

Customer Success Story: An Off-The-Shelf Vibration Solution

We make it **possible**

Problem:

A competitor's isolators were insufficiently reducing vibration in a medical device manufacturer's portable oxygen concentrator pump.

Solution:

Our engineers analyzed the pump system and recommended one of our commercial off-the-shelf (COTS) ball mount series vibration isolators to improve performance.

Results:

The COTS isolator allowed the customer to achieve the desired vibration reduction, which would improve the pump's service life, save the customer time and money and increase comfort for the oxygen concentrator's end user.

Across the world, many people rely on medical devices to maintain a healthy and fulfilling life. But like most technology, this equipment often comes with challenges that can impede performance and reduce effectiveness for end users.

We recently worked with a customer to solve noise and vibration issues in a medical device manufacturer's portable oxygen concentrator, which provides supplemental air to patients. Too much noise and vibration from the concentrator's pump could cause discomfort for patients as well as gradual damage to the component itself.

Analysis and Testing

Our customer, a consulting company, had already installed our competitor's vibration isolator in the concentrator's pump system, but they were unhappy with its performance. Bound by our customer's limited space restrictions, we went to work devising an alternative solution.

After a quick theoretical analysis of the system, we recommended using our commercial off-the-shelf (COTS) ball mount series vibration isolators in place of the competitor's parts. Finding that our turnkey isolator would fit into their installation, the customer brought the system to our facility to measure the vibration and test our recommended isolator.

After installing accelerometers to record the pump's vibrations, we reviewed the data and selected an isolator that would provide the desired performance. To nobody's surprise, this isolator improved vibration reduction on the first try. But we knew we could do even better.

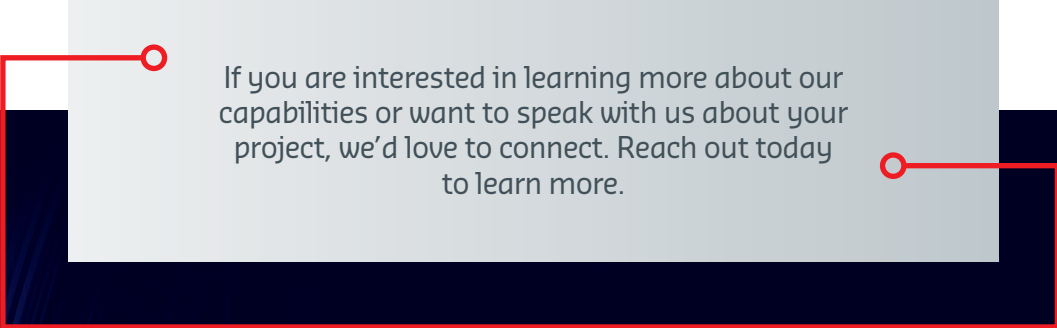
Using the information we'd obtained, we fine-tuned our solution by implementing a ball mount of the same size and installation, but a different stiffness of rubber—and

achieved optimal results. The customer was thrilled with the final isolator, and we provided them with samples they could use to conduct further testing.

An Effective Solution

Ultimately, our COTS part reduced noise and vibration, which would help ensure comfort for patients who used the oxygen concentrator. The selected part was also much easier to install than the competitor's and would increase the service life of the pump. The customer has since ordered 10,000 units of this isolator, and they expect this quantity to double annually.

While we are leaders in custom shock, noise and vibration solutions, we always start with our extensive catalog of turnkey products; as in this example, one just might do the trick. By leveraging our testing capabilities, knowledge of our standard products and expertise in vibration theory, we provided our customer with the best possible solution quickly and efficiently.



If you are interested in learning more about our capabilities or want to speak with us about your project, we'd love to connect. Reach out today to learn more.