**Press Release**

Date: March 2022

Topic: ACE vibration control for more peace and comfort in vehicle technology

**Good Night, Compressor Noise!**

**ACE anti-vibration mounts keep luxury coach quiet**

**Upgrading a large luxury coach with inexpensive, small components — what sounds like a paradox was realized by a Dutch construction designer by equipping the auxiliary air compressors of his motor home with vibration absorbers from ACE as extras, thus ensuring a quieter environment inside when parked.**

In times of the global Corona pandemic, mobile homes are more popular than ever. There are a wide variety of mobile options for individual travel. The most luxurious ones are coaches and Recreational Vehicles (RV) from various suppliers in the United States of America. The mobile homes in this sector have developed into mobile five-star hotels with elegant interiors, exclusive exteriors and powerful engines. Neither loudly humming air conditioning systems nor other technical systems operated by the power of compressors such as air suspension, door opening and closing systems or sanitary facilities fit into the picture. While driving, the additional background noise from these consumers is not quite as disturbing, especially since the compressor connected to the engine then provides the compressed air. However, once stopped, the travelers also want to have their peace and quiet in the truest sense of the word. In the present case, when parked and with the main engine shut off, two auxiliary compressors take on the task of ensuring a comfortable mobile living environment. In detail, the problem with the air supply system for the vehicle suspension, doors and toilets was the fastening of the respective compressors. Mounted in one of the technology and supply areas below the mobile home, they transmitted the vibrations to the body. This resulted in clearly noticeable and audible vibrations, which the owner did not want to tolerate, especially as the two smaller compressors run intermittently and at intervals of 15 to 30 minutes depending on air consumption, which proved to be intolerable, especially at night.

**Work experience a plus**

Peter van Dijk, successor of the founding generation and senior partner of the Dutch company Dijko Ovens B.V. from Tilburg, felt compelled to act. As a mechanical engineer and expert in the automation and electronic control of oven systems with integrated vacuum and deep-freezing for large bakeries, neither air conditioning nor pneumatic systems and compressors are a closed book for him. So he searched the Internet for industry proven components for isolating vibrations. After a few clicks, he came across the Dutch language version of ACE Stoßdämpfer GmbH’s website:

[www.ace-ace.nl/nl/](http://www.ace-ace.nl/nl/)

It struck him that the company from the Rhineland, in addition to products from the areas of Automation Control, Motion Control and Safety Products, also has a large number of solutions for Vibration Control in stock. This market segment is of increasing importance at ACE, since the strict

requirements of employee protection, including noise pollution, can be met with vibration-isolating pads, rubber-metal isolators and low frequency pneumatic leveling mounts such as air springs. The field of vibration absorbers alone now consists of eleven different product families at ACE. Summarized under the collective term rubber-metal isolators, these components enable a wide range of applications. In doing so, they insulate disruptive shocks and vibrations from machines and engines to such an extent that working conditions for people and the environment improve significantly. For example, in the field of measurement technology, it is often only through their application that usable results come about. Whether it is leveling or robust machine feet, tube elements, vibration isolating connection elements or quick attachment elements, all ACE rubber-metal isolators can be used universally. They represent ideal solutions for most of the vibration isolation problems known in industrial applications. The additional bonus that the internationally renowned service from ACE also helps with individual projects is shown by the fact that the successful computing for making the air compressors of the mobile home less noisy was made possible by using ACE’s free calculation tool:

[www.ace-ace.nl/nl/berekeningen/trillingsdemper-berekening.html](http://www.ace-ace.nl/nl/berekeningen/trillingsdemper-berekening.html)

**Finding a customized design within a few clicks**

After considering all key data relevant to the respective construction, such as weight and support points, the sizing tool specially developed by ACE calculates the center of mass of the machine and thus the individual load on the support points, whereby eccentric loads can also be entered. The program employed is available online and is so intuitive to use that in many cases engineers and designers can find the ideal solution for vibration isolation in just a few steps, 24 hours a day. If desired, only fail-safe absorber types can be selected. However, the software not only determines which vibration absorbers best match the entered values, but also enables orders to be placed in the connected online shop.

In the present case, the program suggested Bubble Mounts, specifically of the BM-50641 type. These inexpensive and efficient helpers achieve an insulation level of 95.65 percent under the given conditions and are designed especially for use under load in vertical compression loads. Being designed as low frequency vibration absorbers, the BM types reliably protect electronic and medical equipment, aircraft avionics and computers. As this case proves, they can also be used for effectively isolating small pumps and compressors. They are available in two low frequency vibration isolation versions while the five different available types withstand loads between 0.7 kg and 8.2 kg. Despite being small, all of them offer high-impact cushioning, which can be increased by the use of silicone. Their natural frequency with a nominal load of 8 Hz is so low that dangerous vibrations can be effectively eliminated in most cases. Like their siblings, the BM-50641 used here are easy to install and accept loads of 1.2 kg to 2.9 kg.

Peter van Dijk looks back on the assembly process and the replacement of the components: “The original anti-vibration was done with ordinary cylindrical rubber spacers, measuring 15 mm in diameter and a height of 15 mm. This was very inefficient for the isolation of the compressors, and it transduced a lot of vibration. Just after replacing these original washers on the first compressor with ACE’s components, a difference was already noticeable and tangible, as my video also shows.” To distribute the load evenly, both compressors, weighing in at 7.3 kg each, are now mounted at all four respective points with the fitting components provided by ACE. The degree of insulation of 95.65 percent determined in theory now also ensures in practice that Peter van Dijk's coach meets the standards of a 5-star hotel when parked, and especially at night.

1.049 words, 6.762 characters with spaces

**Pictures and Captions**

Picture 1 Full Shot Peter van Dijk Coach.jpg



Especially when parked, travelers of coaches and RVs prefer to have some peace and quiet. Therefore, AC- and other technical systems for the air suspension as well as for the operation of doors and sanitary rooms should cause as little noise as possible, preferably at night

**Picture Credit:** Peter van Dijk

Picture 2 ACE Sizing Tool.jpg



ACE’s sizing tool for machine foundation isolation is available around the clock for quick and easy input and precise configuration in Dutch and German language versions:

[www.ace-ace.nl/nl/berekeningen/trillingsdemper-berekening.html](http://www.ace-ace.nl/nl/berekeningen/trillingsdemper-berekening.html)

ACE also offers a free calculation service in English

<https://www.acecontrols.co.uk/uk/sizing/vibration-control/free-calculation-service.html>

**Picture Credit:** ACE Stoßdämpfer GmbH

Picture 3 Peter van Dijk Coach and Compressor Detail.jpg



Vibration isolation leads to noise reduction in this particular case and many others

**Picture Credit:** Peter van Dijk

Picture 4 ACE Bubble Mount.tif



ACE's low frequency vibration absorbers of the BM type reliably protect electronic and medical equipment, aircraft avionics as well as computers and can also be used for isolating pumps and compressors

**Picture Credit:** ACE Stoßdämpfer GmbH

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**Download link to video**

<http://cms.plus-2.de/ftp/downloadFiles/ACE/With_and_without_ACE_Bubble_Mount_Air_Compressor_RV_Petervan_Dijk.MP4>

**Links to background information**

[www.dijko.com](http://www.dijko.com)

<https://www.dijko.com/about/>

<https://www.acecontrols.co.uk/uk/products/vibration-control/rubber-metal-isolators/bubble-mounts.html>

<https://www.ace-ace.nl/nl/producten/vibratietechniek/rubber-metaal-isolatoren/bubble-mounts.html>

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