SARCOS® | ROBOTICS

Leading the charge in robotic systems designed to maximize workforce potential through increased safety and efficiency.

Expanding the Limits of Human Potential™

GUARDIAN® XO®

The Guardian® XO® full-body exoskeleton is the world's first battery-powered industrial robot to combine human intelligence, instinct, and judgment with the power, endurance, and precision of machines. Set to transform the way work gets done, the Guardian XO exoskeleton augments operator strength without restricting freedom of movement to boost productivity while dramatically reducing injuries.

The Images of the Guardian XO exoskeleton are representations only. Images of the commercial version are not yet avaiilable.

GUARDIAN® XO®

The Guardian® XO®exoskeleton makes light work of heavy-duty tasks, empowering the operator to safely lift and manipulate up to 200 pounds (90 kilograms) without fatigue or strain.

Designed for Added Strength and Endurance:

- Full-body, powered design reduces operator metabolic output and physical strain by offloading 100% of the exoskeleton's weight during use
- Robotic suit amplifies operator strength by a factor of up to 20x (with maximum payload of up to 200 lb) and can also enable smoother lifting motion by dynamically compensating for gravity and inertia (for up to 100 lb per arm or 50 lb per arm when lifting at full extension)
- Addresses the 35 lb – 200 lb (15 kg to 90 kg) "lift gap" across a wide range of industrial processes

Battery-powered for Mobile Performance & Uninterrupted Use:

- Onboard power source offers near-continuous operation with hot-swappable batteries
- XO® Pod docking station facilitates battery charging as well as easy don/doff operation and configurations for transport/shipping

Advanced Control Systems for Enhanced Maneuverability & Mobility:

- "Get-out-of-the-way" control system uses robot-integrated sensors to eliminate latency, detecting operator movements within milliseconds
- 24 Degrees of Freedom (DOFs)[1] allow the operator to move freely and naturally in unstructured environments where larger machinery is unable to access
- "Hands-free" mode allows operator to lock the suit's arms and simultaneously complete dexterous tasks requiring human hands, while carrying a heavy load
- Equipped with user-friendly Operator Control Interface (OCI) for user controls and diagnostic notification display
- Supports modular and user-selectable end effectors

Ergonomic, Safety-first Features for Operator Comfort & Injury Prevention:

- In the event of sudden power loss, redundant hardware and software limit-stops enable "passive braking" to prevent operator injury
- Highly responsive control system enables operator to fluidly execute fall-prevention motions such as stumble-recovery
- Robotic suit can be donned and doffed unassisted in less than 30 seconds, with additional provisions for sudden egress
- Can accommodate additional, customer-specialized protective gear; also equipped with lifting loop for docking and attachment of fall-prevention device (FPD)

Use Cases

The Guardian® XO® exoskeleton is uniquely equipped to increase worker safety and efficiency across a wide variety of industries, including:

Industrial Manufacturing
Oil & Gas
Maritime
Construction
Automotive
Military & Defense
Distribution & Warehousing
Aviation & Aerospace

[1]Not including optional end effectors.

See how Sarcos Robotics can transform your workplace safety and efficiency.

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