



## Electromechanical & IoT Product Line

Motion Systems Group

Solutions for construction machinery

aerospace  
climate control  
electromechanical  
filtration  
fluid & gas handling  
hydraulics  
pneumatics  
process control  
sealing & shielding



ENGINEERING YOUR SUCCESS.



# Motion & Control Devices for the next generation construction machinery

Parker's extensive knowledge of the construction industry help to shape integrated products and services that simplify installation and equipment service, reduce noise and drive performance. Doing so enables OEM to improve energy efficiency, commissioning costs, circuit simplification with electronics devices, life cycle cost and reduce maintenance costs through predictive maintenance.

Cylinder / Actuators for mobile applications



Single Stage Cylinders

Global Vehicle Inverter for mobile applications



GVI inverter

Permanent Magnet Motors and Generators



GVM motors

HMI Display Module



Touchscreen PRO displays

IP cameras



IQAN-SV Vision System Camera

Application Software Toolkit



IQAN Develop

IQAN Electronic Modules



IQAN devices family

System Gateway Module



PVSG Gateway

Sensors



Parker mobile sensors kits

Steer by wire system



SBW 110 valve

Electro-hydraulic pumps




Electro-Hydraulic Pump Kits (EHP)





# Dedicated solutions for both hybrid and full electric machines

Whether it is a tower cranes or a material handling, a loader or a telehandler, Parker has the products for all your applications. With over 500,000 electrotechnical, hydraulic and pneumatic parts, and thanks to our worldwide distribution, we can be considered as the primary source supplier for the motion & control technology of the next generation of construction machines.

<b>Steer-By-Wire</b>	
	<b>SBW 110</b>
<b>Description</b>	SBW110 is a proportional, load sensing, pre-compensated mobile valve
<b>Pressure pump connection</b>	Max 320 bar
<b>Pressure work ports</b>	Max 350 bar
<b>Valve response time</b>	Approx. 65 ms @ viscosity 15 cSt
<b>Flow</b>	100 L/min
<b>Total P-T leakage</b>	Max 3,2 ml/min @ 100 bar

**Steer-by-Wire**

In the long term, self-driving machines are an industry goal, but in the near-term, steer-by-wire is the clear trend.

Steer-by-wire removes the need for heavy, complex steering columns. Parker's SBW110 proportional, load sensing, pre-compensated mobile valve optimizes steer-by-wire systems deployed on mobile machinery.

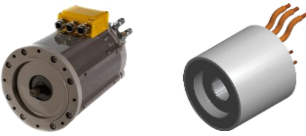
This means easier installation and reduced noise levels for the driver, making the cab a safer, more ergonomic place to work. By simply using a pump oil supply, tank connection and electric signal, the flow from the SBW110 valve work ports is able to control the steering function. The valve is characterized by class-leading performance for robustness, control precision and energy efficiency.

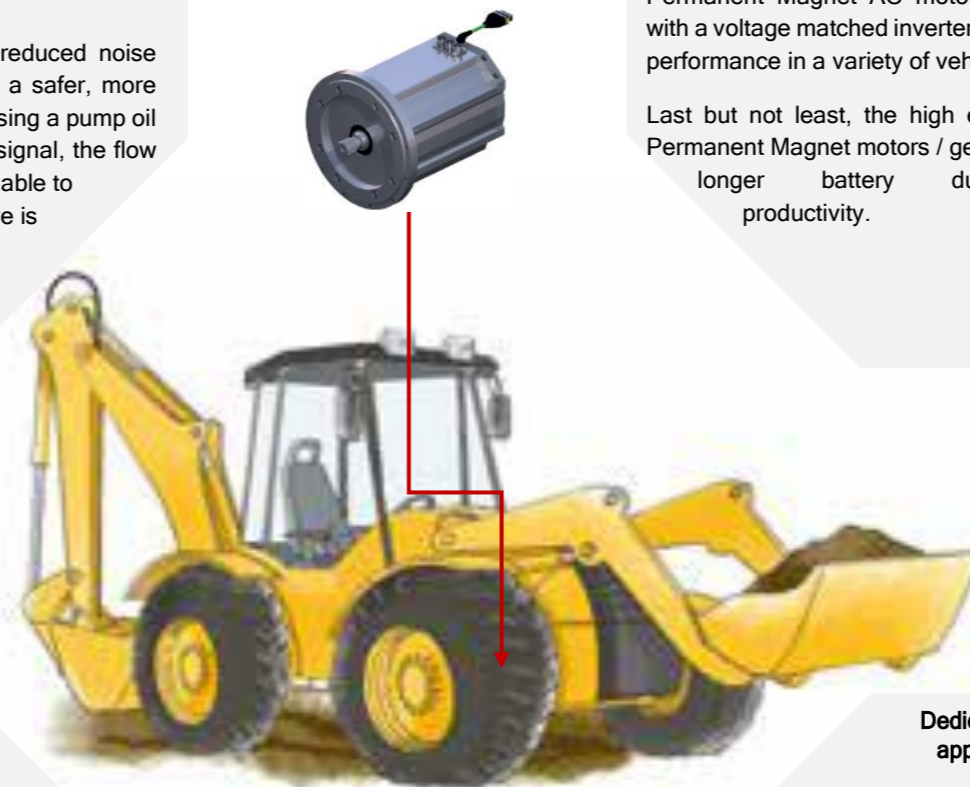
**Efficient solution for hybrid and full electric propulsion systems**


The engine is the heart of the traction system and, both in case of hybrid or fully electric propulsion, the efficient Parker **GVM/GVK** series allows customer an energy storage device size reduction leading to cleaner and more economic vehicles.

The torque density and speed capabilities of Parker Permanent Magnet AC motors (PMAC), combined with a voltage matched inverter, provide breakthrough performance in a variety of vehicle platforms.

Last but not least, the high efficiency of the GVM Permanent Magnet motors / generators results in a longer battery duration, increasing productivity.

<b>Motor and Generator Type</b>	 <b>GVM / GVK</b>
<b>Design</b>	Standard and frameless kit
<b>Magnet materials</b>	Rare earth magnets
<b>Number of poles</b>	12
<b>Battery voltage</b>	24 to 800 VDC
<b>Power range</b>	up to 350 kW (continuous)
<b>Torque range</b>	up to 1430 Nm (peak)
<b>Speed range</b>	up to 10.200 rpm



<b>Electro-Hydraulic Pump Type</b>	
	<b>Electro-Hydraulic Pump Kits</b>
<b>Description</b>	Electro-Hydraulic Pump kits designed for hybrid electric and all electric mobile applications
<b>Electric motor</b>	GVM synchronous motor (PMAC)
<b>Hydraulic pump</b>	Vane pump (other types on request)
<b>Input voltage</b>	24 to 800 VDC
<b>Output power</b>	2 to 145 kW (hydraulic power)
<b>Flow / Pressure</b>	up to 300 lpm / 300 bar

**Electro-Hydraulic Pump kit**

The Electro-Hydraulic Pump (EHP) kits are designed to simplify hydraulic power availability in all hybrid and electric mobile applications (e.g.: electric power steering systems and auxiliary hydraulic systems).

EHP systems consist of an electric motor directly coupled to a hydraulic pump controlled by the high performance mobile GVI hardened drive.

Product benefits:

- Complete pre-engineered Electro-Hydraulic Pump solutions
- Easy product selection through pressure, flow and voltage values
- Reduced fuel consumption and emissions
- Instantly available hydraulic power thanks to the low inertia of components
- Quiet operations


**Dedicated inverter for mobile applications**

Global Vehicle Inverter (GVI) for mobile applications provides a motor control solution for battery systems up to 650V (nominal).

**GVI inverter** range aims to provide the highest efficiency in combination with the Parker GVM range of PMAC mobile motors while maintaining superior reliability in the most demanding applications.

Product features:

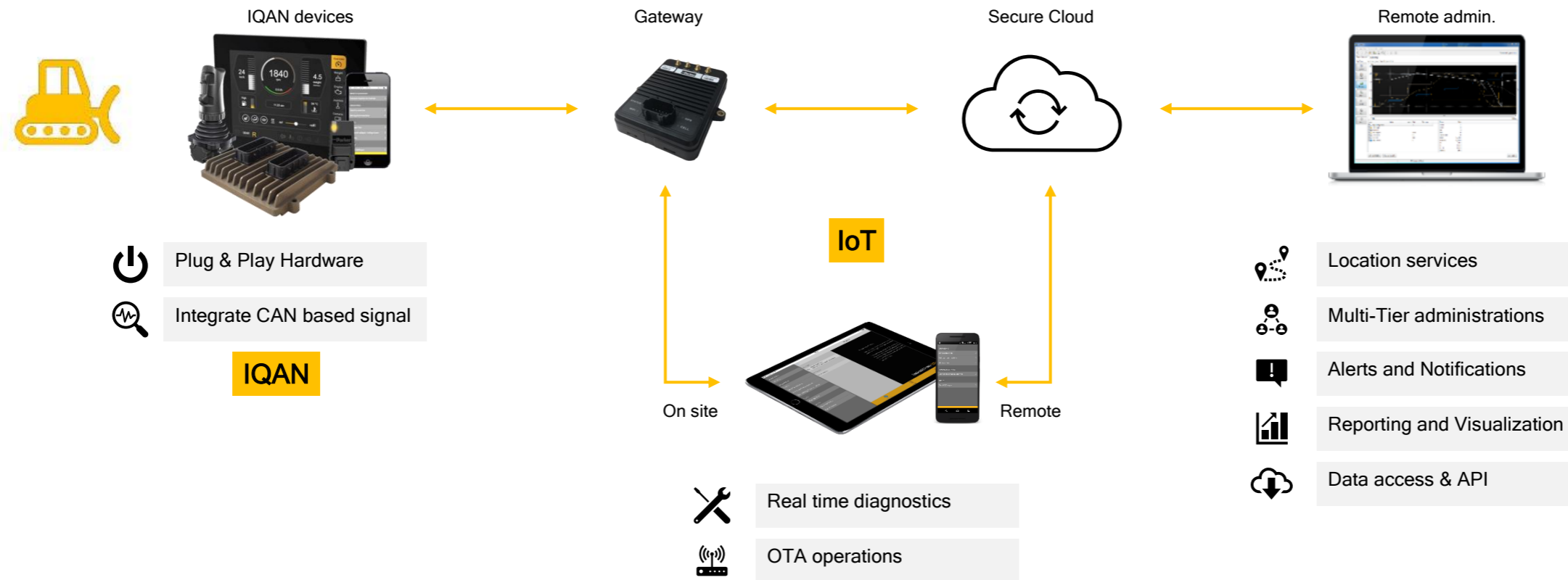
- Auto tuning
- High efficiency cold plate design
- up to IP6K9k protection class
- Motor temperature sensor input
- Sin/Cos and Resolver
- iQAN, J1939 and CanOpen communication protocols

<b>Inverter Type</b>	 <b>GVI</b>
<b>Description</b>	Mobile Inverters designed for Traction, Electro Hydraulic Pumps (EHP) and Auxiliary Systems
<b>Battery voltage</b>	24 to 650 VDC
<b>Peak current</b>	700 Arms
<b>Peak power</b>	400 kVA
<b>Switching freq.</b>	4, 8, 12, 16 kHz
<b>Communications</b>	CAN J1939, CAN Open



# Electronic Controls for environmentally friendly productivity

Parker IoT (Internet of Things) is a digital ecosystem that enables Parker's smart hydraulic, electric and electronic products to easily connect and work together. Dedicated cloud service tools enable customers to remotely control the machine, update the software and configure alerts and alarms for an accurate preventive maintenance of the system. With Parker's IoT, the end user will be able to improve the efficiency while respecting the environment.

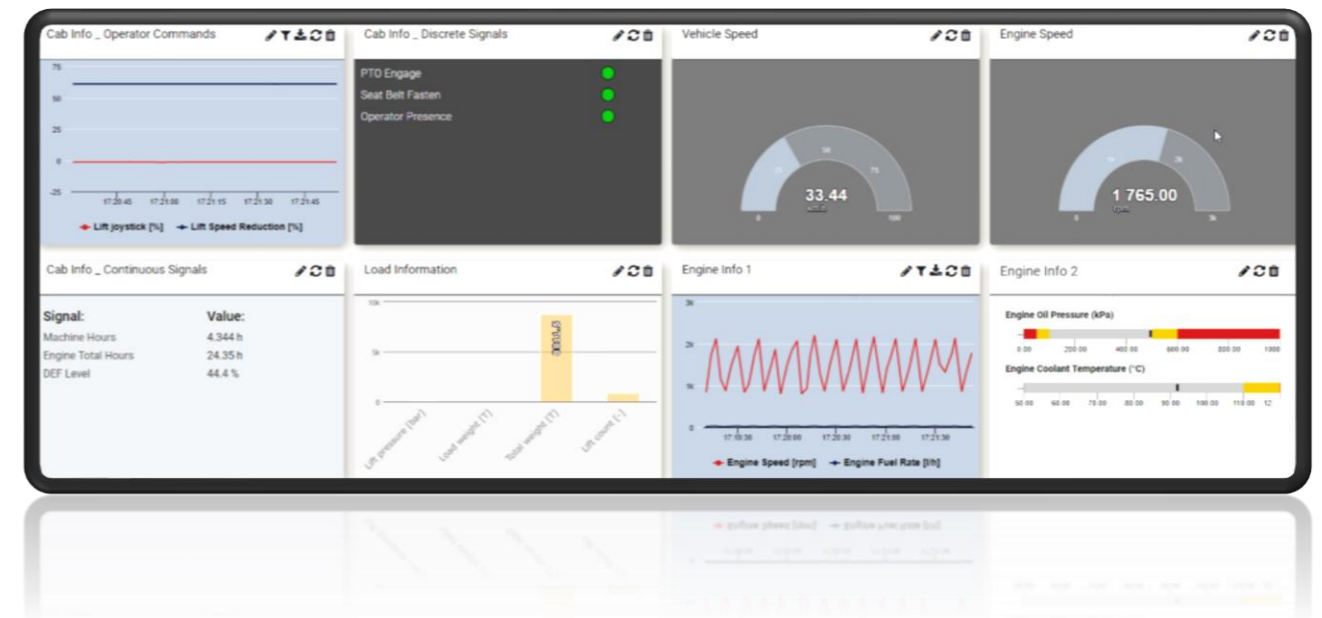


Mobile IoT is the state of the art of electro-hydraulic monitoring cloud-based solution specifically designed to provide sophisticated data, monitoring and performance control capabilities.

Mobile IoT makes it easy for off-road equipment OEMs and fleet managers to collect and analyze data to identify usage trends and field-based problems with unparalleled intellectual design and operational insight. We are taking telematics and simple location tracking to remote diagnostics and programming.

Most off-road equipment manufacturers or fleet managers have connected equipment with built-in telematics sensors, however, IoT solutions take it a step further with customized data to show recommendations to business operations on how to maximize performance and longevity.

In addition to the features of a traditional telematics solution and data insights, IoT solutions for heavy equipment offer remote diagnostics and programming, automated reports and frequency and duration use.



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