

We make it **possible**

Custom Solution for Torpedo Propulsion

Problem:

An applied research laboratory at a major university required a custom silicone ring mount system and urethane coupling that could withstand long-term, high-torque and high-RPM propulsion activity.

Solution:

Using our design tools, testing lab and extensive database of silicone properties, we established the optimal configuration and material selection for the desired stiffness, in order to create a softer add-on ring mount post-molding.

Results:

Our high-quality precision parts have allowed the customer to stay on their testing schedule while eliminating the costs of procuring a new mold, leading to several new inquiries. max acceleration levels—and passed the shock test.

When it comes to underwater propulsion, parts and assemblies must be able to survive long-lasting, strenuous activity. We recently worked with a major university's applied research laboratory, which required an overhauled propulsion system in a "torpedo-like" vehicle. Specifically, the customer required a large, custom silicone ring mount system with a custom urethane coupling that could withstand long-term, high-torque and high-RPM activity. The parts had to be custom-made precision assemblies—off-the-shelf products cobbled into an assembly wouldn't cut it.

The History

The Hutchinson team had previously worked with this applied research lab on the design and manufacture of torpedo ejection pump isolation systems used on Seawolf- and Virginia-class submarines. As the engineering team for the previous design, we were given the opportunity to design the new project for the lab. The customer saw us as a resource to assist them in creating an effective solution that could really push the laws of physics

Building a Custom Solution

We do more than provide shock and vibration solutions—we're a part of the process. As custom system design and analysis specialists, we were able to help our customer go beyond what they considered possible for this precision assembly. The creative process was an especially difficult one, as our engineering team had to work through several stages of trial and error to create multiple ring mount prototypes, test their capabilities and tweak the design.

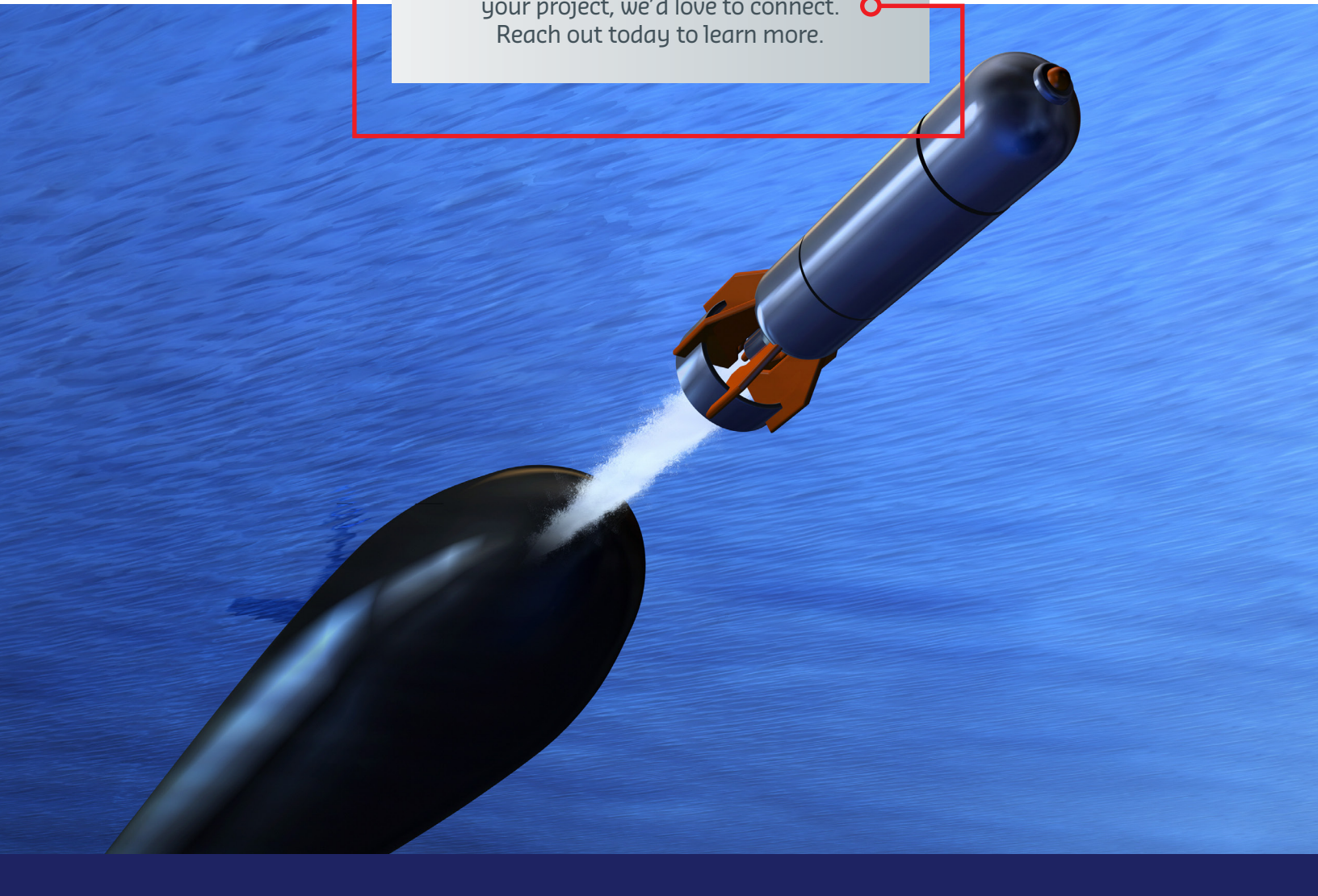
In the end, using our design tools, testing lab and extensive database of silicone properties, we established the optimal configuration and material selection for desired stiffness to create a softer add-on ring mount post-molding—

eliminating the need to create another mold. We presented the customer with a design that included two different mounts with asymmetrical loading, as the necessary loading could fluctuate depending on other design elements.

The Results

The project is currently in the testing phase and our high-quality, precision parts have allowed the customer to stay on their testing schedule. Additionally, we saved them the cost of procuring a new mold by using a post-molding product modification. The success in this project has already led to multiple inquiries.

At Hutchinson, we leverage our combined years of industry knowledge and experience to provide high-quality and customizable shock and vibration solutions that will exceed customer expectations. As a satisfied customer once told us: "If we ask what time it is, Hutchinson tells us how to build a watch—and that's exactly what we need."



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