Hybrid locomotives and propulsion systems

Solutions for Modern Freight Transportation

Advanced Rail Technologies
Our Modular Solution, Your Energy Efficiency, Everybody’s Green Future.

Toshiba is your competent partner for hybrid freight locomotives and electrical propulsion systems. Discover our modular concepts for your new build or refurbishment projects - Toshiba is providing you with customized solutions.

Hybrid System

The hybrid system combines Toshiba’s long experience in propulsion systems and its innovative SCiB™ battery technology (SIL 4 compliant). Choose the perfect type of hybrid system adjusted to your demand.

- **Hybrid Drive**: Optimization is achieved using one or a combination of the following power sources: catenary, engine, battery.

- **Battery Drive**: Ideal for shunting and low speed operation.

- **Regenerative Braking**: When braking, regenerative power can be transferred into the catenary or stored in the battery.

**High Efficiency**

Energy savings and emission free operation

**High Flexibility**

Easier maintenance due to modular design

**High Comfort**

Provided by larger driver’s cabin

**Our Goal**

- Improve life cycle cost
- Reduce maintenance effort
- Improve operational reliability

Toshiba combines its experience in railway systems with its innovative technology. In designing next generation products we promote a more safe, reliable and sustainable railway system.
SCiB™ is suitable for Railway Applications

**Safety**
- Batteries come in a variety of sizes; SCiB™ not only has a high specific energy but also high specific power, leading to a significant reduction in size and weight for the same level of energy. This is especially beneficial for railway applications, where space and weight are critical.

**Long Life**
- SCiB™’s high rate capability and excellent characteristics ensure high reliability and long cycle life. This is particularly important for railway applications, where the batteries need to withstand the rigors of frequent start-stop cycles.

**High Input & Output**
- SCiB™ can support high-power, high-current applications, which is crucial for the efficient operation of railway systems.

**Features realized by the use of lithium-ion batteries size 3.7G**

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**DB Cargo BR1094 HELMS**

**JR Freight HD300**

Toshiba Hybrid Locomotives

Toshiba Hybrid Locomotives have been designed to meet the needs of the railway industry, offering high efficiency, reliability, and safety.

**New Generation of Traction Motors**

- Smarter: Smarter maintenance operations, thanks to a unique traction motor.
- Reliable: Totally new, high-efficiency structures ensure reliable service.
- Efficient: Significant weight savings lead to high efficiency at 91%.
- Quieter: New traction motors have been specifically designed to reduce noise and vibration, providing a quieter ride.

**Reduction of Life Cycle Costs and Emissions for HD300**

- 61% NOx Reduction
- 27% Fuel Consumption Reduction
Toshiba's advanced railway and locomotive technologies situated at the “Heart of Europe”

Toshiba Railway Europe GmbH

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Locomotives & Mechanical Engineering
Address: Bunsenstrasse 29, 24145 Kiel

Site Duesseldorf
Propulsion Systems & Electrical Engineering
Address: Marienstrasse 8, 40212 Duesseldorf

Contact: sales@toshiba-trg.eu

Working together with a global network

Toshiba Railway Europe GmbH is a part of an expansive global network with operations in Japan, China, India, Taiwan, Singapore, Australia, South Africa and the United States.

Main global offices of the Toshiba Group cooperation for Railway System Business

Find out more on http://toshiba-railway.com

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