

# HGS (INDIA) LIMITED



## SPECIFICATION SHEET – HGH-500 Accelerated Weight Drop Unit with AGRIMAX



**HGH-500 AWD Unit Mounted on a JCB AGRIMAX**

### SYSTEM OVERVIEW & OPERATIONS:

The HGH-500 Accelerated Weight Drop (AWD) Unit (a.k.a. GPEG-500) from R T Clark Inc USA is a heavy-duty multi-function seismic energy source that has been robustly designed for applications across various fields of geology, geophysics, civil engineering, and more. HGH-500 system is a simple and time proven weight drop system modelled on the original HGH-50 and uses a 500kg mass to fall and generate upwards of ~81,646 Kgs (~180,000 Lbs) of Peak Force and ~11,455 Joules of Kinetic Energy.



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The HGH-500 hammer mass is picked up by a chain driven hydraulic motor. A specially modified JCB AGRI MAX is used to mount the HGH-500 Unit. The bucket of the AGRI MAX is removed, and the HGH-500 Unit is mounted in its place. The system uses the JCB hydraulics for operation, making it very versatile and cost effective. With the off-roading capabilities of the JCB, the AWD system can operate in all types of terrains.

As an adjustable and versatile system, the HGH-500 cycle time can be easily adjusted by the operator from 3 seconds to 6 seconds, to allow for capturing the most in the least amount of time. The unit is built for 8 hours continuous operation and thousands of hits daily.

The HGH-500 is a uniquely efficient and high-quality system, that is affordable to the industry when performing one job or 100 jobs. The HGH-500 offers high energy, durability, quick installation, low maintenance and tremendous versatility, all at an attractive price point.

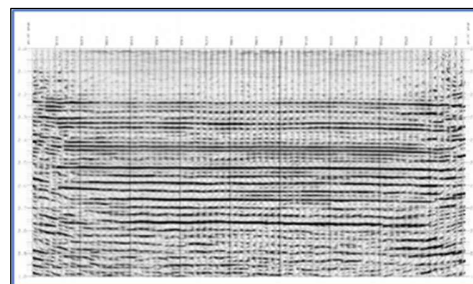
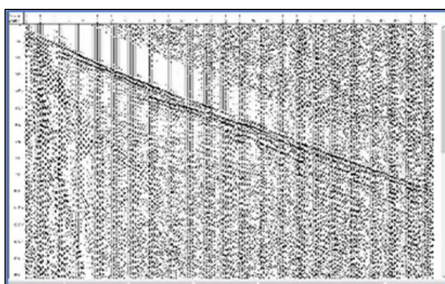
**OUR DIFFERENTIATORS:**

- ✓ Heavy Duty Seismic Energy Source
- ✓ Adjustable Cycle Rate
- ✓ > ~81,646 Kgs (~180,000 lbs) Peak Force
- ✓ ~11,455 Joules of Impact Energy
- ✓ Hydraulic Operation
- ✓ Repeatable Energy Every Time
- ✓ Better Data Quality
- ✓ Enhanced Portability & Transportability



**EXAMPLE OF SEISMIC DATA ACQUISITION:**

Reference the 2 images below: First Breaks (left) & Processed Data (right), captured using a spread of 174 channels at 21M spacing, Total length: 3.65Km. The first target is Limestone which is at about 1,050M (530 milliseconds) and the basement is at 775 milliseconds. First Breaks show Shot Point 1 and register across the 3.62Km receiver line.



*Example: Seismic Data Acquisition – First Break (left) & Processed Data (right)  
Data Captured using the HGH-500 Unit*



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<b>TECHNICAL SPECIFICATIONS OF THE HGH-500 UNIT:</b>		
Operating Height	90 inches (228 cms)	
Mass Weight	499 kg	
Fall Distance	2.34 m	
Acceleration	Gravity (9.8 m/s)	
Kinetic Energy (KE)	11,455 joules (Theoretical value)	
Peak Force	~81,646 kgs (~180,000 lbs)	
Operating Weight	789 kgs (1,740 lbs)	
Impacts / Min.	Adjustable	
Min. Hydro Pressure	2,200 psi	
Min. Oil Flow Demand	8 GPM	
Hydro Coupler	1/2 inch	
Dimensions	60x18x18 inches (152x46x46 cms)	
<b>JCB AGRI MAX:</b>		
<ul style="list-style-type: none"> <li>✓ <b>Productivity &amp; Reliability:</b> High quality machine that offers Torque converter and JCB transmission deliver quick cycle time for enhanced productivity.</li> <li>✓ <b>Easy Operation:</b> smoother driving, less fatigue, and easier handling - even for first-time operators.</li> <li>✓ <b>Safety &amp; Comfort:</b> JCB AGRI MAX is enabled with added safety features and offers enhanced security &amp; operator comfort, Heat insulation shield and manifold cover reduce fire risk.</li> <li>✓ <b>Style &amp; Design:</b> Easily maneuvers in tight rural spaces, enhancing job flexibility and accessibility, isolation for better operator comfort.</li> <li>✓ <b>Key Features:</b> 36 kW (49 hp) Diesel engine with high torque and fuel efficiency ensures strong performance.</li> </ul>		
<b>TECHNICAL SPECIFICATIONS OF THE JCB AGRI MAX:</b>		
<b>Static Dimensions:</b>		
Overall Length	m (ft-in)	5.77 (18-11) (with AWD)
Wheelbase	m (ft-in)	2.08 (6-10)
Rear Overhang	m (ft-in)	1.48 (4-6)
Minimum Ground Clearance	m (ft-in)	0.33 (1-1)



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Overall Width	m (ft-in)	1.85 (6-1)	
Height to Top of cabin	m (ft-in)	2.66 (8-8)	
<b>Engine:</b>			
Engine	KOEL 4R810, naturally aspirated, 4 cylinder, water cooled, TREM-III A diesel engine.		
Displacement	3.2 litres		
Gross Power	36.09 kW (49 hp)		
Gross Torque	203 Nm (20.7kgm) @1300 rpm		
<b>Electric:</b>			
Battery System	100Ah 12Volts battery system with alternator and full road lighting		
<b>Hydraulics:</b>			
Pump Type	Tandem gear pump		
Pump Flow	63 L/min (max)		
Main Relief Valve	178 bar (2581 PSI)		
<b>Tyres:</b>			
Front Tyre	Front Tyre Pressure	8.25 x 16	80 psi
Rear Tyre	Rear Tyre Pressure	14.9 x 24	34 psi
<b>Service Capacity:</b>			
Fuel Tank	60 Litre		
Hydraulic Tank	60 Litre		
Engine Coolant	13.5 Litre		
Engine Oil	8.0 Litre		
Transmission	16 Litre		
Rear Axle	21 Litre		
<b>Transmission:</b>			
Transmission	The JCB SS 700 synchro shuttle transmission consists of a 4-speed, fully synchromesh, smooth-shift gearbox with an integral torque converter and an electrically operated reversing shuttle.		
Reversing Shuttle Switch	Easy to use, column-mounted electric reversing shuttle switch allows the operator to change the machine's direction while keeping their hands on the steering wheel, leading to faster cycle times.		
Pedals Layout	The pedals layout and conventional 4-pattern gear level with transmission switch add to the overall ease of operation		
Torque Convertor Stall Ratio	Torque convertor stall ratio 3.01:1		
<b>Axles:</b>			
Front Axle	2WD steer axle, centrally pivoted with oscillation angle of 16°		



Rear Axle	Drive axle rigidly mounted incorporates JCB Max-Track torque proportioning differential, driven by prop shaft from gear box
<b>Brakes:</b>	
Service	Hydraulically actuated, dual-line, self-adjusting (compensated), oil-immersed, multi-disc type on the rear axle, well protected from dirt, water, etc. Operated through independent pedals linked together for normal use.
Parking	Hand operated disc brakes on rear axle input disc.
<b>Steering:</b>	
Power Steering	Full power, front-wheel hydrostatic power steering with manual capability in the event of engine or hydraulic power failure.
Max. Steering Angle	$\pm 43^\circ$
<b>Canopy/Cabin</b>	
Front Glass	Front glass with wiper provided for operator comfort while driving
Safety	Excellent Operator Safety
Space & Comfort	Floormat and plenty of legroom minimize fatigue and provide extra comfort to operators
Seat, Controls & Steering Wheel	Adjustable operator seat combined with ergonomically positioned controls and soft touch steering wheel allow an operator to work uninterruptedly for long hours
Canopy	Canopy provides easy 'walk-through' access. Other features include seat belt, large convex rear-view mirror, front and rear horn, hazard warning system, lockable tool box.
Instrument Panel	Instrument panel is positioned on the right-hand side and includes engine speed, engine hours, fuel level, water temperature and mobile charger
Fault Warning System	Audible and visual fault warning system for alternator charging, coolant temperature, engine oil pressure, blocked air filter, transmission oil pressure and temperature and hand-break on
<b>ORDERING INFORMATION:</b>	
<b>Item Description</b>	<b>HGS Part No.</b>
HGH-500 AWD Unit with AGRIMAX	MK001480

Version 1.4



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