

# Cage Guardian™ Safety brake

Reliable cage-occupant protection



**FLS**

# Keep your people safe during suspension failure events

Suspension-failure events should never happen, but if they do, you want a safety brake system you can count on. Unfortunately, not all safety brakes are up to the task. Wooden guides are subject to higher wear rates, moisture, damage and defect issues and they must be immediately replaced after every safety catch event. Add that to the fact that high-quality, consistent timber guides are becoming ever more difficult to obtain, and you're faced with some potentially dangerous and expensive problems.

Introducing our FLS Cage Guardian™ Safety Brake solution.

Built for control, longevity, reliability and low maintenance, the patented Cage Guardian Safety Brake System uses engineered steel guides and a self-contained brake path. The end result? A reliable, reusable safety brake system that you can depend on.

## Key benefits

- Actuates automatically upon suspension failure
- Increased durability and reusability
- Meets strict mining safety regulations
- Incorporates multiple redundant mechanical systems
- Usable under all personnel conditions

# Two configurations to equip your entire mine site

The Cage Guardian™ Safety Brake system can be designed to suit an entire range of cage sizes from smaller 2-guide auxiliary cages to larger 4-guide cages exceeding 60,000 lb (15,000 lb per guide).

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|--|---|---|--|
|  | <p>Capacity range:<br/>Max. 13,600 kg<br/>(30,000 lbs)*</p> <hr/> <p>Single-point<br/>actuation</p> <hr/> <p>Corrosion resistant<br/>materials</p> <hr/> <p>Redundant stops<br/>and shear bolts</p> |  | <p>Capacity range:<br/>Max. 27,200 kg<br/>(63,000 lbs)*</p> <hr/> <p>Synchronized<br/>actuation system</p> <hr/> <p>Corrosion resistant<br/>materials</p> <hr/> <p>Redundant stops<br/>and shear bolts</p> |
|--|---|---|--|

## Superior safety

Your people put a lot of trust in safety brake systems. FLSmith makes sure that our patented systems are worthy of that trust. That's why we free-fall test every brake before we allow them to be used; every brake we offer is officially documented and certified, so you know that it's up to the task before you trust it to protect your people. And, in the unlikely event that part of the brake fails, multiple redundant mechanical systems ensure that the conveyance (and everyone it's carrying) comes to a safe stop. The Cage Guardian Safety Brake system uses a progressively increasing brake force with average deceleration rates of 9 to 20 m/s/s (29.5 to 65.6 ft/s/s), meaning cage occupants are significantly less likely to experience the kinds of injuries that come from sudden stops.

## Reduced maintenance and repair costs

Occupants should be your primary concern during suspension failure events. But your equipment and infrastructure is often at risk as well. Traditional safety catch systems can incur some serious damage, and when coupled with the day-to-day wear and corrosion of the mine-shaft environment, mining companies often end up spending significant amounts on safety catch repair and maintenance.

By employing engineered steel guides, the Cage Guardian Safety Brake system offers durability unmatched by safety catches and timber guides. And when a slack-rope or rope-break event does occur, components are designed to deploy without taking any damage; simply retrieve the cage back to surface, thoroughly inspect cage and brake, and reset the brake in preparation for any further event(s). Durable and reusable, the Cage Guardian Safety Brake solution provides a cost-effective alternative to traditional safety brake repair and maintenance expenses.

## Reliable mechanical design

You shouldn't have to depend on outside power sources to keep your people protected. The Cage Guardian Safety Brake system is completely mechanical. In the event of suspension failure, the weight of the cage itself causes the safety brake to actuate, holding the cage securely in place to await retrieval. There are no hydraulic, pneumatic or electrical components in the brakes themselves, and no external energy source is required. This mechanical design not only allows for effective braking under all conditions, it also averts the risk of malfunction commonly associated with hydraulic and pneumatic components. This means a more secure system overall, as well as fewer repair costs for your business.

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