Leading the charge in military-grade systems designed to maximize the operational potential of our nation’s military workforce through increased safety, efficiency, and security.

GUARDIAN® HLS
Heavy-Lift System

The Ultimate Heavy-Lifting Solution for a Highly Mobile Military Force

The Guardian® HLS heavy-lift system is a pneumatic rescue and recovery system designed to lift armored tactical vehicles and other substantial payloads when the speed, timing, and accuracy of operations are crucial. Compact, portable, and easy to operate, the Guardian HLS heavy lift system can be deployed quickly and provide immediate asset recovery and emergency response, ensuring the safety and success of the U.S. military’s various missions.

Pneumatic Heavy-Lift Rescue and Recovery System

- Extreme lifting force of the system’s battery-powered, pneumatic compressor lifts 45,000 lb of payload with only two airbags; only one air bag needed for lighter loads
- Lightweight and man-packable for a range of operations, including dismounted rescue/recovery, Combat Search and Rescue (CSAR), and humanitarian rescue relief
- Able to lift various payloads including military land vehicles, heavy machinery, fuel tanks, and other heavy assets in under 5 min (<1 minute to achieve wheels-up lift on Class 2 commercial vehicle)
- Provides multiple lifts with one battery charge

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State-of-the-art design provides instant, powerful lifting capabilities for superior readiness, utility, and security in crucial operations.

Rugged, Pneumatic Design for Quick, Powerful Lifts:
- Single-piston, pneumatic compressor fully inflates two 34-gal airbags in <5 minutes
- Two-bag lift system delivers 45,000 lb in total lift capacity (22,500 lb per bag)
- Made of durable Dyneema® UHMWPE fiber, the reusable airbags require only 3” of insertion space and provide 18” maximum vertical lift height when fully inflated

Streamlined, Portable & Economical:
- Full system comprised of four easy-to-assemble subsystems
- Lightweight kit fits into a single backpack for easy transport
- Low-cost, commercial 20/60 V battery for easy tool interchangeability
- Only one person required for system operation

Quick-Deploy Capabilities:
- Quick-connect pneumatic hoses and valves for easy assembly
- Rapid-deploy design enables quicker recovery missions to mitigate loss and extended exposure of assets to potential threats
- Assists personnel with in-field repairs and servicing of vehicles during time-critical missions
- Suitable for use in rugged, evolving tactical environments

Applications:
The Guardian HLS heavy-lift system is uniquely equipped to enhance personnel safety and mission efficacy for both military and public safety segments:

**Military**
- Emergency response
- Combat search and rescue
- Field logistics and maintenance assist
- Common uses: Ground vehicle and asset recovery, structure collapse and heavy rescue extrication, and personnel extraction

**Public Safety**
- Emergency response
- Search and rescue
- Field-vehicle recovery and maintenance assist
- Common uses: Vehicular accidents, structural collapse and heavy rescue extraction, trench or confined space reinforcement, and people extraction
Guardian® HLS Technical Specifications

**Subsystems**

- Single-piston compressor and removable COTS battery
- Pneumatic hose assembly - Direction control valve, fill valve, and 3 quick-connect hoses
- Heavy-lift airbags (2 per kit) - Made of Dyneema® multi-layered, Ultra-High Molecular Weight Polyethylene (UHMWPE) fiber
- Shipping case

**Dimensions & Weight**

- Heavy-lift airbags: 34 gal each; ~3 lb per bag
- Compressor with battery: ~14 lb
- Packed volume of Guardian HLS system: ~700 in³
- Total system weight: ~30 lb

**Payload Capacity**

- Single bag: ~25,000 lb lift
- Two bags: ~45,000 lb lift
- Lift height: 18 in
- Lift time: <5 mins to fully inflate bags
  (<1 minute to achieve wheels-up lift on Class 2 commercial vehicle)

**System Operating Pressure**

- 60 psi

**Power Requirements**

- COTS 20/60 V battery (compatible with most modern DeWalt tools for increased mission flexibility)
- One battery equivalent to three compressed-air cylinders
- Battery life indicator located on output-end of the compressor
See how Sarcos Defense elevates the operational excellence of our military workforce.

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