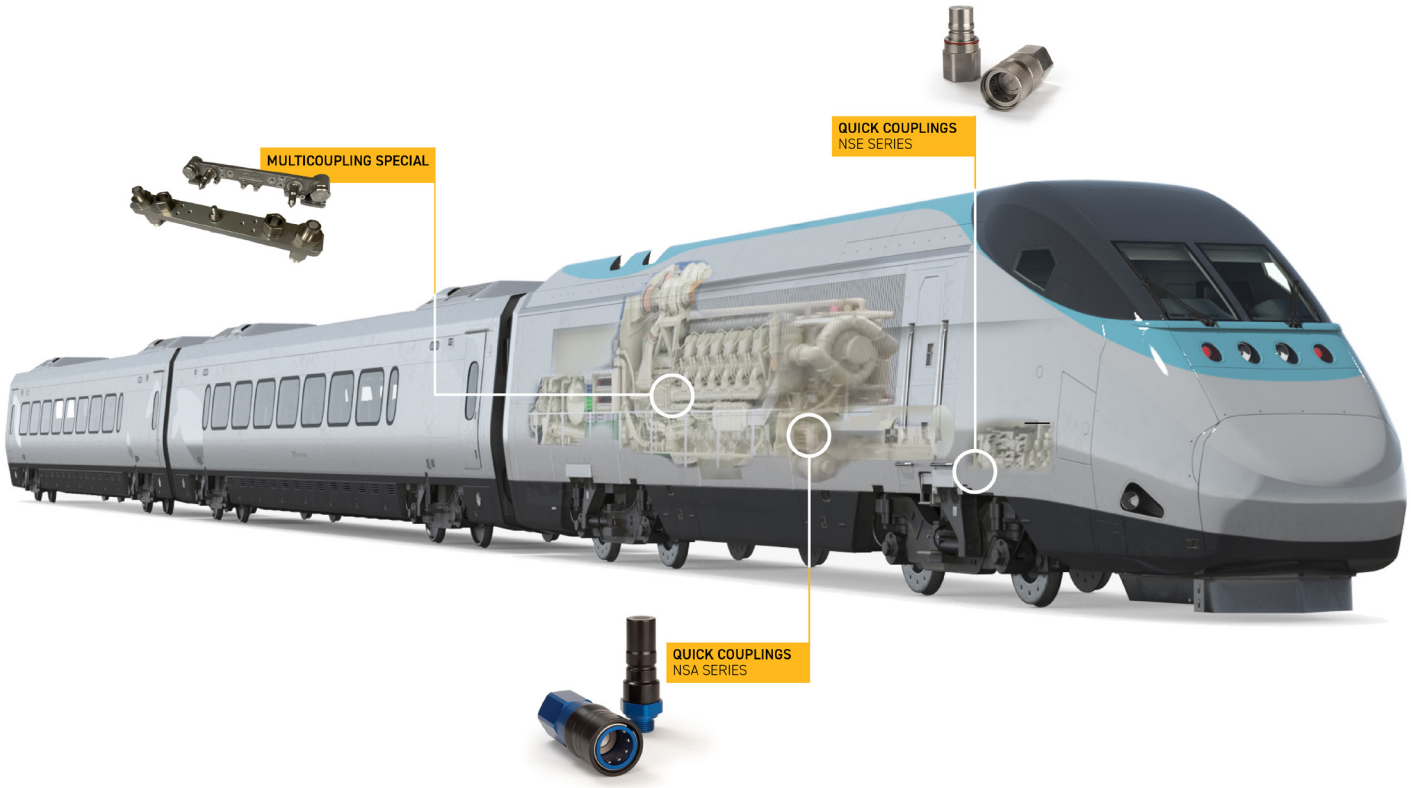
Railway

Transportation

Application Overview

The increased activities linked to the care of the environment pushed the railway market to utilize cleaner energy solutions. Today, trains are already electrically powered, using the grid, and even on board batteries. The converters, engines and batteries need cooling in order to keep efficiency within the power system.

Click the images below for additional information.



Innovative Products for Railway

The use of electrical energy on trains is not new and is build just like other electrically powered system, which use a source of energy (grid or batteries), power conversion systems and an engine.

Lithium-ion batteries are electrochemical energy storage devices highly sensitive to temperature. The indirect water-cooling method seems to be the most efficient considering parameters such as costs, complexity, weight, cooling effects, temperature uniformity, and parasitic power.

The power conversion system is an electrical device used to alter the voltage and frequency of incoming alternating current in an electrical system. The same type of indirect water-cooling system is used to maintain the system at the most efficient temperature.

The traction system on certain trains can also require cooling and water cooling is the easiest and more efficient solution.

Customer Challenges

There is a demand for lighter weight, higher power, greater fuel efficiency and more electronics in transportation applications. Parker's active and passive heat-dissipating and heat spreading technologies can be used to provide effective thermal management for rail and train applications.

Rail and train design engineers seek newer, better thermal management technologies to meet these increasingly challenging requirements. Parker has a broad thermal management experience. This can be especially useful as engineers deal with thermal challenges in areas such as energy efficiency, ease of maintenance, reliability and complexity reduction.

Application Differentiators

Parker offers a variety of thermal solutions and technologies for the train and railway market, including:

- Energy efficiency with minimized pressure drop and sealing expertise
- Easy maintenance of modular solutions, interchangeability and Parker worldwide presence
- Reliability as we 100% test products and solutions
- Complexity reduction with a full range of products from one supplier

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