

High-Voltage Electric Counterbalanced Forklift 4-35T



Innovation Through Simplicity



WHY HIGH CAPACITY?

Intro:

Introducing high-capacity electric forklifts with a complete lineup from 4 to 35-ton load capacities, marking the era of high-voltage high-capacity Li-ion trucks.

This groundbreaking development adopts world-leading high-voltage Lithium-ion power combined with advanced PMSM (Permanent Magnet Synchronous Motor) technology. These high-capacity forklifts ensure triple guarantees of high performance, long running time and safety while aligning with the current trend of green and sustainable development.



Design and Maneuverability:

Family design with optimized dimensions

Adopting a newly designed family-style appearance, the high-capacity forklifts feature a strong, bold profile with clean and flowing lines and standardized lighting, that delivers a refined and solid overall look.

For enhanced logistics convenience, 7–10 ton models are designed with optimized height, allowing container loading without wheel removal. The 12-ton model features a more compact structure and a reduced turning radius, ensuring greater maneuverability in confined working environments.



A large red EP forklift is shown from a low angle, positioned on a concrete ramp. The forklift has a black mast and a driver's cab with a red hard hat visible inside. The EP logo is on the front. The background shows a cloudy sky and some industrial structures.

HIGH PERFORMANCE: HIGH SPEED AND HIGH GRADEABILITY

High-voltage Li-ion batteries enable more power delivery to motors, improving acceleration and travel speeds for high-capacity trucks. PMSMs complement this with rapid response times, swiftly reaching required speeds and torques. This combination of PMSM and high voltage can provide stable and strong power output, which further gives high-capacity trucks excellent climbing capabilities ensuring that the forklift can cope with various applications with ease.

The high-voltage model offers a 1.5-2 times performance improvement over the low-voltage model. Taking the 10-ton model as an example:

100%

100% improvement in travel speed for high voltage models in laden and unladen conditions.

45%

The high-voltage model demonstrates a 45% faster lifting speed.

100%

100% improvement in gradeability when unladen, 45% improvement when laden for high voltage models.

ENERGY EFFICIENCY: EXTENDED RUNTIME AND FAST CHARGING



High-voltage Li-ion batteries have high energy density and can store more electrical energy within a compact volume. High-voltage systems consume less energy and provide longer battery running time comparing low-voltage systems. Notably, these high-voltage Li-ion batteries boast an impressive cycle life of up to 4000 cycles, ensuring long-term durability and minimizing the need for battery replacements.

The PMSMs incorporate advanced control technology to optimize motor efficiency. Unlike traditional AC motors, PMSMs have higher energy conversion efficiency and reduce energy waste. This means that high-capacity trucks can work continuously for prolonged hours at lower costs.



4000

cycles for high-voltage Li-ion batteries

Equipped with fast charging capabilities, high-capacity trucks offer a remarkable charging experience. The high-voltage models are compatible with vehicle-grade charging stations and support 1C charging rating, allowing them to be fully charged in as fast as 1-1.2 hours. This minimizes downtime and maximizes productivity, making it ideal for multi-shift operations

Lithium batteries present considerably lower charging costs than fuel expenses. The integration of high-voltage and PMSM technology achieves up to 15% greater electricity savings versus traditional lithium and AC technology configurations. This significantly reduces long-term energy consumption costs.



1C
Charging



1 hour
Fully charged



15%
Energy savings

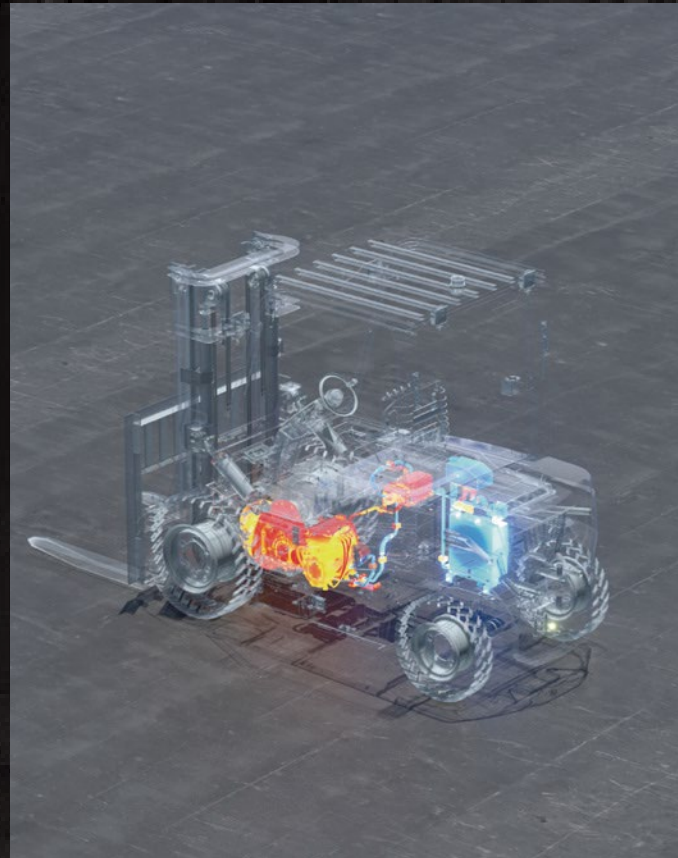
Safety Assured: Battery, motor protection, monitoring and mast buffering

Both high-voltage lithium batteries and PMSM employ multiple protective measures to ensure safe operations including overcharge protection, over-temperature monitoring, short-circuit protection, etc. minimizing the risk of potential hazards and maximizing operational safety.

The central controlling module- VCU (Vehicle Control Unit) extends the safety of the high-voltage forklifts. VCU provides precise control and real-time monitoring of critical parameters to ensure the truck operates within safe limits.

It also features turn speed control, which adjusts the forklift's speed based on the turning angle, ensuring stability during turns. An over-speed alarm alerts the operator if the forklift exceeds the safe speed limit.*

The high-capacity forklift mast is equipped with a hydraulic buffering system that ensures smooth lifting and lowering of loads. With controlled deceleration, the fork movement is smooth with no abrupt stops that could damage the load or cause operator discomfort. This feature enhances operational safety and prolongs the lifespan of the mast components. The mast width and the mast-to-chassis connection have been widened, providing a wider field of vision and better stability at height, allowing operators to handle loads with greater confidence and precision.



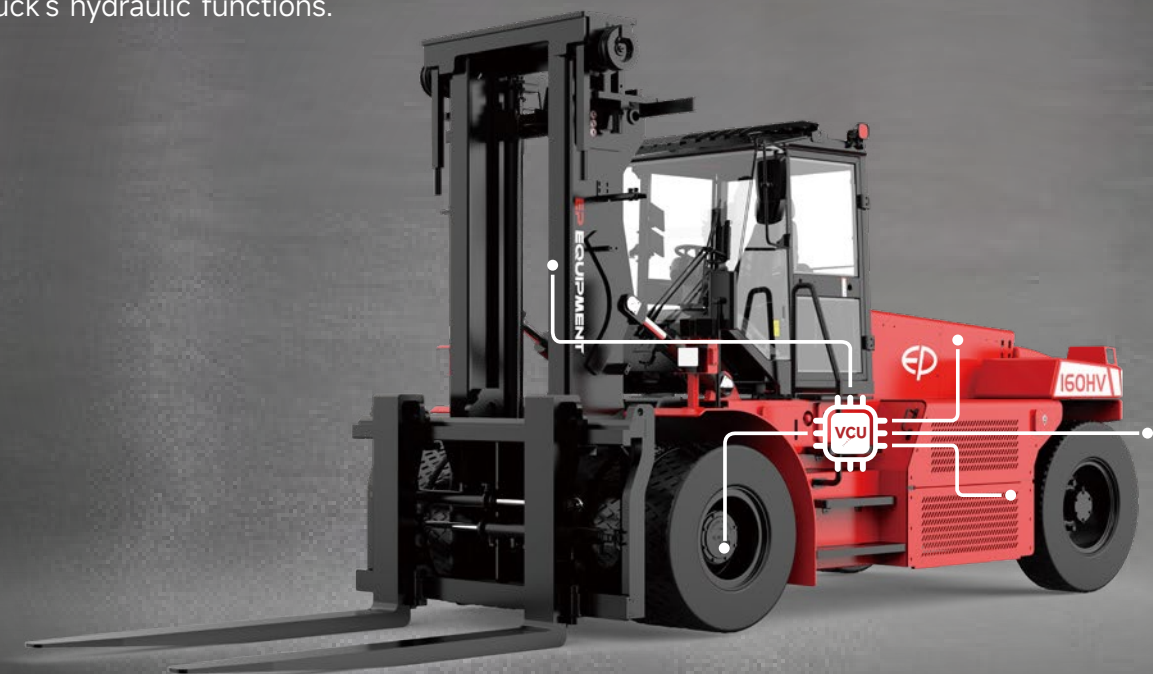
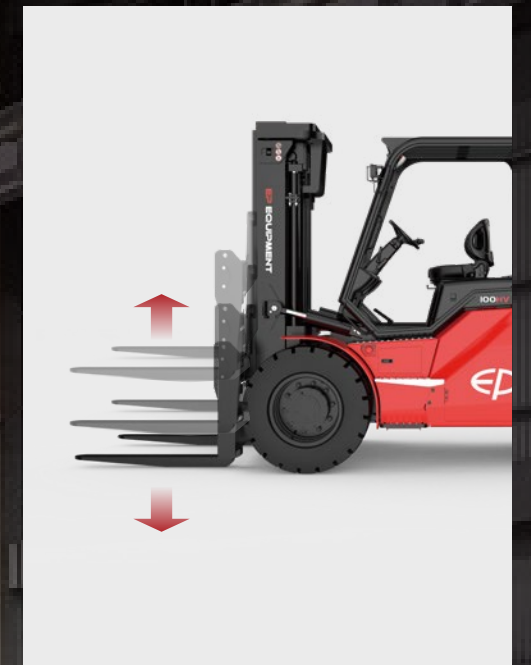
Smart and reliable strategy for thermal management

The high-capacity trucks utilize three distinct cooling systems to ensure optimal performance and reliability. Specifically, two water cooling systems are employed for the motor and the battery, while an oil cooling system is dedicated to the hydraulics system. The upgraded 2-in-1 water cooling unit simplifies pipeline layout, improving system efficiency and reducing potential leakage points while maintaining excellent cooling performance.

The water cooling systems provide superior cooling performance, preventing the truck from overheating even under the most demanding conditions or in the heat of summer. Water's higher heat transfer capacity compared to air allows it to dissipate heat more efficiently from critical components like the motor and battery. This efficient heat dissipation helps maintain the battery temperature around 30~35°C, protecting these vital components from overheating and potential damage or failure. Consequently, this enhances the overall reliability and longevity of the high-capacity trucks.

Additionally, water cooling systems typically operate with less noise compared to air cooling systems that rely on high-speed fans. This noise reduction is particularly beneficial in applications where a quieter operation is desirable, such as in urban areas or indoor facilities.

The oil cooling system, on the other hand, is used for the hydraulics system. This system ensures that the hydraulic components remain within optimal temperature ranges, thereby maintaining their efficiency and preventing overheating. By effectively managing the temperature of the hydraulics system, the oil cooling system contributes to the smooth and reliable operation of the truck's hydraulic functions.



Low maintenance: Longer battery life span and reliable components

Operating at a higher voltage allows the battery to be designed with fewer individual cells. The integrated battery pack design further streamlines the structure, improving reliability while reducing maintenance complexity and potential failure points.

Thanks to advanced BMS (Battery Management System) which helps to regulate and monitor high-voltage battery, these batteries tend to have a longer life than low-voltage lithium batteries, reducing the need of battery replacement.

The brushless, simple rotor design of PMSM eliminates mechanical wear from brushes and commutators. This durable, low-friction construction requires minimal periodic maintenance, reducing associated labor costs and downtime.

The integrated hydraulic motor design further simplifies the system, improving reliability while reducing maintenance. Key components including the motor, controller and in-house developed battery are all IP67 rated and equipped with water-cooling, ensuring stable performance under demanding conditions.

Sustainability : Zero emissions for cleaner environment

As fully electric trucks powered by lithium-ion batteries, these forklifts produce zero emissions during operation, eliminating exposure to toxic fumes like carbon monoxide and nitrogen oxides. Unlike lead-acid batteries which can leak corrosive acid, lithium-ion batteries do not risk hazardous spills. The high-capacity li-ion trucks contribute to a cleaner and safer indoor working environment without compromising handling capabilities.



Strong adaptability adaptable to harsh outdoor weather conditions

Experience uninterrupted productivity through rain, puddles, and damp conditions with the overall IPX4 rating. Plus an exceptional IP67 rating for high-voltage components. Engineered to withstand harsh temperature, high-capacity trucks offer an ambient temperature range of -20°C~40°C allowing them to perform no matter climate. The newly designed cabin improves sealing performance for better protection against dust, rain and harsh environments, ensuring safer and more comfortable operation.

Battery heating when charging comes as a standard function for high capacity models, which is activated when the surrounding temperature is below zero to always offer an optimal temperature range for efficient and safe charging even in cold weather conditions.

The dual front wheels is a standard configuration on several models offering a wider base of support, which greatly improves the forklift's stability. Considering the capacity loads of the high-capacity trucks, the weight of the load is more evenly distributed across a larger surface area. The increased ground contact area provided by the dual wheels enhances traction. This is particularly beneficial in environments where the floor may be slippery or uneven while operating outdoors, ensuring that the forklift can maintain a firm grip and operate safely. This not only helps in maintaining balance but also minimizes the stress on individual tires, extending the lifespan of the tires.



Great support for clients' investment: After-sales Service



Remote/Online Services:

Telematics technology enables remote monitoring of battery conditions, performance status, and other critical parameters for forklifts. Additionally, production, technical, and after-sales experts are available around the clock to provide prompt and comprehensive solutions for any maintenance issues through virtual support.



Physical Services:

Comprehensive manuals and supporting documents are provided for all forklift models. In case of breakdowns or replacements, spare parts are swiftly delivered to the clients' locations by global subsidiaries or domestic inventory, minimizing operational disruptions caused by equipment downtime.

EFL40/45/50-HV-PRO EFL50/55-6-HV-PRO

COMPACT AND MIGHTY

The EFL40/45/50/55-HV-PRO offers more compact sizes while delivering enhanced performance over low-voltage forklift models. Their single front wheel design allows maneuverability in tighter spaces, making them ideal for industries like steel manufacturing, automotive, and heavy machinery production where space can be limited. With high-voltage Li-ion batteries, EFL40/50-HV-PRO can endure operating hours up to 6 hours. The 20-25% gradeability enables them to handle rough terrain and ramps with ease, making them suitable for outdoor applications with ease.



EFL50/55-HVD-PRO EFL60/70/75-HV-PRO

OVERCOMING THE MOST DEMANDING APPLICATIONS

The EFL50/55/60/70/75-HV-PRO caters to industries dealing with extremely heavy loads, such as construction, metalworking, and more. The dual front wheels provide enhanced stability and traction when carrying massive weights. The 30% gradeability, combined with a high ground clearance, makes them adept at navigating inclines, uneven surfaces, and challenging terrain commonly found in rugged applications. With a maximum travel speed of 30-34 km/h, these forklifts can swiftly handle operations even in extreme conditions, such as in front of incinerators or in high-heat areas. Additionally, their fast lifting speed ensures efficient material handling, further enhancing productivity in demanding industrial settings.



EFL80/100-HV-PRO



DIVERSE LOADS, WE GOT YOU.

The EFL80/100-HV-PRO is engineered for the most demanding heavy-duty applications in industries like mining, quarry and stone industry, heavy equipment manufacturing, etc. The dual front wheels offer superior load distribution and stability when handling extraordinarily heavy loads. Despite their compact size and small turning radius, these forklifts boast a high ground clearance, allowing them to navigate challenging terrains with ease. The max travel speed of 30km/h allows the trucks to move swiftly, handling operations efficiently over long distances. Designed with low noise levels, these trucks can provide comfortable working environments for operators, minimizing impacts in noise-sensitive working environments. Additionally, the optional attachment like fork positioner with sideshift enables these forklifts to carry different shapes of loads, enhancing their versatility in handling diverse cargo.



EFL120-HV-PRO

RELIABLE PERFORMANCE AND MANEUVERABILITY

The EFL120-HV-PRO is designed for handling heavy and oversized cargo with ease in industries such as ports, shipyards, and the stone industry. Its compact dimensions deliver a smaller turning radius, offering maneuverability in confined spaces. The ergonomic cabin ensures operator comfort during extended operating hours. Integrated key components such as motor and controller improve overall reliability while reducing maintenance complexity. The wet drive axle enables smooth and precise control, enhancing handling performance and reducing operator fatigue. With strong gradeability and a weather-resistant design, it is well-suited for both indoor and outdoor applications.



EFL1603/1803-HV

UNDENIABLE POWER FOR CHALLENGING TASKS

The EFL1603/1803-HV is designed for handling exceptionally heavy and bulky loads in industries such as construction, concrete, and aircraft servicing. With optimized dimensions, these trucks offer improved maneuverability and operational flexibility. The combination of dual front wheels and a heavy-duty wet drive axle ensures stability and continuous performance under demanding conditions. A standard all-weather cabin with air conditioning and ergonomic fingertip controls ensures operator comfort and safety during long shifts. Their robust design and strong gradeability allow them to operate efficiently across rough terrain and challenging environments.



EFL2503-HV

BIG MUSCLES FOR 25TON HEAVY-DUTY LOGISTICS

Built for steel production, infrastructure, and large-scale logistics, the EFL2503-HV is the big-muscle workhorse of the 25-ton class. Its a robust chassis delivers strong and consistent performance for transporting oversized cargo. The high-voltage system provides powerful and stable output, while the dual front wheels and heavy-duty wet drive axle ensure maximum stability and durability. With high gradeability and a weather-resistant design, the truck performs reliably in demanding outdoor environments. The spacious, high-visibility cabin with ergonomic controls helps reduce operator fatigue during extended operations.



EFL3503-HV

THE ULTIMATE HEAVYWEIGHT FOR THE TOUGHEST JOBS

The EFL3503-HV is the true giant of the 35-ton class built to take on the most extreme loads with unstoppable power. In mining, ports, and aerospace manufacturing sectors. Powered by a high-voltage system, it delivers strong performance while reducing environmental impact compared to traditional IC trucks. A reinforced mast and high-torque drivetrain enable stable operation on steep inclines and rugged terrain. The intelligent thermal management system ensures reliable performance in extreme temperature conditions. Its advanced hydraulic system allows precise control when handling large and high-value cargo, while standardized interchangeable components help simplify maintenance and maximize uptime.

