



GVI GLOBAL VEHICLE INVERTERS

High-performance inverter solutions for
mobile vehicle electrification



WHAT IS AN INVERTER?



What is an inverter?

A mobile inverter is a device that converts DC (direct current) power, typically from a vehicle's battery, into AC (alternating current) power to drive electric motors. Its primary purpose is to control and manage the power flow to the motors in electric and hybrid vehicles, enabling efficient operation across various driving conditions. By precisely regulating motor speed and torque, a mobile inverter ensures optimal performance, energy efficiency, and smooth acceleration in vehicles such as cars, trucks, buses, and heavy machinery.

Overview

As the demand for electrified and hybrid mobile vehicles grows, Parker's Motion Systems Group provides innovative solutions to meet evolving market needs. The GVI (Global Vehicle Inverter) product line offers advanced inverter technology designed to power electric and hybrid drivetrains with industry-leading efficiency and reliability.

From our trusted Generation 1 platforms to the next-generation GVI Series, Parker delivers scalable, rugged, and highly efficient inverters to handle the toughest applications. Whether your project calls for a proven low or high voltage system, or a compact, modular solution with flexible power options, Parker's GVI inverters help bring your electrified vehicle designs to life.

Backed by decades of mobile electrification expertise, Parker's inverters empower OEMs to reduce emissions, increase machine performance, and meet the growing demand for cleaner, more efficient equipment worldwide.

Partner with Parker to advance your mobile electrification journey. Explore the GVI portfolio to find the right inverter solution for your next-generation vehicles.

Contact your Parker representative or visit [Discover.parker.com/Smart-Electrification](https://discover.parker.com/Smart-Electrification) to learn more.



Low Voltage GVI



High Voltage GVI



Generation 2 GVI

GVI GENERATION 1

LOW VOLTAGE MOBILE INVERTERS

The Low Voltage Parker GVI series represents the latest design standards for compact and reliable inverters for mobile applications. Providing a motor control solution for nominal voltage battery systems between 24 and 96VDC.

Parker's Generation 1 Low Voltage Inverter is a trusted solution for a wide range of mobile vehicle applications requiring up to 106VDC. Designed with ruggedness and reliability in mind, these inverters offer proven performance for electric and hybrid-electric drivetrains operating in tough conditions.

The Gen 1 low voltage platform delivers high efficiency and robust power conversion to support traction motors, auxiliary systems, and hydraulic pump functions. Its compact

design allows easy integration into a variety of vehicle architectures, while its field-proven technology ensures smooth operation in demanding mobile applications.

With flexible system compatibility and Parker's advanced control algorithms, this inverter enables optimized vehicle performance, energy efficiency, and reduced emissions. Its reliability makes it a popular choice for industries like Construction, Agricultural, and Material Handling.



GVI GENERATION 1

HIGH VOLTAGE MOBILE INVERTERS

The High Voltage Parker GVI series represents the latest design standards for compact and reliable inverters for mobile applications. Providing a motor control solution for high voltage battery systems between 100 and 750 VDC or 650VDC Nominal.

The Generation 1 High Voltage Inverter from Parker is engineered for high-power, heavy-duty mobile applications requiring up to 750 VDC. Built to handle higher energy demands, it is ideal for large equipment such as mining trucks, forestry machinery, and other off-highway vehicles.

This inverter is designed to maximize power density and system efficiency while maintaining thermal stability under continuous high-load conditions. Its robust housing and durable internal components are built to withstand the

vibration, shock, and environmental challenges typical of severe-duty applications.

Offering seamless integration with electric motors and system controllers, the Gen 1 high voltage inverter helps OEMs meet growing electrification demands. It's a trusted solution to reduce fuel consumption, improve system responsiveness, and enhance overall machine productivity in harsh operating environments.



GVI GENERATION 2

SAFE.

Operational Safety:

Operator, vehicle, system, and device protection

High Voltage Safety:

Ensures safe installation and service

Functional Safety:

Reliable electromechanical control



SMART.

Integrated:

Parker Global Vehicle Motor (GVM) ready with Onboard I/O

Connected:

SAE J1939 and CAN Open enables connecting to other Parker SMART products (IQAN, IoT Gateways, Sensors, Controllers)

Efficient:

High system efficiency and performance (GVI/GVM)

SCALABLE.

Power:

Designed with three power control variations

- GVI075: 75kW
- GVI125: 125kW
- GVI250: 250kW

Control:

With the same control base for the three sizes of Inverters, control can easily be scaled up or down to the correct power size



GVI GENERATION 2

HIGH VOLTAGE MOBILE INVERTERS

Parker's Generation 2 Inverter platform represents the next step forward in mobile vehicle electrification. The GVI Series – available in 75 kW (GVI075), 125 kW (GVI125), and 250 kW (GVI250) variations – is engineered for higher performance, flexibility, and ease of integration across a wide range of electric and hybrid mobile machines.

This second-generation design features enhanced thermal management and single sided interface, making it easier to install even in space-constrained vehicle designs. Its increased performance and system efficiency help OEMs lower total system costs, while maximizing vehicle range and productivity.

The GVI Gen2 delivers scalable power to meet a wide variety of application requirements from smaller utility vehicles and loaders to high-demand heavy-duty machines.

The GVI platform supports advanced control strategies, enabling smoother machine operation, greater precision, and improved energy recovery during operation.

With CAN-based communication and Parker's latest software tools, the GVI Series simplifies development and commissioning. Designed for next-generation mobile electrification, the GVI platform empowers OEMs to build cleaner, more efficient machines ready to meet tomorrow's challenges.



GVI075 (75kW)



GVI125 (125kW)



GVI250 (250kW)



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