

Terminal Tractor Market Assessment, By Type [Automatic, Manual], By Application [Marine, Airport, Oil and Gas, Warehouse and Logistics, Food and Beverages, Others], By Battery Type [Lithium-ion Battery, Lithium Magnesium Phosphate, Nickel Manganese Cobalt, Others], By Propulsion [Internal Combustion Engine, Electric], By Region, Opportunities and Forecast, 2018-2032F

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Report description:

Global terminal tractor market is projected to witness a CAGR of 5.08% during the forecast period 2025-2032, growing from USD 1.31 billion in 2024 to USD 1.95 billion in 2032. The market has experienced significant growth in recent years and is expected to maintain a strong pace of expansion in the coming years.

A major spur is the growing pressure to optimize freight handling operations in ports and warehouses without delay, with businesses strongly desiring increasing efficiency in this process. This pressure is, in turn, intensified by the quick development of e-commerce, which greatly increased the number of goods to be moved fast and without delay. Further, the automation of logistics is changing the complexion of terminal operations, and automated terminal tractors have streamlined processes and lessened labor intervention, mitigating labor shortages while improving precision. Besides, other technological innovations such as artificial intelligence, the Internet of Things (IoT), and robotics are resurfacing and enhancing the capabilities of terminal tractors toward making their presence indispensable in dynamic operating environments. Government investment in port infrastructure and logistics facilities adds further impetus to market opportunities, as supply chain resilience improvement initiatives create a conducive landscape for terminal tractor manufacturers. Lastly, the strong mandate for cost reduction leads companies to embrace terminal tractors, which provide long-term cost savings through improved fuel efficiency and reduced maintenance costs. Environmental factors are also important in this growth story, as stricter regulations force companies to resort to cleaner modes of transportation. Low emissions, cost-saving electric and hybrid terminal tractors are gaining popularity, further backed up by advancements in the field of battery technology.

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For instance, in June 2024, New Hyster-Yale, Inc. Zero-Emission Terminal Tractor Previews at Terminal Operations Conference (TOC) Europe 2023. Hyster will discuss solutions for port equipment electrification, giving visitors a glimpse of the zero-emission terminal tractor Hyster-Yale, Inc. is developing with Capacity Trucks at stand C11. The company will also be on hand to share updates on its hydrogen and lithium-ion-powered container handlers.

Increased Cargo Transit is Expanding the Global Terminal Tractor Market

The terminal tractor market is expected to grow significantly globally, with the primary driver being the growing cargo transit volume. International trade continues to grow in volume, and with this has come the need for efficient cargo-handling solutions. Terminal tractors are increasingly being adopted because they help improve operation efficiency and reduce turnaround times required within ports and logistics facilities to move containers and trailers. This growth in containerized trade is complemented by the development of ports and logistics centers, which require high-end equipment to handle the increasing stream of goods. In addition, e-commerce has added another layer of complexity to logistics requirements. As greater quantities than ever are shipped, terminal tractors play a key role in ensuring efficient supply chains. Logistically, automation in the logistics sector also accounts for the increase in market volumes, as automated terminal tractors simplify and cut away the potential for labor shortages.

For instance, in June 2024, Terberg introduced the next-gen YT223CC Container Carrier, providing greater visibility and performance. It is the successor to the YT222CC Container Carrier - the new Terberg YT223CC. One of the most striking features of the YT223CC is the completely redesigned cabin, based on the successful design of the YT223. The 360-degree view from the cabin helps the driver to move fast, efficiently, and safely around the yard.

Automation Fueling the Global Terminal Tractor Market Growth

The global terminal tractor market is growing significantly, primarily due to a high increase in automation in the logistics and transportation industries. Industries looking for improved operational efficiencies often see the effectiveness of implementing automated terminal tractors at ports, distribution centers, and warehouses to optimize the cargo handling process. These specialized vehicles, designed to handle trailers and containers in confined areas, are essential for the rapidly increasing needs of global trade and e-commerce. Automation of terminal operations addresses some of the major challenges, such as labor shortages and the need for exacting maneuvering in a crowded environment. Automated tractors minimize human intervention by making routine tasks such as trailer spotting and container movement smoother and more efficient. This reduces idle time and increases safety by reducing the probability of accidents related to manual operations. The integration of advanced technologies such as AI, IoT, and robotics enables these tractors to function perfectly under changing conditions that meet the dynamic needs of modern supply chains. The rising trend of automation can be reflected in many collaborations within the different industries working to advance terminal tractors' capabilities.

For instance, in March 2023, Terberg Special Vehicles and FERNRIDE GmbH announced their collaboration to develop an automated terminal tractor CE-certified for commercial production. This solution offers both teleoperated and autonomous driving capabilities to ensure a smooth and gradual transition to full autonomy with human-in-the-loop. The production of these trucks will start in 2024, ready for gradual autonomy.

Electric Terminal Tractor Will Lead Global Terminal Tractor Market

Enviro-economic and technological factors have been putting electric terminal tractors at the fore of the global market. A significant driver for the electric terminal tractor has been the aspiration to achieve sustainability. Electric terminal tractors are slated for growth owing to zero tailpipe emissions and reduced operating costs compared to traditional diesel models. The onus of environmental pollution arising from growing emissions of greenhouse gases, especially in the transport sector, among others, is driving this change. Emission standards in governments worldwide are pushing more for cleaner alternatives such as electric terminal tractors. These vehicles comply with regulatory mandates and align with corporate sustainability goals, making them an attractive option for logistics and transportation companies.

Furthermore, battery technology enhancement is improving the efficiency and reliability of electric terminal tractors. Increased battery range and faster charging times make these vehicles more feasible for different port and logistics applications. Moreover, the capital cost might be higher compared to a diesel tractor, but long-term savings on fuel and maintenance pay can be beneficial and act as an investment over time.

For instance, in March 2024, Hyster-Yale, Inc. announced an agreement to provide APM Terminals with ten battery-powered

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terminal tractors for their location at the Port of Mobile in Alabama. The electric terminal tractors, which are scheduled to be delivered in 2024, are part of a USD 60 million investment in port equipment electrification pilots by APM Terminals. Each tractor will be powered by a 260-kilowatt-hour lithium-ion battery, which is expected to provide about 9.5 hours of continuous run time on a full charge.

North America Expected to Dominate the Global Terminal Tractor Market

The major reasons attributed to this prominent presence include interlinked factors that drive the region towards its crucial role in logistics and transportation. The accelerated growth in the e-commerce industry is a key driver, given the sheer volume of online retail requiring efficient logistics and cargo handling solutions. Companies in the United States have been significantly investing in automation technology to improve the productivity of their systems and reduce manpower and human errors. This trend alone is increasing the demand for terminal tractors while also responding to the general trend of modernization in the industry. The region's large number of marine ports and logistics networks enhance material handling volumes, thereby presenting an incentive for using terminal tractors for efficient operations.

Additionally, supportive government efforts, primarily in Canada, will enhance the terminal tractor market through investments to improve trade infrastructure. Programs such as the National Trade Corridors Fund (NTCF) are expected to increase the region's logistics capabilities. The collective factors put North America in an excellent position to take on a leadership role in the global terminal tractor market. Growth will continue as industries see these changes in logistics and transportation requirements. For instance, in August 2024, Kalmar Corporation, part of Cargotec Corporation, signed an agreement to acquire the product rights of the electric terminal tractor product line from Lonestar Specialty Vehicles (LSV) in the United States. As part of the transaction, LSV will transfer the immaterial assets for Kalmar and act as Kalmar's contract manufacturing partner for the acquired electric terminal tractor product range.

Future Market Scenario (2025-2032F)

- Growing adoption of electric and hybrid terminal tractors due to lower emissions. These models offer reduced maintenance costs and improved fuel efficiency compared to traditional diesel-powered tractors.
- Rising containerized trade, particularly in emerging markets like Asia-Pacific. Development of new ports and logistics hubs increases demand for efficient cargo handling equipment.
- Innovations such as autonomous driving features and telematics systems are improving efficiency and safety. Manufacturers are focusing on research and development to create low-emission, high-efficiency tractors.

Key Players Landscape and Outlook

The global terminal tractor market is competitive, with several key players who drive innovation and growth. Each of the leaders in the industry is shaping market trends through substantial investments in research and development and further evolution of their product offerings to meet the changing logistics and transportation markets. Kalmar, a business unit of Cargotec Corporation, offered an extensive range of terminal tractors and a strong commitment to automation technologies, including the development of fuel-cell-powered models that promise extended operating uptime while minimizing new electrical infrastructure requirements. Konecranes Plc boasts innovation in lifting equipment and automated solutions, particularly in Europe, one of the areas with rapid growth in automation adoption. The competitive landscape of the global terminal tractor market reflects a dynamic interplay between innovation, sustainability, and the growing need for efficiency in logistics operations. As industries adapt to these trends, the contributions of leading manufacturers will be crucial in shaping the future of cargo-handling solutions worldwide.

For instance, in October 2024, Kalmar Corporation agreed to supply Italian maritime logistics operator Grimaldi Group with three Kalmar heavy terminal tractors.

For instance, in May 2024, Cargotec Corporation agreed with Uniport Livorno Srl to supply three Kalmar TR618i heavy terminal tractors. The new heavy terminal tractors will be delivered with cabin air suspension, an optional feature to increase operator comfort during shifts.

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*Companies mentioned above DO NOT hold any order as per market share and can be changed as per information available during research work.

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