

Industrial Gas Springs Help Intensive Care Teams Fight COVID-19

As Wuhan, China became the first metropolis to confront the fast-spreading SARS-CoV-2 virus, crisis managers desperately needed equipment, including mobile X-ray machines. These devices would provide intensive care physicians with pictures of patients' lungs quickly.

Shortly before the outbreak, medical imaging specialist Beijing Wandong Medical Technology Co., Ltd. began developing a mobile X-ray device with a beam arm that could be adjusted based on the patient's anatomy. The machine's design required a reliable gas spring that could support the arm and prevent it from dropping—ensuring the safety of both users and patients. Suddenly Beijing Wandong needed a large quantity of springs, and they needed it quickly.

These are the reasons why Beijing Wandong Medical Technology Co. Ltd. turned to an ACE Controls parent company, STABILUS Group, and our local sales partner. According to Lu Fei, a project manager at Wandong, the company explored the gas spring market and tested products from various manufacturers prior to the pandemic, which helped speed up production. “Even at this stage, our first choice was a solution from ACE,” said Fei. “The company promised to deliver several hundred units of consistent quality in the shortest possible time.”

“Faced with a severe epidemic, every minute and every second counted,” added Dr. Tian Xuefeng, managing director of STABILUS (Jiangsu) Co., Ltd.



The ACE Controls' GS-28-450 pull-type gas spring provided a 270-pound traction force and low progression rate to hold the mobile X-ray device's beam arm in the final position and support raising and lowering motion.



Gas Springs Save Space and Provide Support

The mobile X-ray machine weighed in at 66.1 pounds, while its beam arm weighed 22 pounds. In addition to the total weight, ACE engineers had to take into account the starting point (0 degrees) and opening angle (130 degrees) when choosing the specific gas spring. Since the gas springs would be installed inside the beam for ergonomic reasons, hygienic regulations didn't apply, and a stainless steel version was not necessary for this device.

The engineering team selected GZ-28-450 pull-type gas springs, which are part of our industrial gas spring family with body diameters from 0.59 to 1.57 inches and traction forces from 8.99 to 1,124 pounds. GZ-28-450 gas springs have a 1.10-inch outer diameter and a maximum force of 2,700 pounds at a stroke length of 17.72 inches — making them well-suited to meet the mobile X-ray unit's requirements.

Not only did these gas springs reliably hold the beam arm in its final position, they also added muscle when raising and lowering the arm. In doing so, they work in an opposite way than push-type gas springs: the gas pressure in the cylinder draws the piston rod in and supports the manual force required for controlled motion when moving the arm. And no matter the stroke length, the GZ-28-450's traction force is adjustable, thanks to its built-in relief valve.

The GZ-28-450 also features:

- Solid chrome plated piston rods and integrated slide bearings.
- Maintenance-free
- Ready-to-install.
- Available with a large selection of accessories.



Wandong's mobile X-ray system ready for use.

Reliable Gas Springs Overcome a Unique Challenge

Whether during peak crisis times or the calm clinical situations afterward, our industrial gas springs have increased the safety and user-friendliness of Wandong's mobile X-ray units. And like our industrial gas springs, we lived up to our reputation for solving problems by delivering a critically needed product without delay.

To learn more, please visit: www.acecontrols.com