LiuGong

856HE EMAX+

Battery Type	Lithium Iron Phosphate
Battery Storage Capacity	282/350/423 kWh
Operating Weight	19,971 kg
Payload Capacity	5,800 kg
Standard Bucket Size	3.5 m³
Charging Time	~ 75 mins



BATTERY OPERATED ELECTRIC MACHINE

HIGH-EFFICIENCY PMSM AC MOTOR

- Powerful Performance with 160kW Peak Power
- Instant PEAK Torque
- Maximized Productivity with 95% Efficiency
- Minimized Noise and Emissions
- IP67 Rated Protection

REGENERATIVE ENERGY SAVING

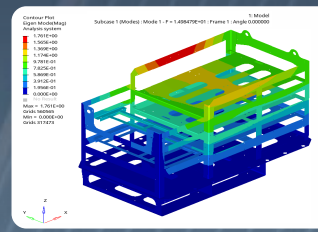
- Regenerative braking stores energy back into the battery.
- AC synchronous motors act as generators during deceleration.
- Efficient energy recovery maximizes battery performance.

ADVANCED BATTERY TECHNOLOGY

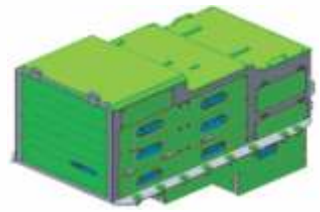
- High – Capacity LFP Battery Pack – 282/350/423 kWh
- Highly Safe and Reliable
- The LFP Battery Offers Thermal Safety up to 800°C.
- Long - Lasting Power and Life
- Fast Charging Capabilities
- Ambient Temperature Working Range - 40°C ~ 72°C.

INTELLIGENT BATTERY MANAGEMENT SYSTEM

- Monitors Real-Time Battery status, energy consumption, operating parameters, and temperatures.
- Optimizes maintenance and boosts efficiency
- Alerts and safeguards against over temperature & short circuits.



Shock Absorption Technology Satisfies Tough Working Conditions and Ensures Stable Operation of Battery System



Integrated Battery Encapsulation, High Voltage Area, 3-level Safety Alarm

- Battery pack manufactured by Global Leader - **Contemporary Amperex Technology Co., Ltd. (CATL)**
- Long Life: Up to 8 Years or 4,200 Cycles.
- Advanced BMS: Monitors Temperature, SOH and SOC at All Times, Even While Charging.



HIGHER LOADING POWER. FOR +10% LESS FUEL

The 856HE MAX benefits from LiuGong's new, intelligent hydraulics. This smart, fully electric system eliminates bypass throttling and overflow loss, improving hydraulic control and reducing energy consumption by more than 10% compared with conventional technologies.

INHERENTLY HIGH ENERGY EFFICIENT POWER TRAIN

POWER, TRACTION, EFFICIENCY - BUT ABOVE ALL ONE THING : **ABSOLUTE PERFORMANCE**

ADVANCE VCU SYSTEM → **LFP BATTERY PACK** ⇄ **PMSM AC MOTORS** → **LIUGONG EAT700 TRANSMISSION**

- Regenerative Energy Saving
- Reduced Idle Energy Consumption
- Minimized Transmission Losses



NEW 856HE

AN INTELLIGENT SOLUTION FOR A TOUGH WORLD TOUGH EQUIPMENT



ENERGY EFFICIENT

- Advance VCU : Upto 96% energy utilization.
- Energy recovery system: Achieves 20% energy saving
- Boosts energy transfer efficiency by 20% by eliminating the torque converter.
- Hydraulic motor auto-stops after 3 minutes of inactivity, maximizing energy efficiency.
- Fully automatic, electric control advance transmission EAT700, better operation efficiency.

COMFORT SAFETY

- Electric proportional fingertip control for effortless handling.
- Reduced cab noise by 10dB(A) and bystander noise by 20dB(A).
- 3-level safety alarm system, IP67 harness protection, standard ROPS/FOPS cabin and safety rear guard.
- High-definition rear camera with real-time monitoring display.

POWERFUL PERFORMANCE

- Class-leading payload capacity: Up to 5.45% increase.
- High torque PMSM motors.
- High operating weight for stable operation.
- Enhanced Traction and Breakout Force.
- Faster Cycle Time.

RELIABILITY COMMITMENT

- Proven and tested battery technology.
- Over 8 years of expertise in battery and its management system, focused on optimizing battery health and extending lifespan.
- Robust battery encapsulation with IP67 rated protection : dust proof, corrosion resistant and water resistant.

INTELLIGENT CONTROL

- Smart temperature controlled cooling with independent cooling fans for optimal performance.
- Electronic rear hood lifting system.
- Advance LiuGong I-Link telematics for monitoring performance..

CHARGER

CHARGER CAPACITY	CHARGING TIME
240 kW DC	~75 Mins (From 12% to 100%)
320 kW DC (Optional)	~60 Mins (From 12% to 100%)

*3-ø Supply Required



Charging gun Interface :
GB/T (GuoBiao/T Standard)
IP54 Certified Security

Panel Displays :

- Previous Data Recorded.
- O/P Voltage and Current.
- Time Left to Completely Charge.
- Electrical Units Consumed Per Charge.
- System Fault If any.

Total safeguard from :-

- Short Circuit
- Overcurrent
- Overvoltage/ Undervoltage
- Ground Fault/ Earth Leakage
- Surge Protection

Mounting	Base Structure Required
Dimensions (mm)	1040 X 750 X 1800
Weight (kg)	650
No. of Charger Modules	12
Standard Cable Length (mtrs)	6
IK Rating	10

*For Standard 240kW DC - Fast Charger



INTELLIGENT AND CONVENIENT - EASIER TO MANAGE

iLINK SYSTEM



- Can trace the location and operational information of the machine, and keep track of the machine status at all times.
- Generates concise, information-based data based on machine activity at the site through output analysis reports.

HOME

Displays HMR. MSN, Location, Weekly Operational Details



STATUS REPORT

Displays Weekly Energy Consumption, SOC, SOH, Temperatures – Motor, Motor Controller, Battery, Hydraulic Oil



SERVICE

Demonstrates Operational Analysis – Motor Speed and Load Rate Graphs, Operating and Idling Hours



INTELLIGENT COOLING SYSTEM

Four fans with independent rotation speed controls, automatic temperature control, reverse airflow for dust removal.

- Regulates fan speed autonomously, responding to temperature fluctuations and hot spots, which leads to improved energy efficiency.
- 30-min forward rotation and 1-min reverse Rotation - Enabling Carefree Dedusting.
- Forced Convection : Fans placed above the heat exchanger are employed to enhance the rate of heat dissipation.

OFF-ROADING HAS NEVER BEEN SO QUIET AND ECO-FRIENDLY!

By using an electric wheel loader in this category, we can reduce CO_2 emissions by upto 175 tons annually.

Note : 1 Ltr. of Diesel (ρ= 840 kg/m^3 at STP) is upto 2.68 kg CO_2 -eq.

INTELLIGENT AND CONVENIENT - EASIER TO MANAGE



OPERATIONAL SAVING

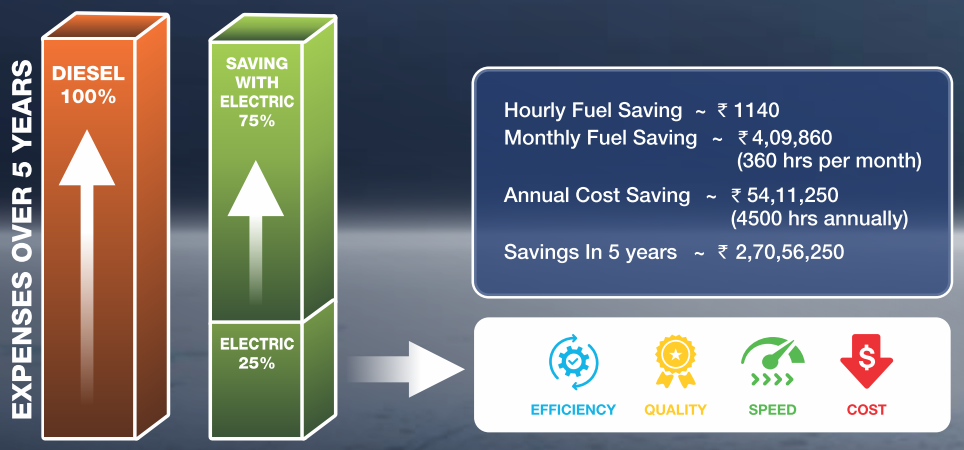
PARAMETERS	DIESEL VERSION	856HE-MAX (ELECTRIC)	COST SAVINGS WITH ELECTRIC
Working Hours	4500 Hrs Per Year	4500 Hrs Per Year	/
Energy Consumption Per Hour	15L Per Hour	42 Units Per Hour	/
Energy Consumption Unit Price (Rs.)	95	8	/
Annual Fuel Costing	64,12,500	15,12,000	49,00,500
Adblue@Rs.55/ltr (6% of Annual Fuel)	2,22,750	/	/
Maintenance Costing/hr	150	86	64
Annual Maintenance Costing	6,75,000	3,87,000	2,88,000
Annual Operational Costing	73,10,250	18,99,000	54,11,250
5 Year Total Cost	3,65,51,250	94,95,000	2,70,56,250

*For Standard Model - 856HE-Max
*Above mentioned data is just for reference purpose – in order to gain better understanding of the product and its benefits.

Note :- Production ↑ Unit Consumption ↑ Endurance Time ↓
The costs mentioned above are subject to change over time due to fluctuations in market trends.
Results are Viable - Under Standard Operating Conditions :-
*Standard Ambient Temperature / Pressure / Gradient

CHANGE FOR BETTER RETURN ON INVESTMENT





Hourly Fuel Saving ~ ₹ 1140
Monthly Fuel Saving ~ ₹ 4,09,860 (360 hrs per month)
Annual Cost Saving ~ ₹ 54,11,250 (4500 hrs annually)
Savings In 5 years ~ ₹ 2,70,56,250

EFFICIENCY QUALITY SPEED COST

2014 : Initiated Research On Battery Technology.

2018 : First Pure Electric Loader & Excavator Built by LiuGong.

2020 : Launch of the First-Generation after Validating Battery's Thermo - Chemistry.

2022 : 1st Model - 2nd Gen Tested and Authenticated in India.

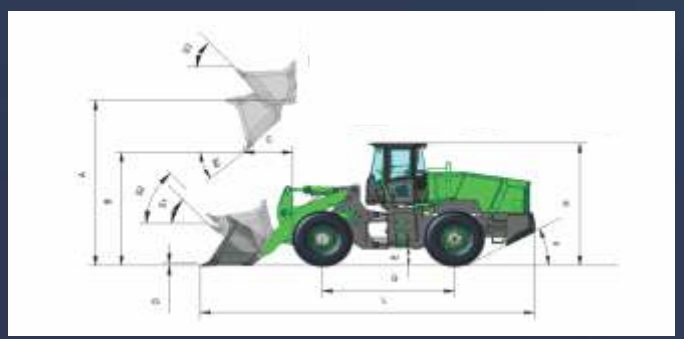
POWER BATTERY	
Battery Type	Lithium Iron Phosphate
Rated Storage Energy	282/350/423 kWh
Nominal Voltage	580 V
System Voltage	DC24V
BMS Protection Level	IP67
Cooling Type	Intelligent Temperature Control, Liquid Cooling
Recommended Charger	240 kW

Battery Capacity	Charger Capacity	Charging Time
282 kWh	240 kW	~60 mins
350 kWh	240 kW	~75 mins
423 kWh	320 kW	~70 mins

DRIVE MOTOR	
Peak Power	160 kW
Protection Level	IP67
Ambient Temperature	- 40 ~ 85 ℃
Cooling Type	Intelligent Temperature Control, Liquid Cooling
Altitude	≤ 5000 m

HYDRAULIC MOTOR	
Peak Power	160 kW
Protection Level	IP67
Ambient Temperature	- 40 ~85 ℃
Cooling Type	Intelligent Temperature Control, Liquid Cooling
Altitude	≤ 5000 m

STANDARD	
LiuGong I-Link (Telematics)	Standard
Cabin Guard	Standard
Rotary Beacon	Standard
Rear Guard	Standard



TRANSMISSION SYSTEM	
Make	LiuGong
Transmission Type	Planetary, Powershift
Number of Speed	Forward 2 / Reverse 1
Forward Speed F1/F2	13/40 Km/hr
Reverse R1	13 km/hr

AXLES	
Type	LiuGong Dry Axle
Axle Oscillation	± 9.5°

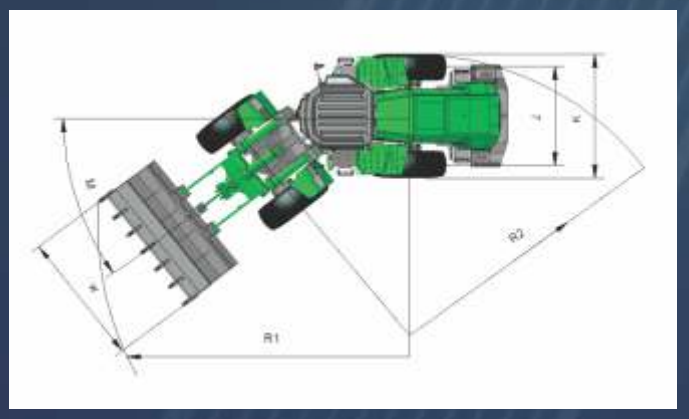
TIRES	
Tire Size	23.5-25 PR20

SERVICE CAPACITIES	
Cooling System	45 L
Hydraulic Reservoir	230 L
Axle, Front / Rear	43 / 46 L
Transmission	30 L

BRAKES	
Service Brake Type	Full Hydraulic
Service Brake Actuation	Hydraulic Dry Brake
Parking Brake Type	Drum
Parking Brake Actuation	Electro Hydraulic Control

STEERING HYDRAULICS	
System	Flow Amplifier
Steering Pump	Piston Variable Pump
Steering Relief Pressure	21 MPa

WORKING HYDRAULICS	
System	Fixed & Variable Dual Pump Confluent
Operation	Joystick Control
Work Pump	Gear Pump
Work Pressure	25 MPa



LOADER ARM PERFORMANCE	
Operating Weight	19,971 kg
Bucket Capacity	3.5 m³
Tipping Load - Straight	16,400 kg
Tipping Load - Full Turn	14,480 kg
Raise Time	5.2 s
Dump Time	1.5 s
Float Down Time	2.3 s
Fastest Total Cycle Time	9 s
Breakout Force	162 kN
A Maximum Hinge Pin Height	4,156 mm
B Dump Full Height Discharge	2,977 mm
C Dump Reach at Full Height Discharge	1,231 mm
D Maximum Digging Depth, Bucket Level	50.2 mm
S_1 Bucket Rollback at Ground Level	44.3°
S_2 Bucket Rollback at Carry	49°
S_3 Bucket Rollback at Maximum Height	56°
S_4 Maximum Dump Angle at Full Height	45°

DIMENSIONS	
E Ground Clearance	431 mm
G Wheelbase	3,525 mm
H Cab Height	3,500 mm
J Wheel Tread	2,280 mm
K Width Over Tires	2,880 mm
L Length with Bucket Down	8,615 mm
M Turn Angle, Either Side	38°
P Rear Angle of Departure	28°
R_1 Turning Radius, Bucket Carry	7,209 mm
R_2 Turning Radius, Outside of Tire	6,625 mm
W Width Over Bucket	2,976 mm

OPTIONAL

HIGH LIFT BOOM

Bucket	Hinge Pin Height	Dump Height
GP-3.5m³	4558 mm	3405 mm
Coal-5.5m³	4558 mm	3300 mm
Rock-2.7m³	4558 mm	3430 mm
Iron Ore-2.5m³	4558 mm	3575 mm

Compatible with Various Attachments

2.5m³ / 3.5m³ / 5.5m³

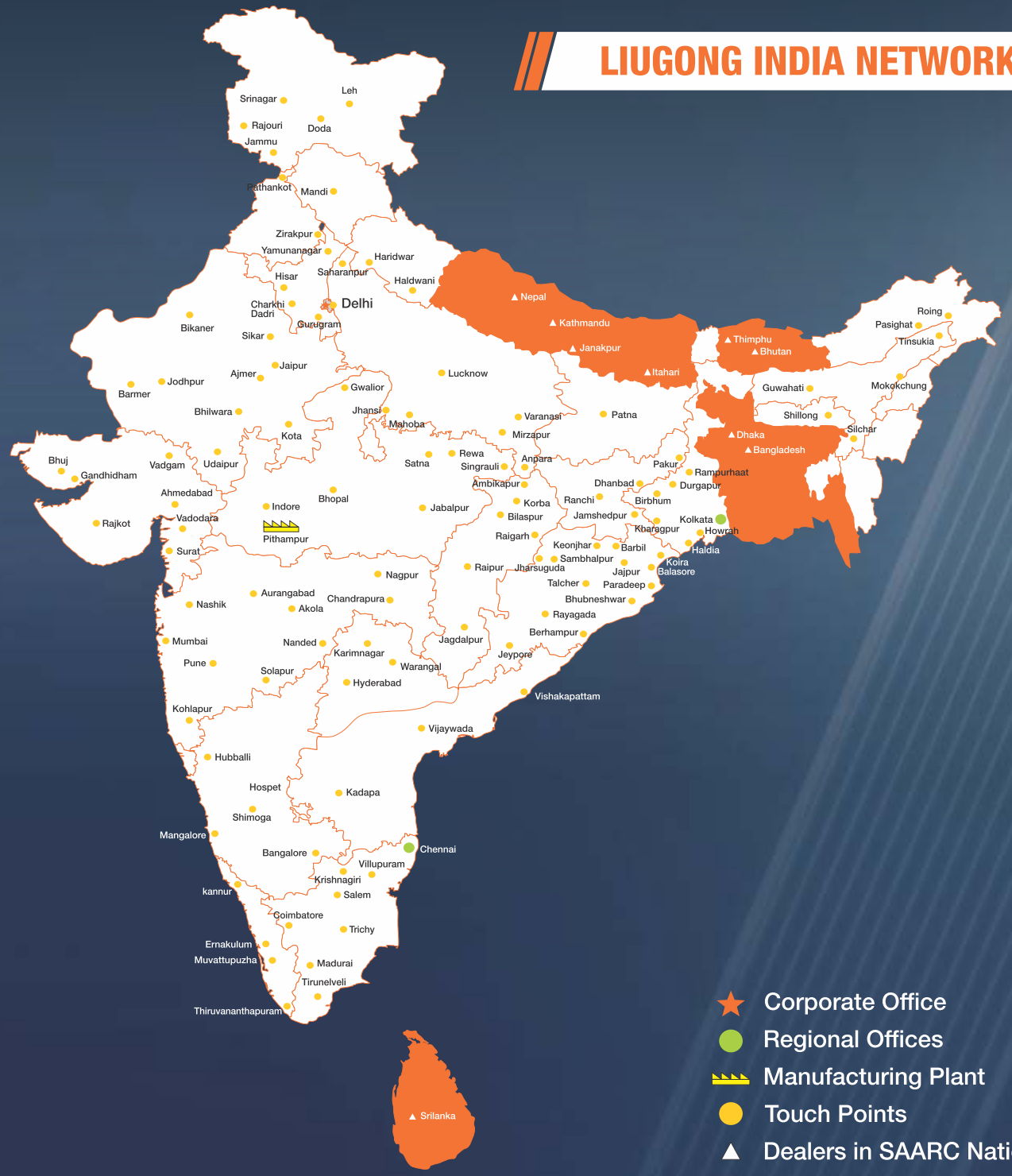
Side Dump Bucket

Fork

Grappler

Dozer Blade

LIUGONG INDIA NETWORK



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