CHARGER | DIESEL-ELECTRIC PASSENGER LOCOMOTIVE

America's passenger rail experience

SIEMENS

Come aboard and discover the locomotive that forges new paths

Ensuring a successful future for your commuter, regional or intercity traffic.

A better tomorrow

The Future Is Coming at Full Speed
How will we leave a better tomorrow for our children? By improving the economy, protecting the environment and making it easier to connect with each other. Enhancing the regional transportation infrastructure and passenger service will strengthen business interaction, provide access to employment opportunities and tourism. Environmentally responsible rail travel will give passengers an efficient and reliable mode for long distance, commuter and intercity transit. These solutions are here today. Siemens Mobility's service-proven high-speed diesel-electric locomotive is ready for the transition and can also address changing markets and new customer service demands. The Charger facilitates a fast and efficient commute, allowing extra time for work or relaxation by not only avoiding traffic congestion but also relieving it. Your investment decisions today will determine your business and customer success tomorrow.

Growing challenges

Travelers Turning to Rail at Record Speed
Passenger rail ridership is at an all-time high. In 2018, Amtrak carried more than 31.7 million passengers, marking the highest annual ridership total since they started operations in 1971. The state corridor routes where some of these new locomotives operate are among services with the highest ridership growth. Improved rail systems move passengers to their destinations faster and in more comfort, bypassing traffic, long trips to the airport and airline delays.

The Charger locomotive better connects our exciting cities, making travel easy, reliable and affordable. Improved transportation increases tourism and commercial development, creating employment opportunities for sites along the rail as well.

Moving ahead

Your Investments Are Backed with Proven Experience
Innovations with a great future potential require one thing above all: extensive experience. The Charger is manufactured in the United States and is based on 130 years of comprehensive global expertise in the development, production and maintenance of rolling stock.

The Charger locomotives are like your business – individual and customizable, yet based on a common platform with customer specific technical solutions and standard energy efficiency features. This keeps you in step with the times and positions you as a sustainable mobility provider.

Protecting your future

A Cleaner, Greener Way to Travel
Reduced traffic congestion and air miles translate into lower levels of pollution and a higher quality of life. Customers across the U.S. rely on the Charger locomotives to lead their clean, efficient and high-performance rail services.

The locomotive is all-round environmentally friendly, thanks to the new diesel engine's lower emissions and reduced noise; regenerative electrical braking; and energy efficient LED lighting throughout.

All locomotive equipment, including the engine, is designed and selected to emit the lowest possible noise for increased passenger comfort in the stations as well as in residential areas.

Siemens Mobility is not only building lower emission transportation solutions but also using renewable energy and sustainable manufacturing processes at our Sacramento, Calif. plant that is powered by 2MW of solar energy, meeting up to 80% of electricity needs.

95% Particulate Matter (PM) reduction
compared to Tier 0 standard

89% Emissions reduction
compared to Tier 0 standard

NOx

Nationwide ridership proves a rising success

- **Illinois:** Ridership on state-supported passenger trains in the Midwest enjoyed a robust growth over the last 10 years.
- **California:** In 2018, ridership reached 6 million passengers annually between the three state supported California routes.
- **Washington:** In 2018, ridership levels reached 802,000 with the new Chargers successfully completing their first year of operations in the Pacific Northwest.
- **Florida:** Brightline is providing a new, fast way to move between major Florida destinations. Ridership is developing positively along the corridor.
- **Maryland:** Aiding commuter services in Maryland on state supported corridors with, on average, 40,000 daily riders.

"These new locomotives help support our mission to provide reliable public transportation to passengers throughout San Diego County. In addition to increased reliability, they will also incorporate new technologies that reduce emissions and will improve air quality in the region.

Bill Horn, NCTD Board Member and County Supervisor for the 5th District

The High-Speed
Diesel-Electric Locomotive

Smart innovation

Lightweight and Fast
The lightweight design of the Charger locomotive is complemented by the Cummins QSK95 diesel engine, rated up to 4,200-horsepower. The Charger is designed to achieve revenue service speeds of 125 mph while saving on fuel costs. The locomotive's optimized lightweight design results in substantial fuel savings over the competition and includes a large 2,200-gallon fuel tank for greater range.

Safety
Siemens Mobility locomotives are the first-in-class to provide a Federal Railroad Administration (FRA)-approved crash energy management (CEM) design with push back couplers and an enhanced crew safety cage. CEM provides crew and passengers significant safety improvement.

Maintenance
The locomotive has been designed with ease of maintenance as a prime factor intended to minimize turnaround times. The modular equipment design allows for flexibility and simplified installation and removal, featuring a maintenance friendly machine room that is open and clutter free, with improved access to wiring and piping.

Smart Technology
The state-of-the-art microprocessor system installed in the locomotive allows for self-diagnosis of all systems. The on-board computer system can notify the engineer, operator and remote site of any maintenance issues and can take self-corrective action to maintain operation of the locomotive and ensure safety. For example, the computer may identify a technical issue and can automatically notify the engineer, and switch to a back-up or redundant system or decrease speed and operational performance if necessary. Maintenance requirements can also be transmitted remotely for better in-service planning and preparation.

Redundancy
This locomotive offers full head-end power inverter redundancy to ensure that heating and cooling systems, lighting and door systems remain in service should one inverter fail. This sophisticated feature keeps passengers safe and comfortable.

Features and benefits

- Sleek and attractive appearance
- Better air quality and lowest emissions in its class result from new engine after-treatment system
- Optimal ergonomics for operators' console
- Advanced monitoring and diagnostics systems, with remote capabilities
- Large operators cab design for greater freedom of movement
- Better fuel burning for increased efficiency
- Standardized platform locomotive, offering high degree of commonality between existing variants
- Lightweight design to achieve revenue service speeds of 125 mph, and reduce impact on infrastructure
- Simplified maintenance for lower life cycle cost
- Strong focus on systems and components standardization, improving reliability
- Safety cage and crash energy management (CEM) system provides better crew and passenger safety

Performance on the move

Offering Tailored Service
Efficiency counts – everywhere in the United States. As an operator, you are completely focused on the business of service and transportation. You not only need easy-to-maintain vehicles, but an expert service partner.

Effective operations require maximum availability, which can only be ensured through service and maintenance, precisely tailored to your needs. Siemens Mobility Customer Services develop maintenance programs that will support all the operations and service plans your business requires. After all, putting great things in motion means having reliable vehicles available – at all times.

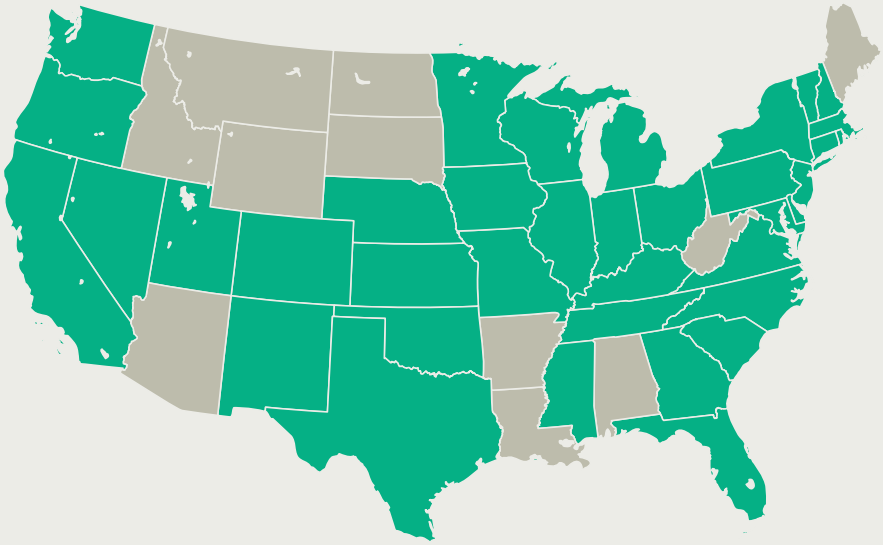
Also, through a unique and comprehensive training program, Siemens Mobility trains new and existing personnel with the skills needed to operate and maintain the new locomotives safely and reliably.

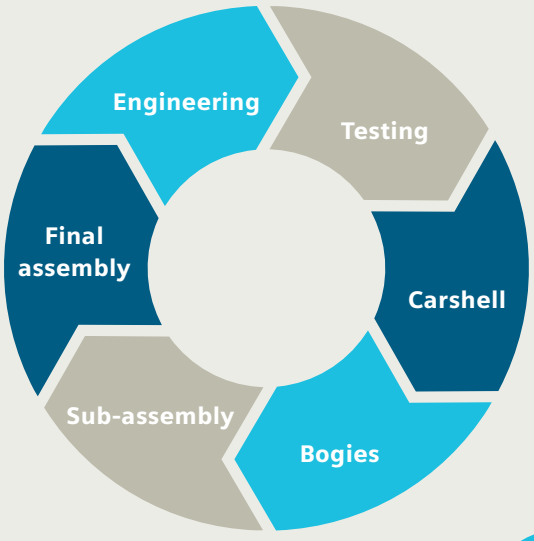
MANUFACTURING IN NORTH AMERICA

Supporting a comprehensive **domestic supply chain**

With an industry-leading U.S. supply chain and dependable delivery, Siemens Mobility offers environmentally friendly, efficient and reliable rail vehicles.

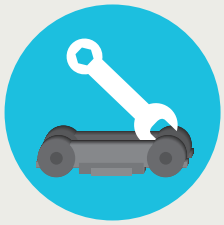
With 201 Siemens Mobility approved sub-suppliers with open orders in more than 34 states, the locomotive supports a comprehensive supply chain that spans across the entire country.





Full-Service Manufacturing Plant
Siemens Mobility has expertise in the areas of urban, commuter and long-distance transportation. The Sacramento full-service manufacturing plant builds rolling stock from start to finish optimizing project management and quality. The current Charger locomotive orders are backlogged until 2029.

Diversity
Drawing skilled employees from a multitude of cultures and backgrounds, more than 2,500 people and over 26 languages spoken at the Sacramento manufacturing plant.



Services to Support the Life of Your Vehicle
From pre-installation to ongoing maintenance, Siemens Mobility Customer Services goes the extra mile to extend and enhance the service life of all rail vehicles.

THE CHARGER DIESEL-ELECTRIC LOCOMOTIVE FLEET

More than 350 locomotives ordered since 2014 from 12 customers

Amtrak

Brightline

Caltrans

Metro-North Railroad

North County Transit District

Ontario Northland

Locomotive Performance and Capacity

Maximum speed	125 mph
Rated power	4,200 hp
Head end power	600 kW / 1,000 kW
Tractive effort (max.)	65,000 lbs / 290 kN
Fuel tank volume	1,800 / 2,200 gal

Dimensions and Weight

Weight	280,000 lbs / 127,006 kg
Clearance	Amtrak D-05-1355

Customers across the U.S. rely on Charger locomotives to power their clean, efficient and high-performance rail services.

exo

Illinois DOT*

Maryland Transit Administration

*Courtesy of Michigan Dept. of Transportation Photo Unit

San Joaquin Regional Rail Commission

VIA Rail Trainsets

Washington State DOT

Charger Locomotive Facts

- Best-selling Tier 4 locomotive – largest base fleet
- Service proven in Tier 4 passenger service
- Lowest fuel consumption
- On-time delivery
- Proven high-quality product, more than 10 million miles
- Access to in-house financing
- U.S.-based production (compliant with Buy America regulations)
- Lowest weight locomotive
- Lowest emissions and noise
- Established customer services
- Low life cycle cost
- High power 16 cylinder Cummins QSK95 engine
- Ergonomic cab design

"We paid for a performance machine and this is a performance machine. This is absolutely the top end of railroading. I would argue this is probably the finest fleet in the world.

Tom Rutkowski, VP of Engineering and Chief Mechanical Officer, Brightline

Siemens Mobility, Inc.
One Penn Plaza
11th Floor, Suite 1100, New York, NY 10119, United States

Contact for information:
Rolling Stock Rail Plant
Sacramento, CA 95828
(916) 681-3000, siemensmobility.us@siemens.com

Printed in the USA

usa.siemens.com/mobility