HYDRAULIC INNOVATIONS

eReady pumps

Parker

eReady

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WHERE ENERGY MEETS MOVEMENT

Electrification has a key role to play in our carbon free future, and no one understands more about its diverse possibilities than Parker. Our breadth of experience and capability places us at the heart of the transition to electric. Discover how Parker can help on your electrification journey.

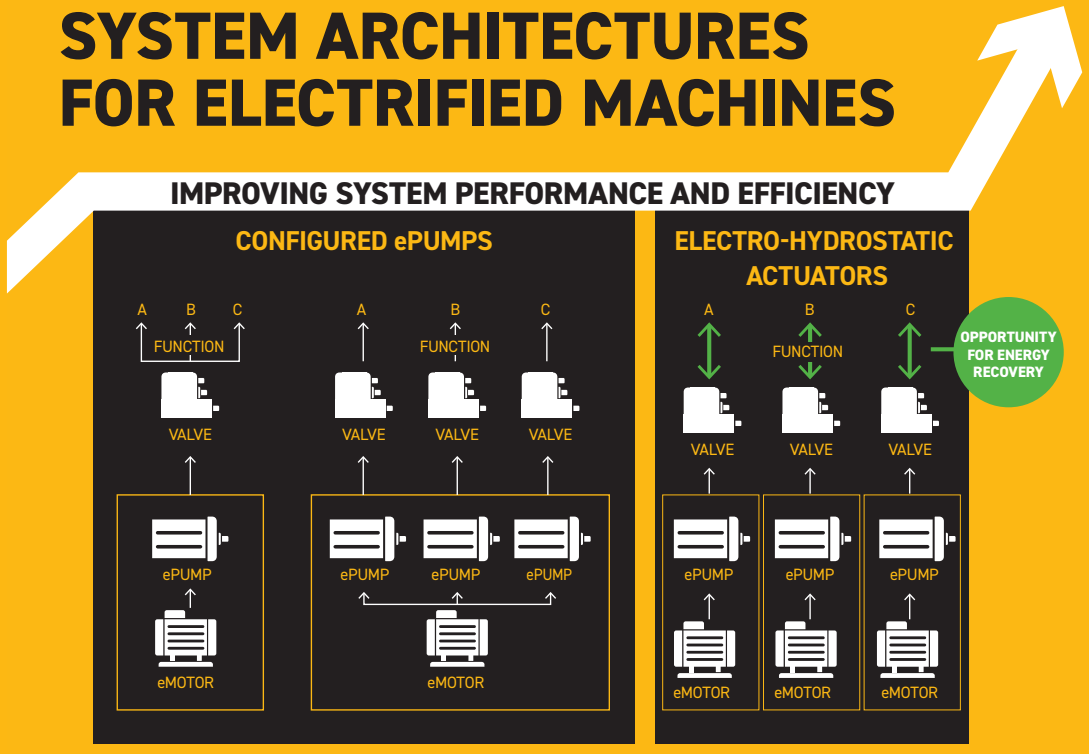
Introducing Electrification

The dynamic and exciting world of electrification holds the potential to create a cleaner tomorrow for all. Parker's breadth of experience and capability that places it at the heart of that electric story. This concept brings that possibility to life for our prospects, conveying the potential of Parker's partnership to shape a positive electric future.

Whether for industrial machinery or mobile equipment, design engineers carefully consider system technology choices. Hydraulics, with their high power density, large force output and ease to actualize linear motion, are commonly found in both industrial and mobile machinery. Enter the shift to renewable energy and new technologies related to high-pressure hydraulic systems. Electrohydraulic pumps are one example of components that can be up to 80% more efficient than traditional hydraulic pumps.

eReady pumps represent a shift towards more modern, efficient, and environmentally friendly hydraulic systems that are compatible with electric drives and advanced control technologies. Designed to work seamlessly with modern electric systems, including hybrid or fully electric vehicles.

SYSTEM ARCHITECTURES FOR ELECTRIFIED MACHINES



APPLICATIONS

Street sweepers

Electro-Hydraulic systems and circuits

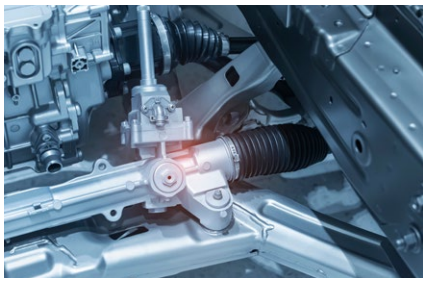
Refuse trucks

Agricultural equipments

Construction

Buses and Coaches

Vocational vehicles with ePTO



Electrohydraulic power steering

Material handling

Vision

Engineering Your Success

Safety

Zero safety Incident

Ethics

Whether we are interacting with customers, our partners, or each other, Parker operates in a manner that is respectful, ethical, and guided by character.

Sustainability

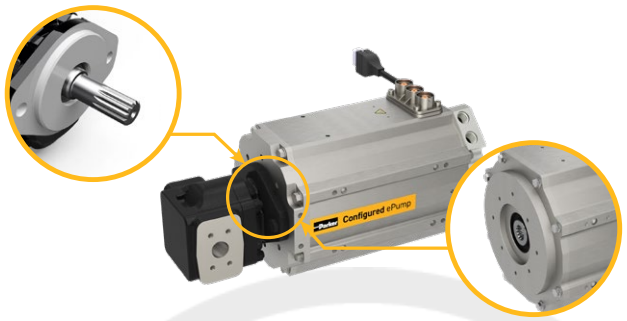
Parker's interconnected portfolio of technologies make the world cleaner, smarter and safer.

BENEFITS

Optimised for use in electrification applications

eReady

- Low noise optimization
- Low rpm performance and capabilities
- High speed performance, optimized suction and port plate timing
- results in high efficiency over speed and pressure range
- Suitable for dynamic operation (speed changes) in electrification
- Reduced energy consumption and emissions through flow on demand.
- Longer runtime due to higher, overall efficiency.
- Highly reliable components (inverters, motors, and pumps that are perfectly matched without the need for extra adaptors) providing greater assurance
- Direct mounting to electric motor, spline lubrication options (With GVM motor: Maintenance free)



- Also available in a wide range of motor/pump combinations adaptative to every battery pack providing greater flexibility.

Performance

Efficiency, pressure & speed, Energy recovery (4—quadrant operation)

Quality

Runtime, reliability & durability

Total cost of ownership

less maintenance & downtime

On-time delivery

Short lead time, just in time with right amount

PARKER PUMP PORTFOLIO

Parker Hannifin is proud to introduce a selection of hydraulic pumps especially dedicated to variable speed drive applications. The unique technology of theses hydraulic pumps is allowing a wide range of operating speeds, to take the maximum benefits of modern power transmissions. When driven with asynchronous or synchronous electric motors and piloted by frequency controllers, they operate in the most efficient and reliable ways, allowing maximum energy savings.

Parker ePump solutions are backed up by comprehensive testing at our global engineering and manufacturing facilities, ensuring pressure and flow performance at the highest levels of system efficiency.

Fixed Displacement Pump Series

Fixed displacement pumps with a variable speed motor offer the lowest cost option for the required flow. Parker's fixed displacement range offers a wide variety of specifications and provides the highest efficiency with our bent axis pump, the lowest noise level with our vane pump, and the cost-effectiveness of our gear technology.

	Bent Axis	Truck pump	Vane	External Gear
Product Series	F10, F11, F12	F1, F2	T7	PGP
Displacement Range (cc/rev)	4.9 to 90	25.6 to 102.9	5.8 to 227	8 to 41
Max Operating Pressure * (bar)	350 to 450	350 to 400	300 to 320	170 to 300
Max operating Speed * (RPM)	1500 to 5000	2100 to 3050	to 3600 (speed range)	2300 to 4000
Min Operating Speed * (RPM)	50	50	150 to 220	100*

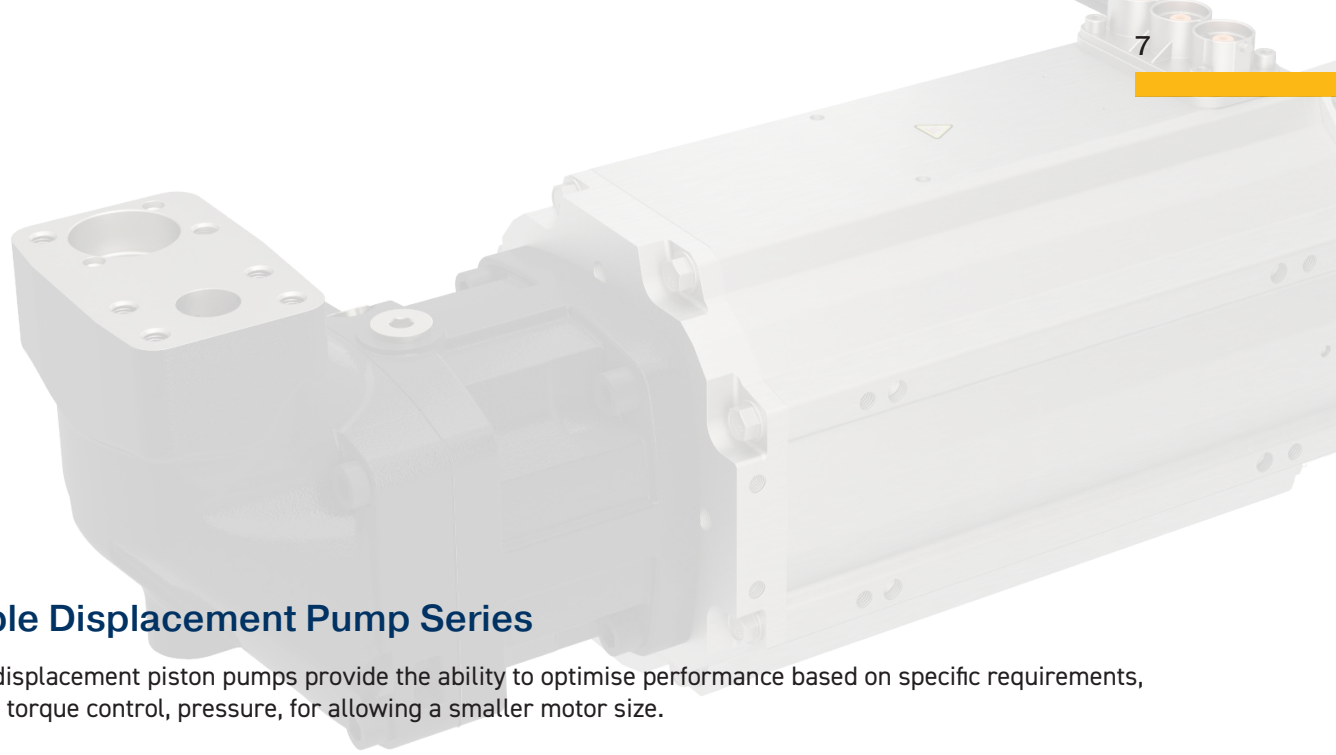
* Size & pressure dependent

Bent Axis Piston Pump
F10, F11, F12

Bent Axis Piston Pump
F1, F2

External Gear Pump
PGP

Vane Pump
T7



Variable Displacement Pump Series

Variable displacement piston pumps provide the ability to optimise performance based on specific requirements, including, torque control, pressure, for allowing a smaller motor size.

	Axial Piston	Axial Piston	Axial Piston	Axial Piston
Product Series	P1M	P2/P3	VP1	PV+
Displacement Range (cc/rev)	18 to 105	60 to 145	45 to 130	16 to 46
Max Operating Pressure * (bar)	250 to 280	320 to 350	350 to 400	350
Max operating Speed * (RPM)	2700 to 3300	2200 to 2800	2100 to 3000	2800 to 3000
Min Operating Speed * (RPM)	100	500	500	50

* Size & pressure dependent

Axial Piston Pump
P1M

Axial Piston Pump
P2, P3

Axial Piston Pump
VP1

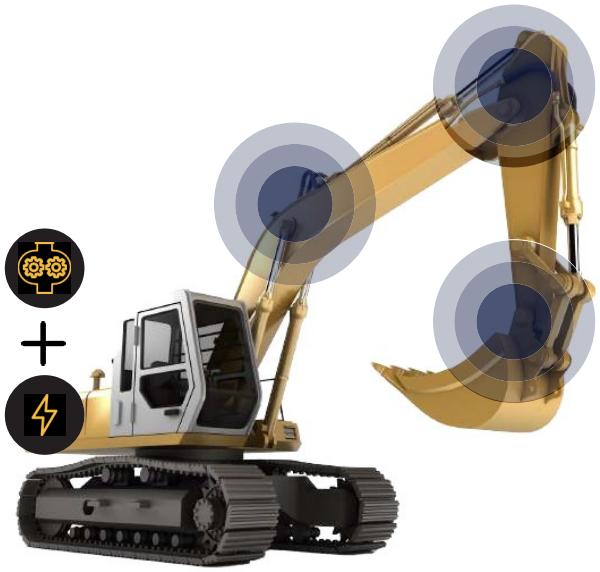
Axial Piston Pump
PV+

CHOOSING THE RIGHT HYDRAULIC PUMP

The hydraulic pump is a vital component that generates the necessary flow to power and control hydraulic functions within a system. Deciding the optimal pump in the system will be dependent on the system architecture and additional application requirements.

Depending on the application, a migration to an EHP system can provide a variety of architecture options – from a single pump for all work funtions to de-coupling the traction and work circuit, to a fully decentralized system with multiple pumps and EHPs. Depending on the application, unique architecture types can drive better energy input, more efficient outputs, greater control and fewer losses across the entire system.

ELECTRIC CENTRALIZED



VS

DECENTRALIZED

Fixed pump:

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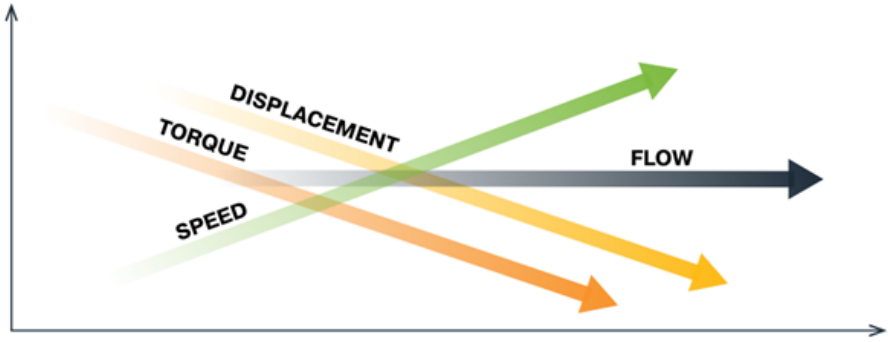
Variable pump:

Variable displacement piston pumps provide the ability to optimise performance based on specific requirements, including, torque control, pressure, for allowing a smaller motor size.



Whether your application requires advanced hydraulic pump control, generator function or traction control for mobile machinery, Parker's eReady pumps are designed to work together in different systems to optimize machine performance and ease of use.

The main benefits with Parker´s eReady pumps are closely tied to performance, cost savings, and adaptability in a broad spectrum of applications. They provide precise control and optimal performance at both high and low speeds, suitable for various applications. High efficiency reduces energy consumption, while a wide speed range allows for operation at the most energy-efficient speeds, leading to significant cost savings. Lower energy use and precise speed control minimize wear and tear, extending equipment life and lowering maintenance expenses. These units can be adapted to a wide array of tasks, making them a flexible solution for different operational requirements.

Parker´s eReady pumps are developed to reduce pressure pulsation which reduces the noise level in hydraulic systems. Pressure pulsations in hydraulic systems can lead to vibrations as the fluctuating pressures cause components to move or oscillate. By reducing these pulsations, the source of vibration is minimized, which in turn reduces the noise generated by vibrating components or the structure to which they are attached. The pressure pulsations themselves can be a direct source of noise, as rapid changes in pressure can lead to fluctuations in fluid density and velocity, creating sound waves. Reducing these pulsations directly lowers the intensity of sound waves generated within the system.

Parker´s
eReady pumps
are developed
to **reduce**
pressure pulsation
which reduces
the **noise level**
in hydraulic systems.

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