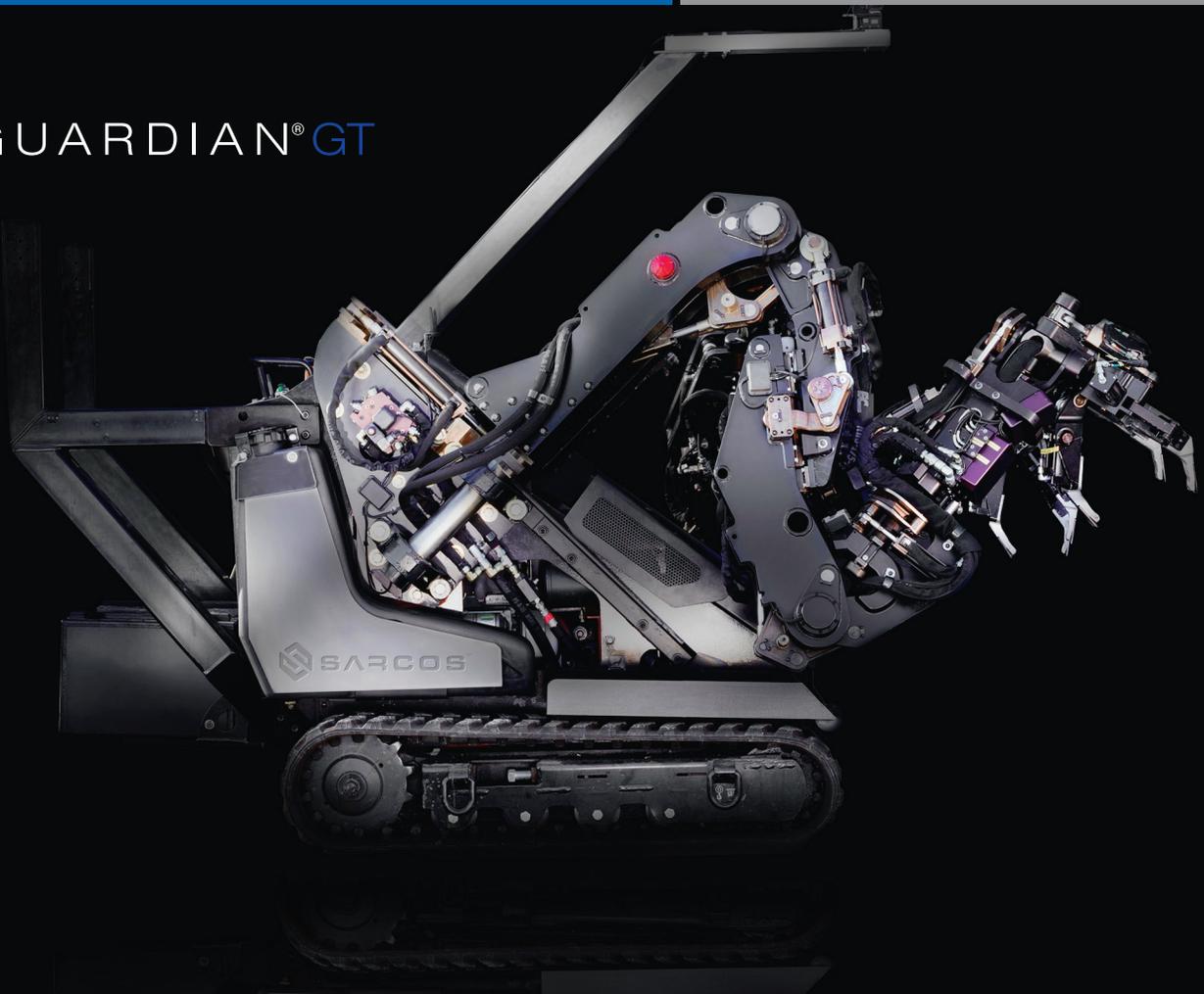




ROBOTICS

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

## GUARDIAN® GT



### **Getting your arms around the toughest tasks™**

The Guardian® GT robot is a teleoperated, force-multiplying robotic system that amplifies human capabilities through one or two highly dexterous arms mounted on a mobile base.

The Guardian GT system's modular design allows customers to select the best configuration to complete the task at hand. The mobile robot is equipped with seven-foot-long robotic arms that replicate the operator's motions with unrivaled precision and fluidity, while also augmenting human strength and stamina to assist in lifting heavy objects.

**Combining human intelligence and dexterity with robotic strength and mobility, the Guardian GT robot is an ideal solution to enhance productivity and worker safety – even in the most complex, dangerous, and unstructured environments.**

## Robotic capability meets human intelligence

- › Modular design configurations enable a wide variety of in-field applications; operator can safely teleoperate the mobile robot from a controller station or can also ride on the back to directly navigate and control the robot
- › High-fidelity force feedback enhances the operator's control of robotic arms
- › System can lift payloads of up to 1,000 pounds<sup>1</sup>, allowing operator to lift, move and position heavy items
- › Seven-foot robotic arms allow operator to reach objects up to 7 feet<sup>2</sup> in front of the base and to the side

## Intuitive design with enhanced dexterity

- › Designed for kinematic equivalency to human operator, the robotic eyes, shoulder, wrist, and end-effectors are placed at the same ratio as the human equivalent, ensuring the most intuitive remote control experience for the operator
- › Modelled after human movement, the robotic arms each have 7 degrees of freedom (DOFs) from shoulder to wrist, to mimic the operator's arm movement
- › General purpose 3-DOF end-effectors enable the operator to use off-the-shelf tools and accomplish delicate tasks (e.g., pushing buttons, operating valves, and flipping switches) while still being able to handle heavy workpieces

- › For remote teleoperation control scenarios, built-in stereo cameras combined with operator headgear (featuring stereo vision and head-movement trackers) provide the operator with situational awareness and immersive control of the mobile robot
- › Instinctive controls require minimal operator training

## Unparalleled safety & task efficiency

- › System's heavy-lift capabilities, when combined with either the local or remote controller, enable operators to safely complete critical tasks while avoiding lift-related worker injuries, and in the case of remote operation, exposure to environments that are harmful to humans
- › Arms are designed to lock in their current position in the event of power loss for increased safety and workplace protection

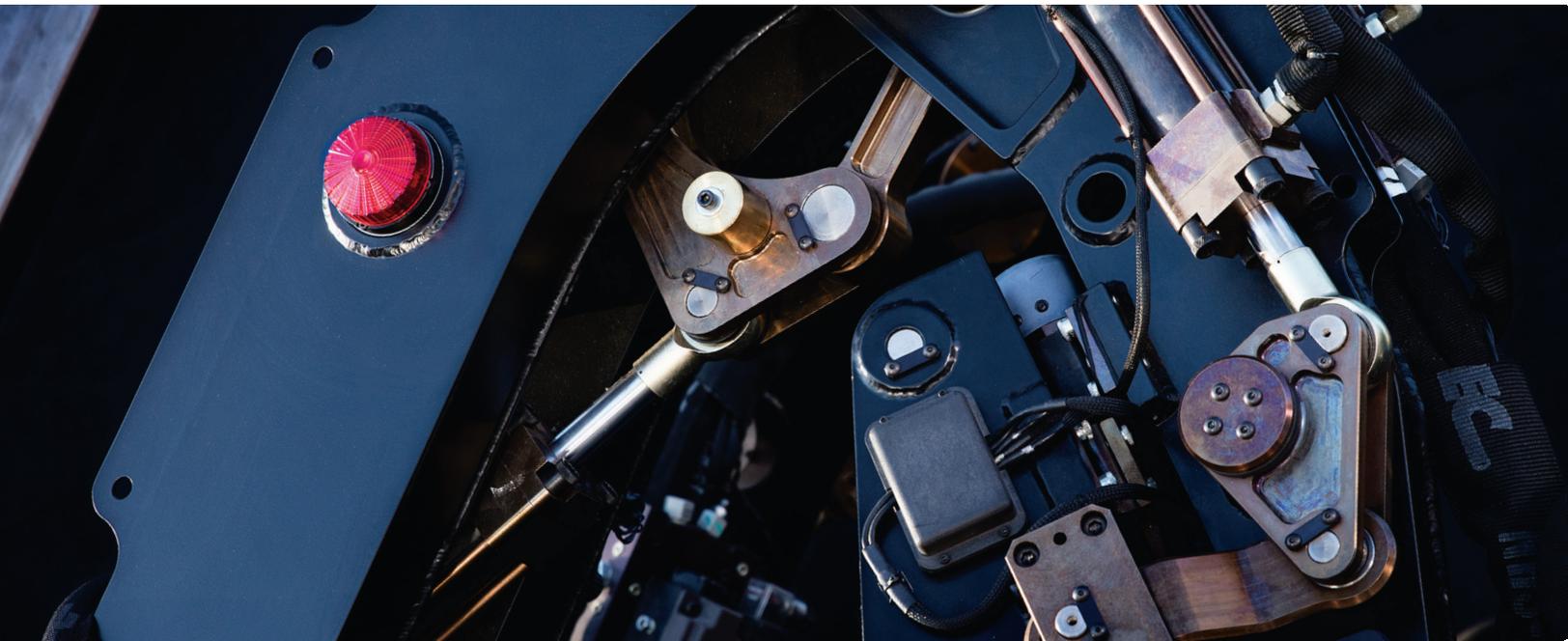
**Through basic labor-saving tasks, like heavy lifting to more intricate processes like welding and joining, the Guardian GT robot capabilities provide extensive benefits in a broad range of industries.**

### Industrial

- › Construction
- › Manufacturing
- › Power generation
- › Shipbuilding

### Government

- › Public safety
- › Disaster recovery
- › Military logistics



## Guardian® GT Technical Specifications

The Guardian GT system is a base-agnostic, single- or dual-armed, human-controlled robot mounted on a customer-specified mobile base.

### Mobile Robot

Robotic Arms	
Dimensions	- 84" / 2134 mm (L)
Weight	- Each arm: 750 lb (340 kg)
Lift Capacity	- Two-arm maximum: 1000 lb (454 kg) - One-arm maximum: 500 lb (227 kg) <sup>1</sup>
Workspace	- Reach and workspace are dependent on the type of base selected
Degrees of Freedom (DOFs)	- 7 per arm
End Effectors	- Permanent magnet-based end effector with controllable attractive force - Optional parallel jaw gripper with 2-DOF opposable thumb, comprising a 3 DOFs end effector - Custom end effectors can be designed for specific tasks
Power	- Hydraulically powered via onboard, self-contained, 3000 psi hydraulic power supply 10 HP (7.5 kW)
Customization Options	- Dual-arm and excavator variant - Single-arm variant

### Mobile Base

Customer-Specified	- System is base-agnostic and can support a variety of off-the-shelf platforms (e.g., track, wheeled, elevated platform, diesel, gas, propane, or electric)
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### System as Pictured (Track Base Model)

Mobile Base	- Modified Ditch Witch SK850 track base
Dimensions	- 86" (D) × 42" (W) × 57" (H) - 2190 mm (D) × 1065 mm (W) × 1450 mm (H)
Weight	- Total system weight (two arms): 4600 lb (2086 kg) - Mobile base: 3100 lb (1406 kg)
Workspace	- 84" (2133 mm) reach (forward and lateral) per arm
Engine	- Yanmar® 3TNV88C diesel engine (3 cylinders/37 HP)
Operating Time	- >7 hours on a full tank
Speed <sup>2</sup>	- Travels up to 4 mph

### Controller Station<sup>3</sup>

Dimensions	- 96" (H) × 72" (W) × 48" (D) - 2438 mm × 1829 mm × 1219 mm
Operator Controller	- Operator controls the robotic arm motions via force-reflective controls
Controller-to-Robot Communication	- Ethernet

<sup>1</sup> One-arm maximum lift of 500 lb when arms are proximal to mobile robot base; lift capacity decreases as arms extend away from base (e.g., 200 lb/91 kg throughout entire workspace).

<sup>2</sup> System speed is dictated by the mobile base selected; the 4mph speed applies only to the Ditch Witch track base; robot speed can be enhanced by selecting a different type of base.

<sup>3</sup> One-person controller configuration; please inquire if you have secondary controller or fiber optic communication needs.



See how Sarcos Robotics  
can transform your workplace  
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