

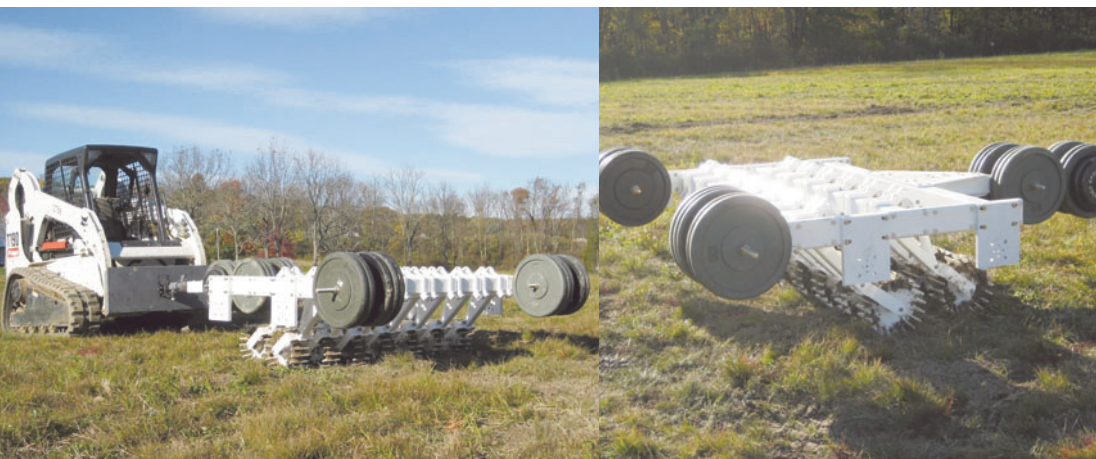
ROLLERS | SCAMP ROLLER

SCAMP Roller from Humanistic Robotics, Inc | USA

GENERAL DESCRIPTION

The *SCAMP mine-clearance roller* is produced by Humanistic Robotics, Inc, a US-based manufacturer of humanitarian and military demining equipment. The SCAMP is a highly customisable roller attachment that can be easily adapted to a variety of remote-controlled or manned prime-mover vehicles. The rollers are designed to effectively deliver force to anti-personnel mine fuses while venting blast loads and preventing mud accumulation or bow-wave effects in soft soil.

The SCAMP utilises a proprietary pneumatic suspension system to independently suspend individual rollers, allowing the system to deliver constant ground force over undulating terrain. The SCAMP's suspension also allows the user to customise the ground pressure by varying the supplemental ballast load carried by the system. Using locally-sourced ballast materials (steel plate, sand, or concrete) minimises transportation costs, reduces logistical footprint, and allows the operator to tailor the ground force for different soil conditions and mine types.



THE SCAMP ROLLER

CLEARANCE METHODOLOGY

The SCAMP roller can be pushed in front of or towed behind a manned or remote-controlled prime mover vehicle. The SCAMP's frame is modular, allowing the operator to tailor the roller width to match the prime mover vehicle or clearance requirements. The modular design also allows individual components to be replaced easily and rapidly, minimising machine down-time and maintenance costs. The roller frame contains an integral towing module which allows the system to be transported at road speed easily between clearance locations using commonly-available trucks or 4x4 vehicles. The roller can be employed in a primary clearance and risk reduction capacity, as well as for technical survey and quality control functions.

MACHINES IN USE TO DATE

Several rollers have been built and tested, and HRI is working on accreditation so that field trials can be completed.

DIMENSIONAL DATA

1. Length without attachment	
2. Length total	3,620 mm
3. Width without attachment	
4. Width total	2,700 mm
5. Clearing Working width	1,825 mm
6. Height Overall	1,230 mm
7. Mass of roller without ballast	335.6 kg
8. Mass of ballast, maximum	1,980 kg
9. Mass of roller with ballast, maximum	2,315.6 kg

OPERATIONAL DATA

10. Wheels Tracks (description)	
11. Ground force	Up to 1,150 kg / metre of roller width, dependent on supplemental ballast load. Suggested ballast load was determined by HRI through iterative testing of soil type, soil compaction and mine type
12. Hill climbing ability (in degrees)	Limited by prime mover traction
13. Number of Chains Chisels Tools	
14. Beat pattern (hits per m ²) at different operating speeds	
15. Length of Chains Tools	
16. Diameter of flail drum	
17. Rotation Speed	
18. Clearance Working depth in varying terrain	
19. Working Speed (m ² /h)	550 m ² /h, in terrain with light to medium vegetation, or after vegetation has been cleared
> Light Soil Medium Vegetation	
> Medium Soil Medium Vegetation	
> Heavy Soil Dense Vegetation	
20. Control of Clearance Working depth	
21. Additional attachable working tools	
22. Armour	
23. Remote controlled	
> greatest distance	
24. Transportation	
> short distances	
> long distances	
> sea transport	
> air transport	

SYSTEM STATUS AND DEPLOYMENT

Two prototypes of the SCAMP roller have been built by HRI and tested internally and with the US Army. HRI is currently in the process of organising accreditation trials for private sector operations

