

Gas Springs Help Heavy Wooden Gate Roll Over Uneven Ground

Sometimes even the simplest thing, like attaching wheels to a heavy object, can create engineering challenges—something Jorkisch recently overcame with the help of industrial gas springs from ACE Controls.

Here's how:

Preventing The Wheels From Rolling Freely.

Jorkisch specializes in wood supply: from firewood to fully-constructed garden sheds, the German company provides both raw wood and finished wood products for a variety of applications. Recently, the company was hired to design and construct a large, wooden gate around a camp. In keeping with the customer's requirements, technicians attached rubber wheels to the bottom of the door so that personnel could roll the door to the open and closed positions. But this design feature posed a problem: due to the heaviness of the door and the uneven ground, rolling the door was far from quick and easy.

In general, when wheels are mounted under uncontrolled weight, overcoming unevenness in the ground is difficult. Like a car driving over a bumpy road, the wheels, which must support the weight of the car, have the tendency to jerk left or right—causing potential damage to the wheels. To avoid this phenomenon, mounted wheels should be able to move freely without having to support the load.



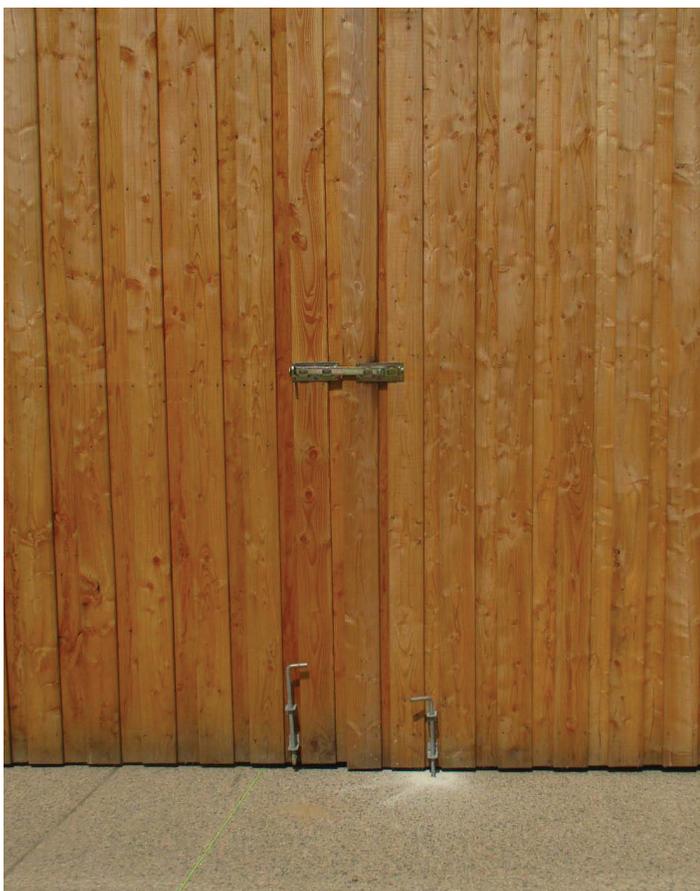
Thanks to the springs, camp personnel have been able to roll the wooden gate with ease despite the uneven ground.



To support the weight of the door, Jorkisch integrated ACE industrial gas springs into the wheel's metal supports.

According to Jorkisch, most commercially available gate rollers are equipped with integrated spiral springs. But under the weight of the wooden door, these off-the-shelf components still prevented the wheel from rolling freely.

That's when the company turned to ACE.



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Finding A Solution In ACE Industrial Gas Springs.

To support the weight of the door, Jorkisch technicians selected ACE industrial gas springs, rather than spiral springs, and integrated them into the wheels' metal supports. Depending on the size, these maintenance-free, adjustable components can handle forces up to 13,000 N, provide up to a 1,000-mm stroke and operate via pressurized nitrogen gas. ACE engineers fill the springs with the gas according to an application's individual pressure requirements.

In this case, technicians selected a 40-mm model (type GS-40-200), which can deliver forces up to 5,000 N—far exceeding the door's requirements. By utilizing the spring's adjustable valve, however, the technicians fit the component to the weight of the door, reducing the amount of force from 5,000 to 500 N.

Thanks to the springs, camp personnel have been able to roll the wooden gate with ease despite the uneven ground—and the customer is confident the components will stand the test of time. To that end, ACE designs its gas springs to be durable: they feature a wear-resistant surface coating on the piston, steel-coated outer body and wide temperature range (-4° to +176°F).

In addition to this case example, the gas springs can be used in a variety of applications, including conveyor systems, assembly stations, machine housing and vehicle technology.

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