



JGM870E

LE-ELECTRIX (BOSCH REXROTH)
POWERTRAIN SYSTEM



Bucket capacity

2.7-5.0 m³



Rated Battery Capacity

399.92/400.62/421.94 kWh



Operating Weight

22,500 kg



Integration of New Tech & Innovation

SUPERIOR TECHNOLOGY BOOSTS PRODUCTIVITY

JGM870E




Productivity &
Energy Consumption


Durability


Comfort


Safety


Serviceability


Dimensions &
Working Range


Standard &
Optional Config

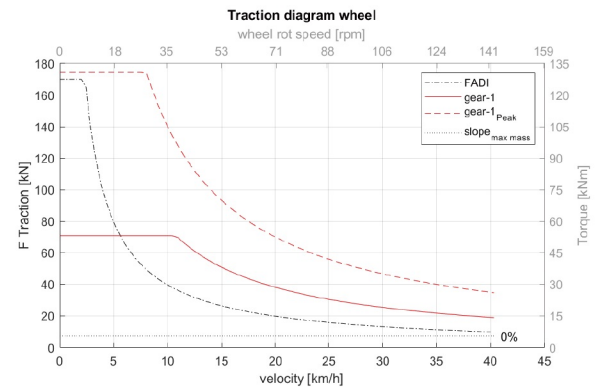
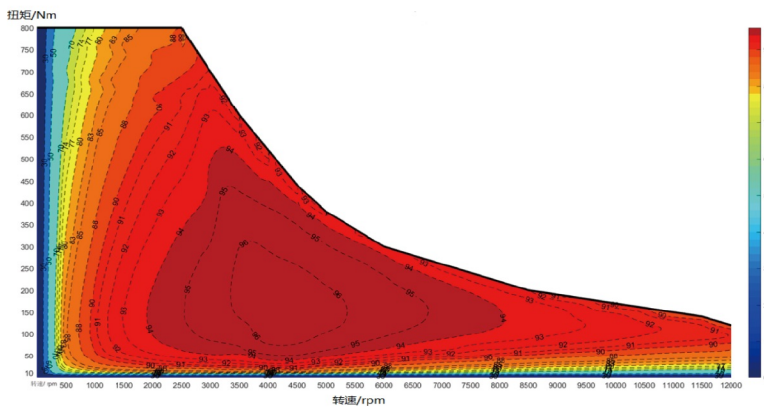
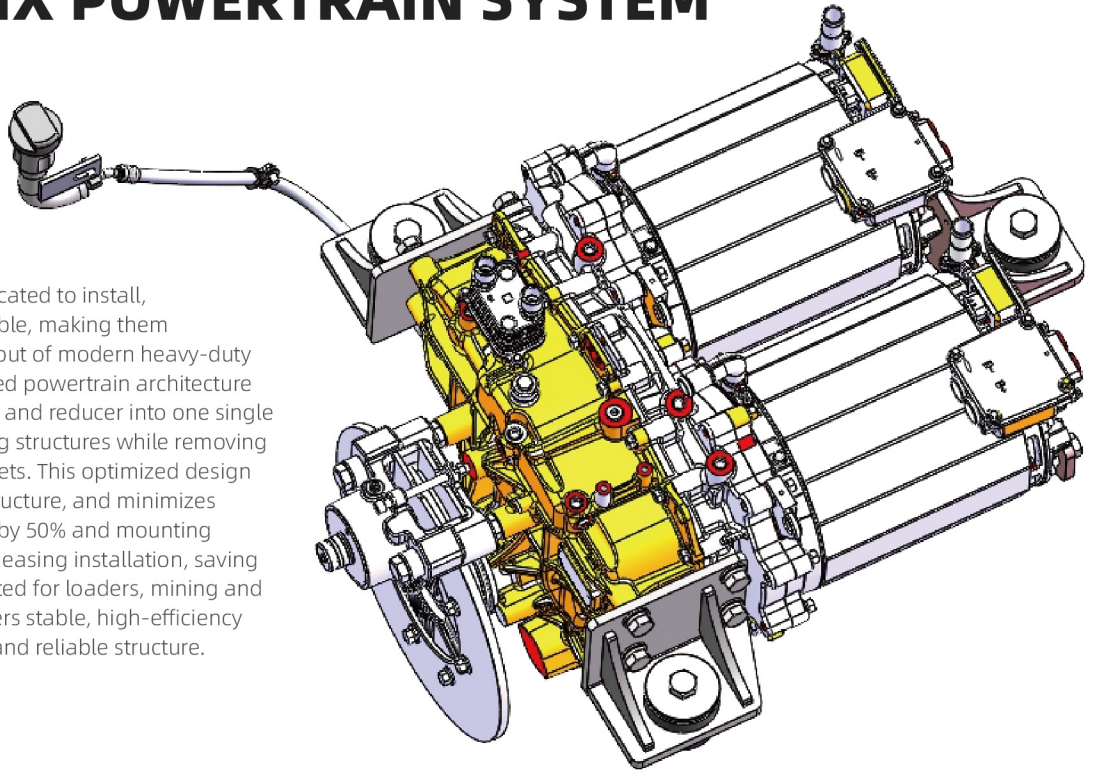
ALL-ROUND EVOLUTION, GREEN POWERS THE FUTURE

As a landmark product of JGM green engineering ecosystem, JGM870E electric loader is equipped with Le-ElectriX (Bosch Rexroth) three-motor stepless speed regulation technology and high-capacity LFP battery. With ultra-long battery life and ultra-low power consumption, it efficiently cuts energy costs. Keeping abreast of global carbon neutrality trends, it helps customers adhere to low-carbon concepts, establish a green, efficient and sustainable operation mode, and jointly build a brand-new low-carbon engineering ecosystem.

STEPLESS SPEED CONTROL LE-ELECTRIX POWERTRAIN SYSTEM

Conventional split

powertrain systems are complicated to install, energy-intensive and less reliable, making them unsuitable for the compact layout of modern heavy-duty machinery. Our 3-in-1 integrated powertrain architecture integrates the motor, controller and reducer into one single unit, featuring unified mounting structures while removing redundant housings and brackets. This optimized design greatly simplifies the overall structure, and minimizes failure risks. It reduces volume by 50% and mounting interfaces by 60%, significantly easing installation, saving equipment space. Perfectly suited for loaders, mining and agricultural machinery, it delivers stable, high-efficiency power output with a compact and reliable structure.



Further Optimized Productivity & Energy Consumption

Stepless Powertrain • Zero Power Interruption

The single-gear stepless drive delivers 100% continuous power, boosting cycle efficiency and eliminating power interruption by shifting.

Faster Acceleration • Stronger Heavy-Duty Start

The high-power single-gear powertrain delivers faster response, stronger start and consistent power, perfect for loading scenarios.

Mid-Low RPM • High Efficiency & Low Noise

The design keeps motors running in mid-low RPM for 90% of scenarios, which is in the high-efficiency range, reducing energy consumption & noise and extending service life.

Superior to the mainstream two-speed-shift configuration

2-speed systems rely on complex shift mechanisms prone to wear and frequent maintenance. Our single-gear design cancels these parts, cutting failure points by over 60%, improving uptime and reducing total operation cost.

PROVEN LONG- LASTING RELIABILITY

The upgraded 870E pure electric loader delivers outstanding value in harsh and complex working conditions. Certified through multi-condition field tests, it features a high-strength bearing structure and a highly reliable pure electric powertrain, delivering stable performance, efficient operation, and superior energy efficiency. Suitable for heavy-duty scenarios including yards, infrastructure and ports, it delivers stable and high-quality productivity consistently.

● Reinforced Drive Axle

The reinforced drive axle, which is more mature and reliable, offers greater load-bearing capacity, and ensures smoother matching of the travel system, specifically designed for heavy-duty applications.

● Optimized Mechanical Drive Shaft

The front driveshaft features a three-section end-face tooth structure for more stable torque transmission and stronger performance.

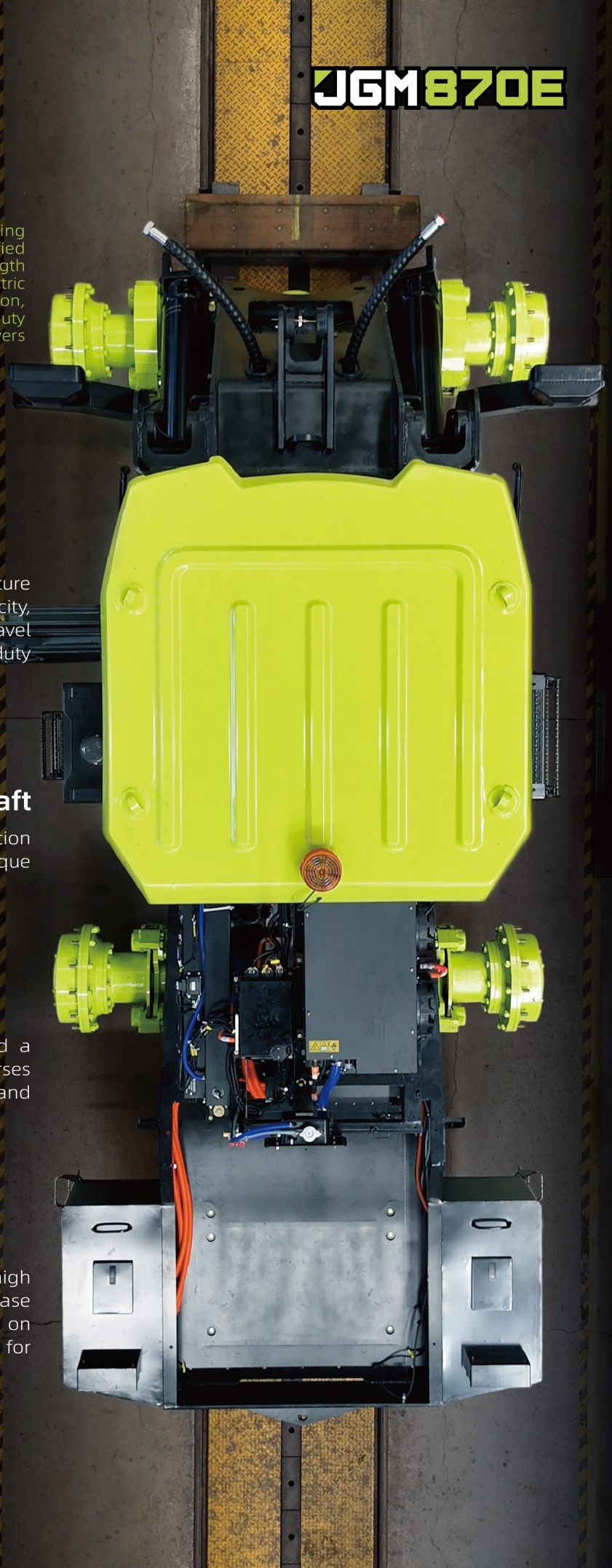
● Uniform Stress Distribution

Featuring CAE-optimized structural parts and a wide-span hinge design, this system disperses stress efficiently, offers high load capacity, and adapts to varying working conditions.

● Reinforced Front & Rear Frame

Reinforced front and rear frames deliver high strength and long service life. 3500mm wheelbase ensures stable movement. 35° steering angle on both sides enables small turning radius for superior site adaptability.

JGM870E



ULTIMATE SAFETY SOLUTIONS

This machine integrates a full suite of cutting-edge technologies and purpose-built safety designs to safeguard both operators and on-site personnel. By eliminating potential safety hazards, it elevates operational safety in high-risk scenarios, further mitigates accident risks, ensures uninterrupted task completion, and delivers rock-solid protection for your operations.

CAMERA SYSTEM
(Advanced 360° Surround Monitor System)



ROPS & FOPS (Optional)



WIDE CONDENSER AND RADIATOR



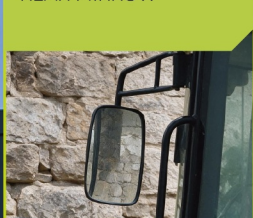
ALL TERRAIN ADAPTABILITY



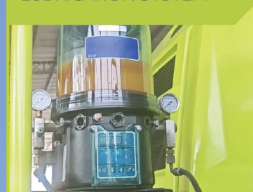
LOW NOISE CABIN



REAR MIRROR



AUTOMATIC CENTRALIZED LUBRICATION SYSTEM



FULL-OPEN HOOD



UPGRADED WIPER
AND VENTILATION



NEW TYPE COMBINED
DIGITAL DASHBOARD



COOLING & HEATING
AC



STEPLESS ADJUST
SHOCK-ABSORBING CHAIR



ELECTRONIC JOYSTICK



SPRING LOCK SAFETY
BELT



ARM REST



TWO-STEP PARKING
BRAKE BUTTON



EASY OPERATION & COMFORTABLE DRIVING

With real-time access to precise operation data, and comprehensive optimization of the operator's driving experience, JGM loaders achieve higher productivity; even in harsh working conditions, the loaders could still maintain high-level efficiency and keep operation continuity.

Specification

The total weight includes the weight of working devices and unloaded accessory devices specified by the manufacturer, as well as the weight of all liquid systems (i.e., hydraulic fluid, transmission fluid, gearbox fluid, and coolant for three electric systems) when they are filled to the liquid level specified by the manufacturer.

Total weight: 22,500 kg

Bucket capacity: 2.7~5 m³

Power battery

Lithium iron phosphate power battery is chosen to meet the requirements of IEC 62619/IEC 62321/IEC 62133/UN 38.3/MSDS; the protection class of battery pack system is IP67, and that of battery box is IP68; equipped with a battery heating & cooling system, it can operate within an ambient temperature range of -30~60°C, meeting the application requirements of different regions.

Battery type	Lithium iron phosphate
Rated storage energy (kWh)	399.92/400.62/421.94
Nominal voltage (V)	666.5/618.24/627.9
Operating voltage range (V)	517.5~755.55/480~700.8/487.5-711.75
Thermal Management System	Liquid cooling + liquid heating
Storage environment temperature	-30~60°C
Working temperature	Battery system: -35~60°C
	Cell charging: 0~60°C
	Cell discharging: -35~60°C
Relative humidity of working environment	≤90%
Protection class	IP68

Power assembly

The drive system employs a single-gear drive train without any mechanical shift mechanism, which results in superior reliability, smoother driving, and improved operating efficiency.

Transmission type	Transmission shaft
Traction (kN)	≥190
Gradeability (°)	30
Forward speed (km/h)	12-30 (settable) /38
Reverse speed (km/h)	15
Forward gear	2
Reverse gear	1
Rated/peak power of drive motor (kw)	120/220 x 2
Rated/peak power of oil pump motor (kw)	105/190

Drive axle

Type	Special reinforced axle for electric loader
Form	Dry axle
Swing angle	±10°

Fluid volume

Gearbox fluid (L)	3
Antifreeze (L)	65
Hydraulic fluid (L)	180
Drive axle gear fluid - total (L)	82
Fluid pump reducer (L)	0.4

Hydraulic system

The hydraulic system with dual-pump confluence and steering priority is stable and reliable; a high-pressure gear pump is adopted as the hydraulic pump, which is matched with hydraulic accessories such as multi-way valve, flow amplifying valve and pilot supply valve, with superior performance, making the entire hydraulic system more stable and reliable; the rubber hoses are arranged in the center, reducing the connection between rubber hoses and steel tubes, achieving convenient maintenance, and reducing the fault points.

Type of working pump	Gear pump
System pressure (MPa)	21
Lifting time (s)	5.3
Unloading time (s)	2.5
Lowering time (s)	1.9
Total time (s)	9.7
Control mode	Electric control pilot handle

Braking system

Service brake: hydraulic caliper disc;
Parking brake: hydraulic caliper disc.

Service brake type	Caliper disc brake
Service brake mode	Hydraulic brake
Parking brake type	Caliper disc brake
Parking brake mode	Hydraulic brake

Steering system

Steering system: Articulated steering wheel.
System supply: Wide-angle steering system, with lightweight and flexible steering.
Steering cylinder: Two hydraulic steering cylinders.
Steering stop: A mechanical stopper is employed, providing more precise limitation.

Steering mode	Steering wheel
Steering pressure (MPa)	17.5
Number of cylinders	2
Cylinder barrel diameter (mm)	108
Piston rod diameter (mm)	50
Cylinder stroke (mm)	475
Pump displacement (ml/r)	100
Steering angle	±35°
Minimum turning radius (outer side of tire) (mm)	7,050

Cab

The upgraded designed cab is equipped with high-end luxurious seats and adjustable steering gear to achieve pilot control, hydraulic one-key parking, large-space panoramic cab, dust prevention, shock absorption and noise reduction, which enhances the driver's comfort and safety during operation. The cab door opens backwards, and the width of the entrance is increased by 20%. It is designed without a doorsill, facilitating the driver's entry and exit. The cab adopts four-point elastic suspension and two-way shock absorption. The interior trimming features a color matching of dark color at the bottom and light color at the top, creating a tidy and comfortable cab space for drivers engaged in high-intensity operations. Adjustable seat armrests, combined with front and rear adjustable steering columns, are suitable for operators of all body types to adjust to a comfortable operating state. It is equipped with the rearview mirror, sunshade, fan, cup holder, wire loop floor mat, Bluetooth radio, hand rest, seat belt, safety hammer, fire extinguisher and other devices for comfort and safety. The rear hood features a technological modelling, which is more in line with the aesthetics of modern engineering machinery; non-metallic materials are adopted for integrated molding, and both wings can be opened simultaneously to provide more space for maintenance and service. The air conditioner can blow air from multiple angles, meeting the requirements of human comfort. The evaporator assembly adopts a side-mounted design, making maintenance and service more convenient.

Heating capacity of air conditioner (kW)	3
Cooling capacity of air conditioner (kW)	3.8

Low-voltage electronic system

The low-voltage electrical system of the machine features the centralized control mode, and the fuse boxes are respectively arranged on the cab and the electronic control support assembly, which is convenient for fault classification, maintenance and troubleshooting. Intelligent digital display screen provides a clear view of equipment status, fault information, power consumption data, etc. The rocker switch and combination switch are respectively placed in different areas of the cab according to man-machine engineering. Vehicle Manager digital platform; it can check the operating condition of the machine in real time, with remote diagnosis function, and can provide customers with fast and accurate solutions in case of any faults; the reversing camera improves the safety of driving control. The air speed of the fan is upgraded from one gear to six gears. The width of the rearview mirror lens is increased. The radio with USB and MP3 functions is adopted. Both front and rear wipers are provided, and the front wiper has water spraying function.

Voltage (V)	24
Battery (V)	2 x 12
Battery capacity (Ah)	120

Noise & environment

Cab noise according to ISO 6396-2008 / EN ISO 3744-1995	73 dB(A)-- Travel mode
Cab noise according to ISO 6396-2008 / EN ISO 3744-1995	74 dB(A)--Stationary work cycle mode
External noise according to ISO 6395-2008	98 dB(A)-- Travel mode
External noise according to ISO 6395-2008	99 dB(A)--Stationary work cycle mode

Performance parameters

The tipping load data is calculated using the standard ISO 14397-1:2007. When a 4m³ bucket is configured, the operating weight is 22,500 kg.

Tipping load - straight according to ISO 14397-1:2007 (kN)	145
Tipping load - complete turn according to ISO 14397-1: 2007 (kN)	136
Breakout force	≥180 kN
A Pin shaft height at maximum lifting (mm)	4,710
B Unloading height (mm)	3,480
C Unloading distance at maximum lifting (mm)	1,230
D Digging depth (mm)	45
S1 Maximum bucket retraction angle at ground level	45°
S2 Maximum bucket retraction angle at material transport position	55°
S3 Maximum bucket retraction angle at maximum lifting	53°
S4 Unloading angle	45°

JGM870E

7,050

Note: The load capacity of radial tires is indicated by the number of stars (*). The more stars, the higher load capacity of radial tires. For specific sizes of radial tires listed in the table, 2 stars (**) indicate the maximum load capacity of radial tires.

Parameters of variant working device				
Project	High dumping			Unit
	Standard bucket	Coal bucket	Enlarged bucket	
Bucket capacity	4.0	4.5	5.0	m³
Rated load	6,800	6,800	6,800	kg
Total weight	22,500	22,700	22,700	kg
Unloading height	3,480	3,420	3,400	mm
Unloading distance	1,230	1,240	1,250	mm
Overall length	9,400	9,430	9,450	mm
Minimum turning radius (outer edge of bucket)	7,550	7,650	7,700	mm
Note: Product specifications and parameters are subject to change without notice as technology evolves. The physical products shall prevail over prototypes in case of minor discrepancies.				

Standard Configuration	
Power battery Lithium iron phosphate battery, 400.62/421.94 kWh Battery heating & cooling system	Electrical System Integrated LED lighting system (lighting, warning, outline marker, status, etc.) 24V low-voltage battery Electric horn Windshield wiper Radio/player with USB port Instrumentation Motor temperature and speed Electronic controller temperature and speed Fault information display Battery health status, SOC value Battery temperature Timer Voltage Charging display Turn signal display High beam indicator lamp display Cab Seats Bidirectional adjustable steering column Large arc-shaped front glass Rubber shock pad Rearview mirrors on both sides Electric heating and cooling air conditioner One cup holder Sun shield Fire extinguishers Emergency hammer Other Automatic centralized lubrication On-board tools and attachments
Power assembly Two sets of permanent magnet synchronous motors and their control systems 1 forward gear, neutral, and 1 reverse gear	
Drive axle Special reinforced axle for electric loader	
Hydraulic system Electronic pilot control Dual-pump confluence hydraulic system	
Brake System Fully hydraulic brake system Auxiliary parking brake	
Steering system Fully hydraulic wide-angle steering system Steering priority	
Tire 26.5-25 -24PR	
Frame assembly Spacious middle hinge Conical bearing Articulated lock rod Traction pin	

Optional configuration		
Other Automatic centralized lubrication Secondary blade/ bucket teeth 360° camera system Automatic on-board weighing system Emergency stop button	Attachments Log grapple attachment, bale handling attachment Side dumping device	Cab ROPS/FOPS Cabin
	Axle & tire Wet axle Refer to the tire specification mentioned earlier Tire protection chain	Charging port standard GB/T 20234 Chinese standard IEC 62196 European standard CCS2



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