located in accordance with our proposal.

Founded in 1995, Akustikprodukter Norge AS (APN) joined in 1999 the **Vibratec Akustikprodukter** group, one of the leading suppliers of noise and vibration insulating products in Scandinavia. We are sole manufacturer of cable mounts in the region and offer extensive engineering assistance related to shock and vibration, as well as mechanical and thermal stress.

Norway
P.O.Box 765, N-3196 Horten, Norway
Tel: +47 33 07 07 50 Fax: +47 33 07 00 68
e-mail: apn@apn.no

Sweden
Norrsund 1859, S-760 17 Blidö, Sweden
Tel: +46 176 20 78 80 Fax: +46 176 20 78 99
e-mail: info@vibratec.se