



GAINWELL
ENGINEERING

SCOOP GSU488 L



Operating Specifications

Payload Capacity	9.1 tonnes	10 tons
Operating Height	864 mm (and above)	34 in (and above)
Power Type	Battery	

Dimensions

Overall Length (with bucket)	8760 mm	28 ft 9 in
Overall Width (at bucket)	2920 mm	9 ft 7 in

With payload capacities ranging from 4.5 tonnes

SU488 L Features

Flexible

Gainwell Scoops come in a variety of sizes and shapes, with both diesel and battery drive options and a number of attachments to meet any need. With a system allowing for speedy conversion between tools, a single machine can meet multiple needs.

Productive

With payload capacities ranging from 4.5 tonnes (5.0tons) to 22.7 tonnes (25 tons), these hard-working machines can keep up with strict productivity demands no matter what needs to be hauled.

Durable

A heavy-duty center section provides superior stability in tough conditions through ball-bearing oscillation. A robust pivot section eliminates the problems of three-point-hitch oscillation. High-strength, low-alloy steel bearing attachment faces and high-quality welds further increase reliability.

Safety-Focused

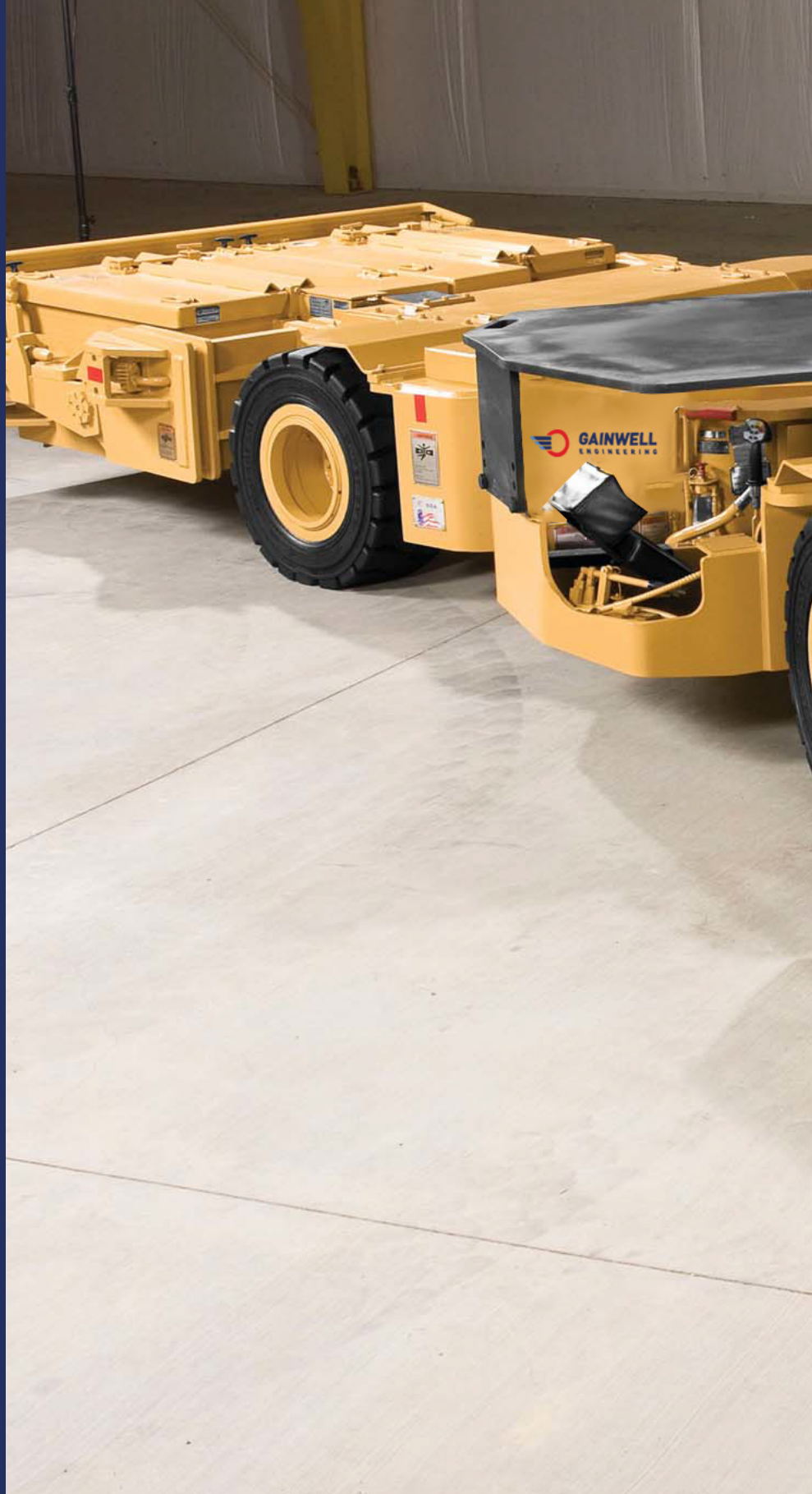
The operator's compartment is designed with safety in mind, both for the operator and workers around the machine. Good visibility and ergonomic controls keep the operator alert and aware of surroundings while a durable frame and cover protect the operator from hazardous conditions.

Environmentally Responsible

Gainwell battery-powered scoops do not burden the mine's ventilation with emissions or heat. Due to infinitely variable power control, they are the ideal vehicle for working an area with limited ventilation.

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With over 40 years' experience and over 6,500 battery-powered units produced, the Gainwell Scoop is obvious choice for a low-maintenance, high productivity utility vehicle. These battery-powered mining machines are setting the pace in efficient and reliable underground utility vehicles. The SU488 L is one of the strongest and most rugged low-profile scoop ever built.

Control System

Controlled Productivity



We have led the way in increasing the productivity of battery powered mining equipment. Our control system eliminates commutating coils and capacitor banks and is able to provide a microprocessor-based motor controller. Using the dash-mounted diagnostic display and the handheld calibrator/diagnostic unit, difficulties can be overcome in short order.



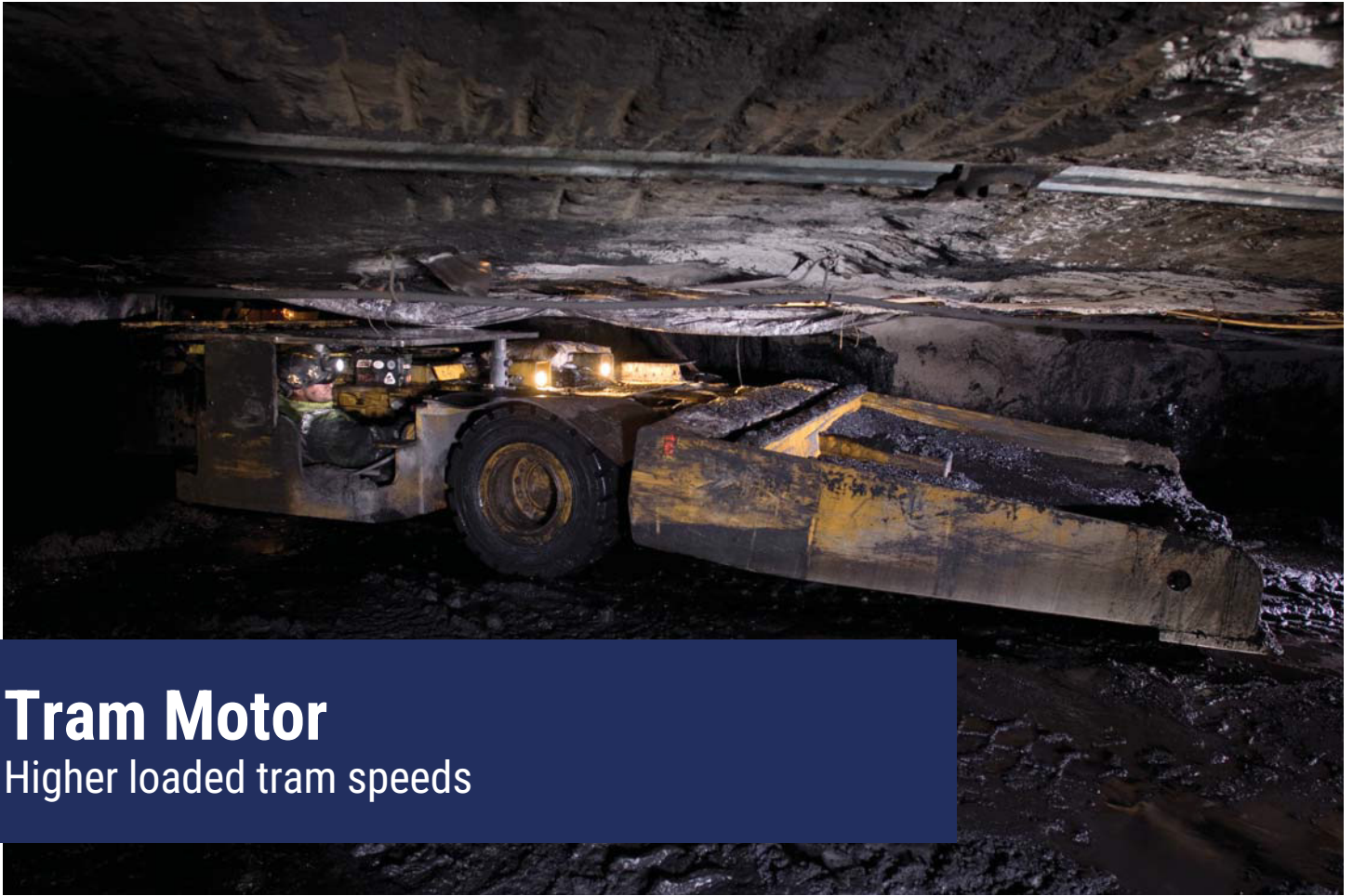


The Gainwell HiPAC 10 is a DC to AC variable-frequency inverter control that drives high-performance AC electronic motors, which have a superior speed-torque characteristics. It is up to 14% more efficient than traditional DC motors. This means higher loaded tram speeds, more responsive hydraulic functions and more work per battery charge.



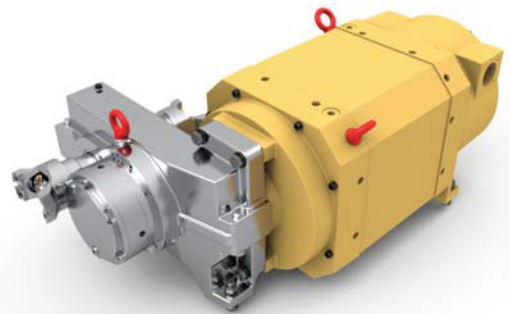
Drive Technology

High-performance AC power for more efficiency



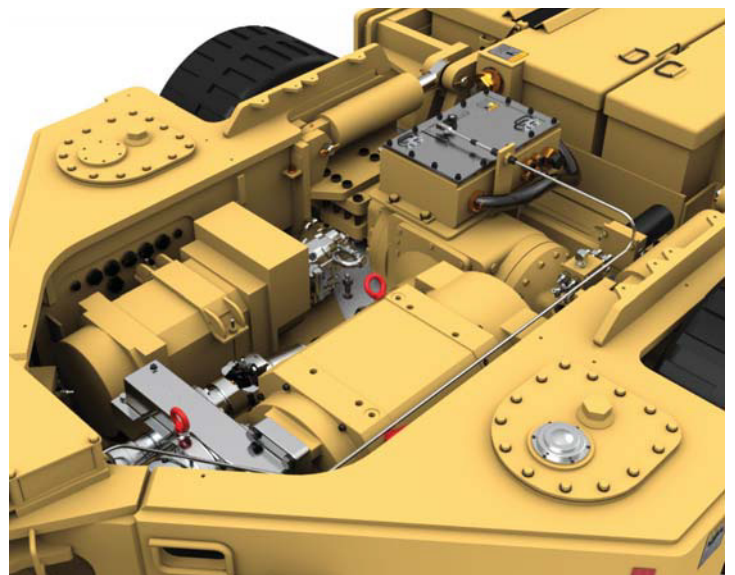
Tram Motor

Higher loaded tram speeds



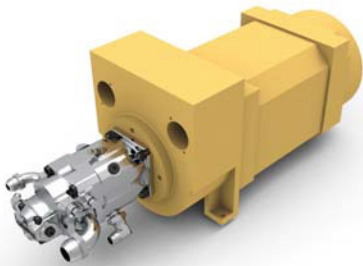
The scoop is equipped with a 37.3 kW (50 hp), 110V DC, class H insulation series wound traction motor.

An optional 74.6 kW (100 hp) AC tram motor is available with the HiPAC 10 VFD Control System.



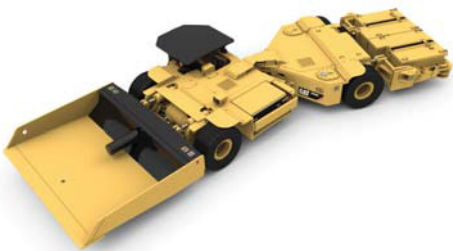
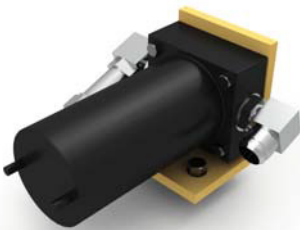
Pump Motor

Explosion proof with 11.9 kW/16 hp



All Gainwell utility scoops feature large hydraulic fluid reservoirs for maximum cooling capacity. Each reservoir is equipped for easy fluid-level monitoring. The machines are provided with 10-micron return line filtration and a magnetic particle sump strainer. For long life and dependability, the main implement pumps are helical gear, fixed displacement.

Dash-mounted gauges provide the operator with continuous monitoring of the status of the hydraulic system. An optional 35 kW (47 hp) AC pump motor with HIPAC 10 VFD Control System is available.



Drive Train

Unparalleled speed and maximum reliability



With options and features like full inboard planetary axles and bulletproof outboard and hub-end planetary axles, the Gainwell scoop is the right combination for any application. For unparalleled speed and maximum reliability, the SU488 L offers dual 37.3 kW (50 hp) tram motors.



Axle Diff-Lock

4-wheel drive on-demand



Four-wheel drive for when conditions get tough, planetary axles with wet disc service brakes, helical, parallel gearbox, spring applied, hydraulically-released parking brakes and other features all combine to provide rock climbing gradeability.

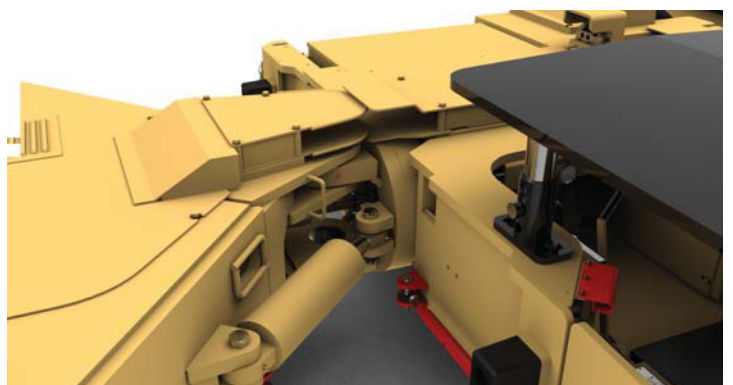
With the ability to engage a battery from below grade, and to vary the ground clearance of the battery in undulating conditions, the Gainwell scoop is able to thrive in varying mining environments.

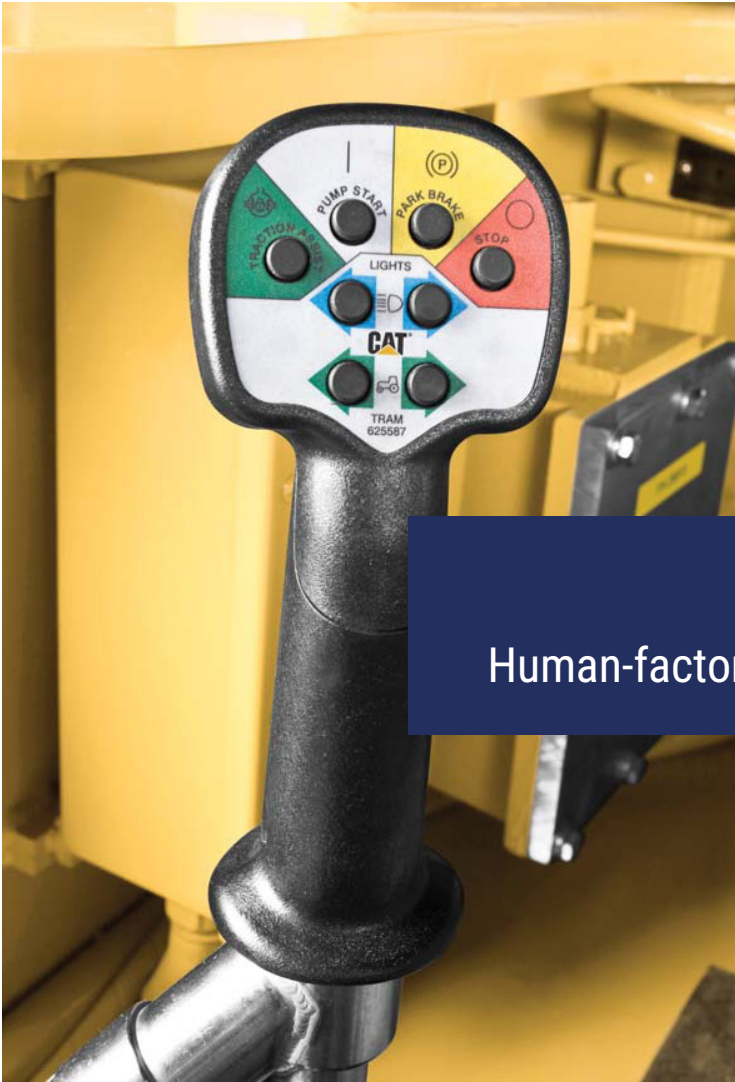
Center Section

Heavy-duty construction for maximum reliability



To provide superior stability in tough conditions, the scoop offers ball bearing oscillation. The problems associated with three-point-hitch style oscillation are eliminated with the robust design of the pivot section. High-strength, low-alloy steel bearing attachment faces and quality ANSI/AWS welding help provide the reliability that our customers demand. The articulation joint features hardened spherical bushings to ensure even load distribution to the high-strength, hardened articulation pins.





Operator Comfort

Human-factor engineered operator's compartment



For long-shift productivity, operator comfort is paramount for maintaining a safe working environment. At Gainwell ergonomics is not just another marketing buzzword. Controls are placed in a logical, easy-to-reach position and are easily operated from the fully padded, adjustable seat.

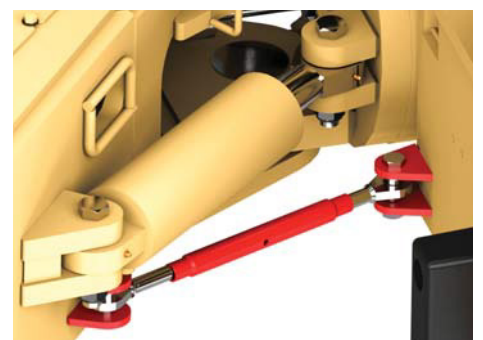
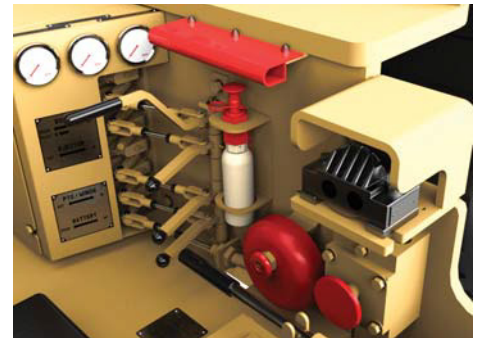


Safety

Designed with safety as top priority

All Gainwell battery-powered face haulers and scoops are designed with safety and productivity as number one priorities. The scoop safety features include:

- Panic strips in the operator's compartment
- Emergency stop buttons
- Fire suppression (automatic or manual activation) on both sides of the machine
- Steering lockout
- Proximity detection (on request)
- Spring applied, hydraulic release brakes
- Two key start functions
- Warning gongs
- Start up audible alarms (optional)
- Canopy over operator's compartment



Weights

Scoop Utility Empty Weights

Less Battery	12 700 kg	28,000 lb
With 64-SS55-21 Battery	16 220 kg	35,750 lb
With 64-SS85-21 Battery	19 277 kg	42,500 lb

Speed

Tram Speed	8 km/h	5 mph
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Lift and Carry Capacity

9.1 tonnes (10 tons) at 1220 mm (48 in) from bucket mounting pin

Drive Train

Tram Motor	One proprietary design, mine traction, direct current, gear motor rated at 37 kW/50 hp (1 hour) at 1,540 rpm and 110 Volts; MSHA totally enclosed explosion proof; nonventilated cooling; foot mounted
Reducer	A foot mounted 3.33:1 ratio gearbox
Drive Lines	Heavy duty off-highway, 7C type driveshafts with slip joints
Axles	Heavy duty axles. Features outboard planetary, SAHR brakes, brake cooling and optional Diff-lock

•Alternate axles will be considered upon request

Brakes

Service and Emergency/Park	Spring applied hydraulic release SAHR
	4-wheel wet disc
	Left pedal activated
	Controlled by reverse modulating valve

Fire Suppression

Four point, 9 kg (20 lb), multi-purpose, ABC dry chemical fire suppression system manually actuated from operator's compartment and remote location.

Frame

Heavy duty with bends utilized where applicable to reduce the number of indeterminate stresses introduced by welding; constructed of ASTM 572-GR50 steel with T-1 steel at high stress wear areas.

Center Section

Heavy duty ball bearing with unlimited oscillation; internal grease seals to prevent contamination of the ball bearings, and pivot points designed to distribute loads using self-aligning, one piece heavy duty radial bearings.

Hydraulics

Pump Motor	Mine duty, laminated frame, direct current motor rated at 12 kW/16 hp (1 hour); 110 Volts DC; MSHA totally enclosed explosion proof; non-ventilated cooling; and foot mounted.
Pump	Fixed displacement, helical gear tantum pumps rated at 91 total L/min (24 total gal/min) at 1,600 rpm. Pump is directly mounted to the pump motor housing.
Reservoir	132 L (35 gal) capacity with magnetic particle sump strainer and 10 micron return line filter with by-pass. A dipstick is provided in the top of the oil tank for oil level monitoring.
Reservoir Fill System	Fill cap assembly in top of reservoir tank.
Valve Bank	Five section, parallel (flow through) type with 15.5 MPa (2,250 psi) internal relief and 11.7 MPa (1,700 psi) steering relief. Valve bank is rated at 151 L/min (40 gal/min)
Hydraulic PTO	Two (2) quick coupler connections, 8.27 Mpa (1200 psi) maximum recommended operating pressure.
Steering Cylinder	Two (2) 127 mm (5 in) bore, double acting cylinders with forged rods and self-aligning bearings.
Lift Cylinder	Two (2) 152 mm (6 in) bore, double acting cylinders with forged rods and self-aligning bushings.
Hydraulic Hose and Fittings	JIC fittings with high pressure hosing; MSHA 2G flame resistant approved.

Operator's Compartment

Extended Operator's Deck

Control Station Which Houses the Master Switch for Park, Forward and reverse; Light Switch for Front and rear lights; Pump motor start button and automatic park brake release

Right Foot Accelerator Pedal

Left Foot Brake Pedal

Tape Strip Panic Switch that De-energizes Electrical System and applies automatic brake

Warning Gong

Manual Circuit Breaker Lever Re-set Handle

Valve Bank Hydraulic

Functions:	Steering
	Bucket
	Bucket Eject
	Winch/Power Take Off
	Battery Changer

System Pressure Gauge

Accumulator Pressure Gauge

Park Brake Release Pressure Gauge

Electrical Controls

Model BUC2000, microprocessor controlled, IGBT, contactorless, 128V DC, 1200 amp traction motor controller, with infinitely variable, stepless, machine speed control, equipped with on-board dashboard display for machine information of battery capacity, battery voltage, motor currents, elapsed time hour meter, and troubleshooting diagnostics information.

Microprocessor controlled, IGBT, contactorless, 128V DC, 350 amp, pump motor controller, limits starting current, and provides LED based diagnostics

Mine duty, 600 amp frame circuit breaker, with UVR (under voltage release) trip unit.

Manuals

Two Parts Manuals

Two Operation and Preventive Maintenance Manuals

Two Electrical Troubleshooting Guides

Two Battery Maintenance Manuals

Two Battery Maintenance Charts

One LinkOne CD which includes all above manuals in electronic format

Operator's Compartment Option

533 mm (21 in) deck extension to provide better visibility in the lower seams Diff-Lock-hydraulically activated differential lock that allows all four wheels to have equal torque during difficult floor conditions. The Diff-Lock is activated by a floor mounted, foot operated push button.

Tire/Wheel Option

28x15-15 Tires- Customer specified tire brand and fill type.

32x15-15 Tires- Customer specified tire brand and fill type.

35x15-15 Tires- Customer specified tire brand and fill type.

Operator Control Options

Left hand control stick that incorporates the most common operator functions.

Ergonomically designed control stick for one-hand control of pump motor, park brake, travel direction, traction assist, stop/shutdown and headlight controls.

Tapeswitch stop switches located on both sides of operator.

Manual Disconnect Switch.

Battery Plug – Single Connector Option

J&R 2000, 5-pole, Brass with Captive Wrench – brass plug with a captive wrench to install or remove the battery plugs.

Battery plug is rated at 600 amps.

Other connector options available upon request.

Lighting System Option

Ocenco, Halogen, 12V DC, 50 watt – two front headlights with protective guard, and two rear headlights with protective guard.

MCI 120V

MCI 12V

Center Section Cable Location Option

All cables over the top of center section. Cables are protected with additional guarding and covers. This will add 76 mm (3 in) to overall frame height.

Auxiliary Components

Battery Change Cables

Machine Battery

Battery Tray

Battery with Platisol Coated Tray (Single Connector)

Battery Receptacle Kit

Battery Filling System

Battery Charger Options

Single Output for One Battery

Dual Output for Two Batteries

Battery Charger Accessories

Heavy Duty Charger Case Sled consisting of heavy duty, protection frame work and equipped with lifting mechanisms designed to be engaged by the optional QDS Lift System.

Other Options

Schroder Test Mate

PA Approval Kit

Park Brake Pressure Switch

Center Section Lock Bar

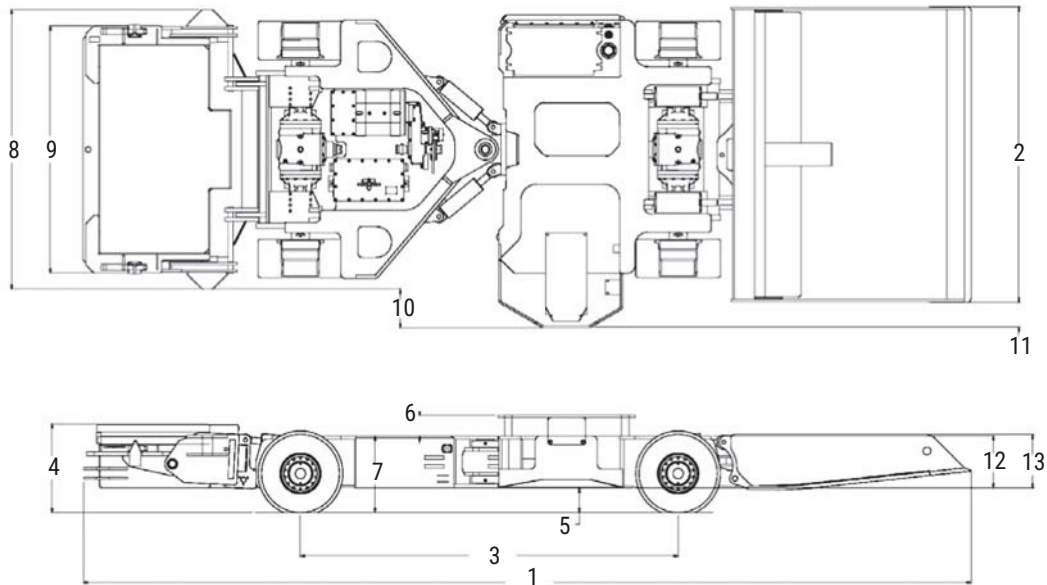
Venturi Jet Fill

Traction Motor Over Speed Protection

BUC 2000 Hand Held Calibrator
(Control Adjustments and Troubleshooting)

Dimensions

All dimensions are approximate.



1 Overall Length			
With Bucket		8760 mm	28 ft 9 in
2 Overall Width			
At Bucket		2920 mm	9 ft 7 in
At 533 mm (21 in) Extended Deck		3175 mm	10 ft 5 in
3 Wheelbase		3710 mm	12 ft 2 in
4 Battery Height from Ground with 64-SS55-21 Battery	28×15-15 Tires	710 mm	2 ft 4 in
	32×15-15 Tires	760 mm	2 ft 6 in
Battery Height from Ground with 64-SS85-21 Battery	32×15-15 Tires	860 mm	2 ft 10 in
	35×15-15 Tires	910 mm	3 ft 0 in
5 Ground Clearance (No Axle Spacers)	28×15-15 Tires	200 mm	8 in
	32×15-15 Tires	240 mm	9.5 in
	35×15-15 Tires	280 mm	11 in
6 Minimum Canopy Height	28×15-15 Tires	1120 mm	44 in
	32×15-15 Tires	1155 mm	45.5 in
	35×15-15 Tires	1190 mm	47 in
7 Main Frame Height	28×15-15 Tires	710 mm	28 in
	32×15-15 Tires	760 mm	30 in
	35×15-15 Tires	800 mm	31.5 in
8 Overall Width of Headlight Covers		2743 mm	9 ft
9 Overall Width of Battery		2438 mm	8 ft
10 Clearance of Headlight Cover to Outside of Operator Cab		381 mm	15 in
11 Clearance of Bucket to Outside of Operator Cab		254 mm	10 in
12 Bottom of Frame to Top of Frame		508 mm	1 ft 8 in
13 Bottom of Frame to Top of Bucket		533 mm	1 ft 9 in
Inside Turn Radius		3660 mm	12 ft 0 in
Outside Turn Radius		7315 mm	24 ft 0 in
Steering Articulation – Total		80°	80°

Detailed GA drawings available for specific dimensions and component locations.
 Shown with 32×15-15 Tires and 85-21 Batteries.

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