

## Locking Gas Springs Ensure Safety And Flexibility of Medical System

*Industrial gas springs boost comfort and usability for caregivers and patients.*

Heavy-duty gas springs are often used to replace or supplement human power when lifting or lowering heavy loads such as lids, hoods and flaps in construction and industrial applications. In medical settings, gas springs can be found on a variety of equipment, from operating tables and hospital beds to mobility systems for people with disabilities. In all these cases, precisely controlled motion is vital for the safety and comfort of both patients and caregivers.

ACE Controls designs and manufactures a wide range of maintenance-free gas springs in diameters from 8 to 70 mm and forces from 10 to 13000 N. In addition, ACE frequently works with manufacturers requiring customized versions. One recent case involved Rifton Equipment, a medical supply company specializing in adaptive devices for children and adults with disabilities. The company wanted to design its latest generation of personal hygiene chairs to allow tilting forward and back for tasks such as hair washing, bathing and using the toilette. Gas springs were required, but they needed to easily lock and release at the push of a button and also stand up to environmental challenges such as moisture, spraying water and harsh cleaning agents.



*Rifton's successful Hygiene and Toileting System (HTS) now features unique Tilt-In-Space functions thanks to the use of customized locking gas springs provided by ACE Controls.*

ACE's application engineers worked with Rifton's product designers to develop a customized gas spring that would meet their specifications and budget constraints.

Standard industrial gas springs were modified to include a locking function, which stops the chair from moving and locks it securely into place at a 15° angle in either direction. To withstand the moist and wet bathroom environments the chair is designed for, engineers used stainless steel bodies to prevent corrosion and safeguard springs from cleaning agents such as bleach. The mobility system is now available in three sizes, with each chair featuring two customized gas springs to securely lock the system into the desired position.

Springs are filled with pressurized nitrogen. At the push of a button, the piston valve opens and gas streams in. The piston rod can then be extended or pushed in. When the button is released, the gas spring valve automatically closes and the rod stays locked into position. ACE offers several styles of locking gas springs to meet the requirements of different applications. Choices include elastic or rigid locking designs, in addition to completely rigid, free-moving locking and double locking versions. Material choices include traditional steel as well as 304 and 316 stainless steels.

Due to the locking gas springs, the newly flexible hygiene system has become a welcome addition to the mobility equipment available to people with disabilities and their caregivers. ACE's engineering team helped tailor the



*Stainless steel gas springs from ACE Controls prevent corrosion in damp environments. They enable the Rifton HTS to tilt 15° forward for easier transfer and better toileting position, as well as 15° back for showering and hair washing.*

locking gas springs to the exact specifications required by the medical equipment company and the customers they serve around the world. Whether an off-the-shelf version is sufficient or a custom design is needed, ACE Controls is a trusted supplier of industrial gas springs built to lift and lower loads in a safe, reliable and precisely controlled manner.

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