



THRIVENI Earthmovers Pvt. Ltd.

Beautiful Beginnings[®]



INTRODUCTION

Thriveni

Thriveni as an integrated mine developer and operator (MDO) with 50 MTPA capacity in India, +3000 well trained professionals, mining operations in Iron-ore, Bauxite, Barite, Copper and Coal.

Over the span of 25 years, Thriveni has developed capabilities to operate in complex mining related projects across India. It has replicated its success overseas in Indonesia and Mozambique.

At Thriveni we believe that we are setting new benchmarks in sustainable mining and encompassing inclusive growth.



We excel by focusing on three strategic areas:

Performance through Scientific methods... Simulator based training, modern and detailed exploration, scientific mining plan, efficient use of mining equipment, experienced human resource, and product quality control.

Planet of Sustainable mining... efficient use of area, minimizing waste, highest standards of safety, modern and scientific environment management, best practices in community relations management to ensure community's goodwill and social license to operate, and organized information system.



People who Make a difference ... skill training, industrial security institution, healthcare facilities, diagnostics lab with most modern equipment and well trained personnel, Ananda Ashram for old age persons, Thriveni school, and providing infrastructure needs of neighbouring villages.



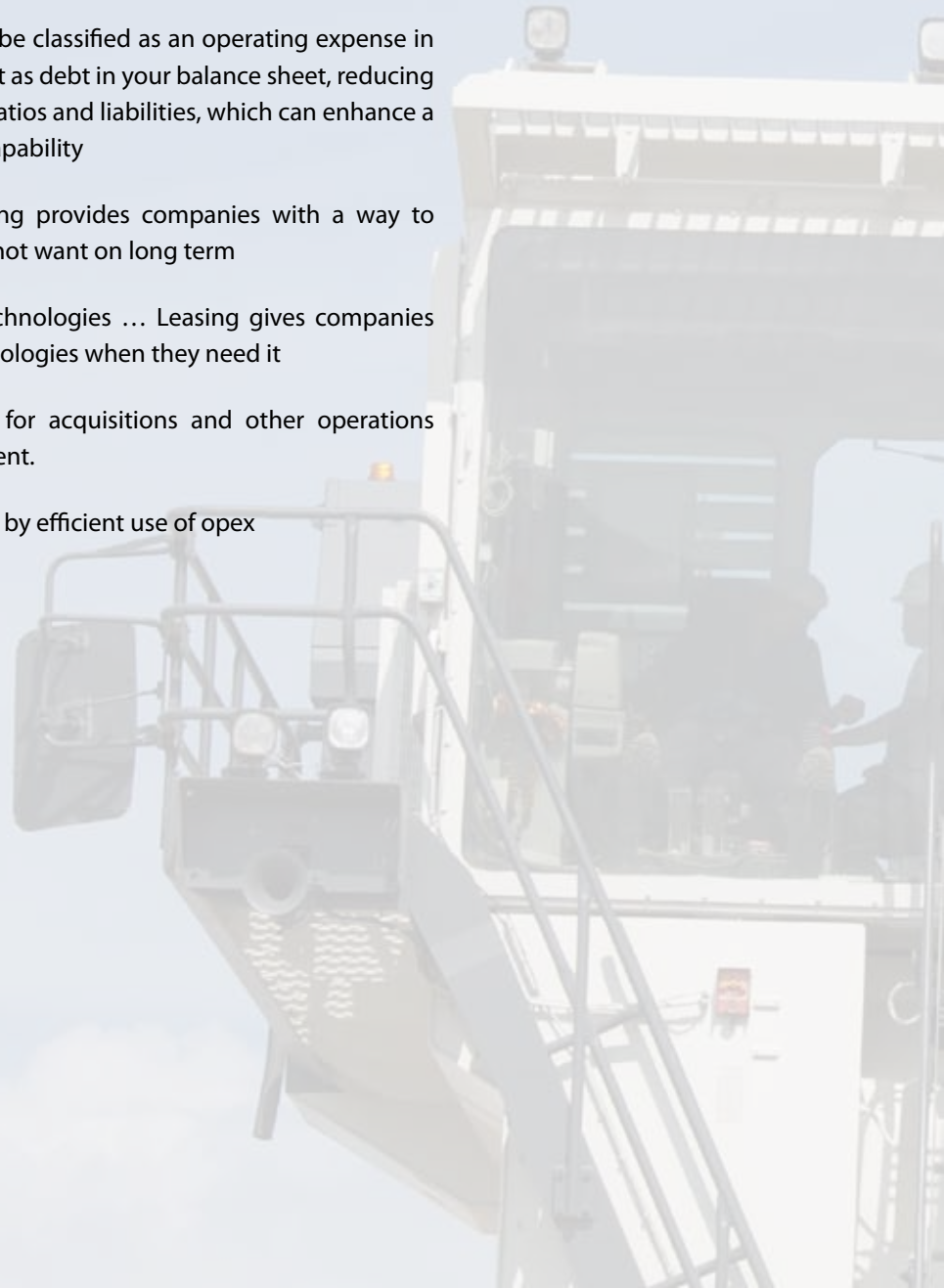
Operational Lease Solutions

Procuring mining equipment is often accompanied with the heavy burden of financing. After the tedious work of prospecting has paid off, and a valuable opportunity is present, there is often not enough cash on hand to support the setup costs of the project. Compounding with this problem is the fact that, securing a loan is becoming more difficult as banks around the world have tighten their lending standards.

Whether you need a front end loader, hydraulic excavator or electric rope shovel, electric drill machines, or the fleet of off-highway dump trucks, Thriveni will take the hassle out by providing suitable and flexible operating lease solution. Thriveni's team has the expertise and experience to provide you with the right operating lease on attractive terms and conditions.

Operational Lease Solutions

- ①. Capex to opex ... Leasing can be classified as an operating expense in your income statement and not as debt in your balance sheet, reducing the impact on debt-to-equity ratios and liabilities, which can enhance a company's future borrowing capability
- ②. Flexible deployment ... Leasing provides companies with a way to manage equipment they may not want on long term
- ③. Rapid scaling up to newer technologies ... Leasing gives companies financial access to newer technologies when they need it
- ④. Efficient use of surplus fund for acquisitions and other operations instead of locking it in equipment.
- ⑤. Manage and minimise taxes ... by efficient use of opex



Optimum Utilisation and Maintenance of HEMM

The utilization of machineries in mining industry over the years has remained the major area of concern. The optimum utilization of capital resources, the key to significantly enhanced productivity should be made.

One of the major reasons for low productivity, low availability and low capacity utilization of HEMM is improper maintenance system. The maintenance cost accounts for 60% of total equipment operating cost and sometimes 30-35 % of the total production cost. World over industry is moving towards condition based monitoring using intelligent interpretation of data obtained from machines. Internet of Things (IoT) is changing the way asset life cycle is managed.

The golden trinity of maximum availability, minimum maintenance cost and optimum utilization of equipment and machines are the most wanted objectives of any open cast mine. These can only be achieved by efficient equipment management system.

Thriveni has consistently worked towards developing these capabilities and today we can claim the trinity of availability, reliability, and low maintenance cost is ingrained in the DNA of the company.

We have built a strong technological base for maintenance of HEMM, created state-of-the-art infrastructure, computerized maintenance management system, spare parts management system, and workshop support to maintain highly sophisticated and capital intensive HEMM.

Further we have two decades of experience in methodical and planned utilization of HEMM with particular specialization in fragmentation of rocks, haul-road, dump-yard, illumination, formation of benches and faces etc. which assures our clients a lowest cost per ton and in turn maximizes profit.



Remanufacturing Towards a More Sustainable Future

Team Thriveni believes that one way to contribute to sustainable development is to reuse, recondition, revamp and remanufacture as many equipment / machines as economically possible. We think that instead of dumping yellow metal in waste yards, we should reuse parts, and reuse the machines.

We also believe in bringing the reconditioned / revamped / remanufactured equipment to state-of-the-art technological advances so that users can benefit from latest technology at affordable price.



Workshop

Thriveni has built a state-of-the-art facility to facilitate remanufactured equipments and world class maintenance for mining equipment. Dumper Revamping, Tyre Press, Engine, powertrain components and hydraulic revamping and testing, wheel motors, DG alternator and other motors and the heat treated paint booth flow through the facility in a straight line with a view to avoid unnecessary handling, allowing employees to provide timely and efficient service.

A modern, lean manufacturing facility

Thriveni workshop facility is being constructed with 103 meters long, 30 meters wide and 22 meters height, for flexibility which hosts an EOT crane with 30 ton capacity which can travel the full length and width of the workshop. Work cells can be created to accommodate exacting work on the smallest components and the largest engines.

The workshop meets the highest environment and safety standards. We follow the best practices to prevent dust and dirt from contaminating engines or filters.



Workshop facilities

S.no	Description
1	Engine Receiving bay
2	Cleaning
3	Large engine assembly bay
4	Small engine assembly bays
5	Magna flux
6	Cylinder head disassembly
7	Parts cleaning and Storage
8	In-process storage for Assembling
9	Disassembly area for different Engine
10	Cylinder head Testing & assembly
11	Turbo rebuild & turbo platform assembly
12	Fluids & manifolds
13	Housings & valves
14	Fuel systems Testing & Assembling
15	Pistons, rods & liners



S.no	Description
16	Shop rest room
17	Finished engine & component storage
18	WIP Parts ware house
19	Hydraulic shop
20	Aisle
21	Tool room and Special Tool Storage
22	Hydraulic test room
23	Dynamo meter room
24	Dynamo meter water recovery equipment & air compressor
25	Component cleaning area
26	Cleaning room
27	Large engine assembly bay
28	In process component storage
29	Shipping / receiving area
30	Paint room

P & H 2100 Electric Rope Shovel

Electric Rope Shovels are built specifically for removing large amounts of material, namely overburden and ore. P&H 2100 BL Rope Shovels perform this operation with more efficiency and at a fraction of the cost per ton compared to other industry machines.



Description	Data
Group	ROPE SHOVEL
Make	P&H
Model	2100BL
Operating Weight	370 tons
Bucket Capacity	15 m3
Productivity	550-600 m3
Matching Dump Truck	100 MT to 180 MT
Equivalent Equipments	IZ-KARTEX EKG-15, TZ WK-12C, HEC 10m3,
Electrical	6.6 kV INPUT POWER



Liebherr R996

Liebherr's R996 Excavator provides more productivity at lower cost per ton. The mining excavator remains more than ever the reliable basis in your production. Perfectly suitable for 220 MT class trucks and above, the R 996 sets new standards to your mining operation

Higher Productivity: The R 996 backhoe attachment has been redesigned to achieve larger bucket capacity. Even under tough conditions Liebherr's R 996 high digging force allows easy bucket penetration and high bucket fill factors achieving high productivity.

Reliability: Slew system and undercarriage further improve the machine reliability and extend the component lifetime. The enhanced single-line lubrication system and the fuel and oil filtration system also enhance availability of the mining excavator

Safety and Environment: Railings and catwalks help to easily access all relevant machine areas. The 45° access stair helps entering the machine comfortably. In case of emergency stops the stair is automatically lowered. Liebherr also provides solutions for operations close to residential areas with machine specific sound attenuation packages. The approach is based on both removal of noise at the source and passive sound attenuation resulting in low machine noise emissions

Operator Cab: The R 996 B's spacious cab offers ideal working conditions and high crew comfort. The adjustable air suspension seat fits to individual needs. Best visibility over the whole working environment is provided by the enhanced position of the cab.



The hanging arch hose arrangement provides direct visibility over large areas of the upper carriage. Additionally, a camera system shows areas that can't be observed directly. The electronic machine controls assure the best operator performance throughout each shift. Furthermore, the ergonomic component access and long service intervals assist the service team to ensure more uptime.

Description	Data
Group	Hydraulic Excavator / Shovel
Make	Liebherr
Model	R996
Operating Weight	670 tons
Bucket Capacity	35 m ³
Productivity	1500 - 1700 m ³ ; 2200 m ³
Matching Dump Truck	240 MT
Equivalent Equipments	PC5600, EX5600, CAT6060
Engine Make & Model	2 X Cummins X K1800 E
Engine Rating	2240 kW @ 1800 rpm



Letourneau L2350 - World's biggest Front End Loader

The L-2350 wheel loader, with an operating capacity of 72,574 kg (160,000 lbs.), can center load haulage trucks with payload ratings ranging from 320 to 400+ tons. The most powerful and productive wheel loader in its class, the L-2350 is part of the Generation 1 wheel loader line,

Outstanding fuel efficiency – in some cases up to 45% less fuel consumption than comparably sized mechanical drive wheel loaders – is the result of the exclusive Letourneau Drive system.



Utilizing proven switched reluctance technology, the Letourneau Drive system allows power generation that is fully regenerative, resulting in very efficient wheel loader operation. During braking or retarding, electrical motors become generators and feed power back into the generator connected to the engine. The Letourneau Drive system allows for 100% capture and utilization of all braking energy during the loading cycle. Major components of the system include power electronics, motor/generator, control system, and gear train.



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Designed to

- ① Include the latest safety features that meet global requirements recognized by leading mining industry safety councils
- ② Achieve greater operating hours due to robust structural design and modular components
- ③ Provide ultimate fuel consumption levels due to the power regeneration capacity of the Drive technology

Designed for productivity

- ① SAE-rated buckets for providing full payload in accordance with SAE standards
- ② Integrated LINCOS II monitoring and control system for a simple, highly responsive, and semi-automated control interface
- ③ Integrated Joy SR Hybrid Drive system for providing power regeneration capability during loading cycle

Designed for reliability

- ① High-strength, low-alloy steel frame structures with excellent weld characteristics
- ② High-strength castings and forgings in key areas of fabricated structures to reduce stress and improve structural life
- ③ Integral, fixed front axle; rear, pivoting axle that oscillates 11 degrees
- ④ Independent power module mounting system cradled by a three-point isolation system
- ⑤ Ball-and-socket design featured in frame articulation, lift arm attachments, lower hoist cylinder support, and rear axle oscillation pivot points
- ⑥ Attachment system that absorbs and distributes multidirectional stresses significantly better than pin-and-clevis system
- ⑦ Continuous synthetic lubrication and recirculation filtration in planetary drives
- ⑧ Diesel electric drive constant RPM system to assure full hydraulic flow, providing longer engine life and improving fuel economy
- ⑨ Pressurized axle housings for maintaining an air-cooled, dust-free environment

Designed for easy maintenance

- ① Multiple maintenance-friendly access points to engine, radiator, KLENZ filtration system, hydraulic pumps and hoses, air compressor, Joy SR power conversion system, and traction motors
- ② Separated high- and low-voltage cabinets
- ③ LINCS II interactive offline tool for providing downloaded diagnostic information

Designed for operator comfort

- ① Superior weight distribution allows for machine stability when working on grade
- ② Seamless direction control/braking for reduced operator fatigue
- ③ Ergonomically designed joysticks
- ④ Two-door ingress and egress
- ⑤ Simplified dash layout
- ⑥ Easily visible and readable LCD screen
- ⑦ Insulated cab with air conditioning, heating, and sound dampening
- ⑧ Eleven-way adjustable air ride seat
- ⑨ Unmatched visibility
- ⑩ Pressurized and filtered cab air, featuring KLENZ air filtration system
- ⑪ 99.9% effective in removing air particles as small as 0.3 microns
- ⑫ Self-purging design for stretching filter life to 5,000 hours or more (15 times longer than conventional filtration systems)

Description	Data
Group	Front End Wheel Loader
Make	LeTourneau now Joy Global
Model	L2350
Operating Weight	267 tons
Bucket Capacity	40.52 m3
Productivity	1700 m3
Matching Dump Truck	290 MT to 400 MT
Equivalent Equipment	No Equivalent Loader is available in the world.
Engine Make & Model	MTU Engine
Engine Rating	2300HP

L1850

The Letourneau L-1850 wheel loader, with an operating capacity of 54,431 kg (120,000 lbs.), can center load haulage trucks with payload ratings ranging from 240 to 360 tons. The most powerful and productive wheel loader in its class.

Outstanding fuel efficiency

in some cases up to 45% less fuel consumption than comparably sized mechanical drive wheel loaders.

Utilizing proven switched reluctance technology, the Letourneau Drive system allows power generation that is fully regenerative, resulting in very efficient wheel loader operation. During braking or retarding, electrical motors become generators and feed power back into the generator connected to the engine.

The Letourneau Drive system allows for 100% capture and utilization of all braking energy during the loading cycle. Major components of the system include power electronics, motor/generator, control system, and gear train.



Description	Data
Group	Front End Wheel Loader
Make	LeTourneau now Joy Global
Model	L1850
Operating Weight	242 tons
Body Capacity	26 m3
Carrying Capacity	1200 m3
Productivity	240 MT to 360 MT
Equivalent Equipment	WA1200, CAT 994H,
Engine Make & Model	MTU Engine
Engine Rating	1491 kW



Komatsu 830E

The Komatsu Model 830E Hauling Truck is an electrical drive, off -Highway, rear dump truck whose gross weight is 850,000Lbs (385553kg) 240-255 ton nominal payload.

The model 830E truck is powered by Komatsu / MTU 2500Hp engine, alternator, and the blower is mounted on a separate sub frame to provide fast, easy removal and installation of the power mode.

The traction motors located within each rear wheel structure receive electric energy from the alternator. The two traction motors convert electrical energy back to mechanical energy through built-in gear trains within the wheel structure. The direction of the drive motors is controlled by a forward or reverse hand selector switch located on a console in the cab to the right side of the operator.

The dump body capacity standard, heaped @ 2:1 is 147 Cubic Meter. The maximum speed it can achieve is 56 km/h.



Description	Data
Group	OFF HIGHWAY TRUCK
Make	KOMATSU
Model	830E
Operating Weight	164 tons
Body Capacity	147 m3
Carrying Capacity	220 MT
Productivity	300 m3 – 1.5km lead
Equivalent Equipment	EH4500, Belaz 240, Cat797F, Liebherr T264.
Engine Make & Model	MTU Engine
Engine Rating	1491 kW



Belaz 240 MT Dump Truck

Designed for transportation of loosened rocks on technological haul roads at open-pit mining sites under different climatic conditions. These trucks can be used in construction of large industrial structures and hydraulic facilities, in construction of highway systems as well as in technological departments of the enterprises of processing industry. Depending on relative density of the transported materials maximal efficiency is achieved during operation with excavators and loaders with the following bucket capacity: 30 — 45 m³.



Description	Data
Group	OFF HIGHWAY TRUCK
Make	BELAZ
Model	BELAZ 75306
Operating Weight	181 tons
Body Capacity	141.1 m3
Carrying Capacity	220 MT
Productivity	280 m3 - 1.5km lead
Equivalent Equipment	EH4500, Cat797F, Liebherr T264.
Engine Make & Model	CUMMINS Q - SERIES
Engine Rating	1715 KW - 2300 HP



Hitachi EH4500

EH4500 mine hauler, which Hitachi features is a 254-t (280-ton) payload truck with AC drive technology. The truck features updates provided by both Hitachi and Euclid engineers. It publicly introduced Hitachi's new look and model designations.

The vehicle's AC drive technology is a combination of Siemens controls, inverter phase modules, and wheel tied to a Euclid and Hitachi-designed system for power generation and planetary-gear wheel drives. According to the company, the resulting package provides mechanical drive-like start-ups, higher top speeds, and better grade-ability. Maximum speed is 62 km/h (39 mph). The braking system uses AC wheel motors controlled by a Siemens resistor package to provide zero speed retardation

Haultronic II is the standard load weighing system and provides payload weight, cycle time, haul distance, and cycle count. It is fully integrated with the Contronic II monitoring system link to mine management systems.



Description	Data
Group	OFF HIGHWAY TRUCK
Make	HITACHI
Model	EH4500
Operating Weight	229 tons
Dump Body Capacity	159 m3
Carrying Capacity	251 MT
Productivity	330 m3 - 1.5 Km lead
Equivalent Equipment	Komatsu 860E, CAT 793F, Liebherr 282C
Engine Make & Model	MTU Engine V-16, 4000 Series
Engine Rating	2014 KW - 2700HP





Electro Hydraulic Rotary Drill

The DMH blast hole drills have earned a well- deserved reputation for dependability and productivity.

Operator safety and ergonomics also contribute to their high long-term value. Whether you are searching for simple and rugged, or advanced and automated, the Ingersoll-Rand DMH will always be a strong contender.

With the Ingersoll-Rand DMH machine having proved to be operating more efficiently and at a fraction of the cost per ton compared to other industry machines, is a preferred choice.



Description	Data
Group	ELECTRO HYDRAULIC ROTARY DRILL
Make	Ingersoll-Rand
Model	DMH
Operating Weight	180 ton
DRILL DIA	311MM
Productivity	1100 m3



BELAZ



LeTourneau

CATERPILLAR



JOYGLOBAL

KOMATSU

HITACHI

LIEBHERR



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