

Compact by Design

Bulk Storage and Conveying Equipment Hopper Agitation to Prevent Media Clumping

Application Challenge

A manufacturer of dry ice blasting machines needed an improved method to prevent clumping of dry ice in their equipment hopper. In order to prevent clumping, the hopper had to be agitated several times per minute utilizing a standard NFPA cylinder. This cylinder completed the task, however the unit was large, noisy, required the addition of a three pound weight to the end of the actuator shaft, it also had pinch points that needed to be guarded against injuries.

Project Solution

Compact Automation developed a fully custom actuator that delivered the required force in a smaller package. This new design put all of the required mass in the actuator piston which eliminated all external moving parts and pinch points. Finally, Compact collaborated with the customer on a bumper design that dramatically reduced the noise level while still delivering the required amount of energy to agitate the hopper.

Customer Benefit

As a result of using a custom actuator from Compact, the customer was able to launch a new line of dry ice blasters that had a simpler design and were much safer for end users.

Insights

- Media clumping is a problem in a wide variety of industries. This same type of product opportunity exists in industries such as agriculture, food processing, and cosmetics.
- While a fully custom actuator may be more expensive, it often reduces overall cost by reducing part count. In this case no added weight and no required guarding.
- A custom actuator also leads to a much simpler and elegant product design.
- Safety can be a powerful selling point for original equipment manufacturers.

