



Eaton's Pump and
Motor Products

Char-Lynn® Motors
Eaton® Pumps and Motors

Hydrokraft® Pumps and Motors
Vickers® Pumps and Motors

Powering Business Worldwide

EATON

Powering Business Worldwide

Char-Lynn Motors

With decades of proven reliability and performance, Char-Lynn low-speed, high-torque hydraulic motors help you build a reputation for dependability. Our motors are designed and manufactured (speeds up to 2000 rpm and from 270-192,410 Nm [200-142,000 lb-in] of torque) to exceed the demanding requirements of the mobile and industrial industries.

Known throughout the industry for being a fast and flexible supplier, Eaton produces Char-Lynn spool valve, disc-valve and high-performance motors for original equipment manufacturers (OEMs) and distributors.



Features and Benefits

Spool Valve Motors

- Broad range of application specific solutions and options
- Industry-leading motor life with very high performance

Valve-In-Star™ (VIS) Motors

- High torque output in a small package for tight mobile applications
- Uses patented Valve-In-Star (VIS) technology for superior efficiencies at high pressure

Disc Valve Motors

- World's most complete range of low speed high torque motors
- Many options and features to fit the specific needs of your applications

ME Series Motors

- Industry leading motor life; built to withstand thermal shock
- High efficiencies and starting torque; smooth rotation at extremely low speeds

Optional Feature	Benefit
2 Speed Motors	Allows motor to have two displacements (higher speed has lower torque)
Seal Guard	Prevents physical damage to shaft seal from foreign debris
High pressure Shaft Seal	More robust shaft seal that can withstand high case pressure spikes
Environmental Protection	Epoxy coating for demanding application in harsh environment
Integrated Parking Brake	Spring applied hydraulic release brake
Mechanical Disc Brake	Bolt on caliper brake for wheel motor applications
Free Running Option	Improved mechanical efficiency at high-speed / high-flow conditions
Speed Sensors	To collect speed and / or direction information from a motor and provide electric signal

Optional Feature	Benefit
Shuttle Valve	Redirects a portion of low pressure oil for increased cooling in closed loop applications
Case Port	To increase lubrication and flushing of the motor and reduce case pressure, extend seal life
Internal Check Valves	Relieves the case pressure to the low pressure port
Low Speed Valving	For better efficiency and smooth running at low speed conditions (<200 RPM)
Vented Two-Stage Seal	Extends shaft seal life
Viton Seals	For higher temp. Or chemical resistance applications
Integral Cross Over Valving	Cost effective design that limits the differential pressure across the motor
Metric Shafts, Ports, & Mounts	EU specific threads
Reverse Rotation	Allows clockwise shaft rotation with B port pressurized



Char-Lynn Motors



Spool Valve Motors

Spool valve motors transmit high torque at low speeds by means of a cylindrical valve and a geroter or Geroler®, special drive members that turn the output shaft.

Options include a variety of output shafts: straight with Woodruff key, splined, tapered or straight with cross holes; plus other mountings, displacements and ports.

Specifications

Speed Range: Up to 2000 rpm
Torque Range: Up to 565 Nm (5000 lb-in)



Valve-In-Star (VIS) Motors

High performance VIS 30, 40 and 45 motors deliver high torque in a compact envelope.

Patented design reduces leakage by incorporating a flexible, pressure-balanced wear plate.

Specifications

Speed Range: Up to 500 rpm
Torque Range: Up to 5085 Nm (45,000 lb-in)



Disc Valve Motors

Disc valve hydraulic motors are designed with a flat, disc-shaped valving system. They use Geroler exclusively, are effective at very low speeds, and are reversible.

Options include a wide variety of shafts, mountings, ports, displacements, speed sensors and bolt-on valves. Two-speed models are available in Series 2000 and 10000.

Specifications

Speed Range: Up to 900 rpm
Torque Range: Up to 3390 Nm (30,000 lb-in)



ME Series Motors

These double swash plate, opposed-piston, low-speed, high-torque hydraulic motors operate smoothly at low speed within the maximum ratings and cause very little torque ripple.

Specifications

Speed Range: Up to 1000 rpm
Pressure Range: 248 and 276 bar (3600 and 4000 psi)
Torque Range: Up to 16136 Nm (11,900 lb-ft)



Vickers Vane Pumps and Motors

Eaton's Vickers products are known for high efficiency fixed pumps with low noise. These products have been optimized for both mobile and industrial markets. Their modular designs allow for flexibility in displacement, mounting, and port options. A cartridge kit design feature allows for easy repair and interchangeability between pumps.

Other manufacturers may produce pumps that look like Eaton's Vickers products; that's intentional. But none of them can match their endurance, reliability, warranty or performance.



Features and Benefits:

V10/V20 Series

- Low displacement/lower pressure
- Compact and economical for both mobile and industrial applications
- Integral valve options help reduce size and cost
- Balanced pressure-induced radial loads leads to longer bearing life
- Efficient design produces extra horsepower for your investment

V/VQ Series

- Medium to high displacement with double / triple pumps and medium pressures
- Industrial (V series) and Mobile (VQ) applications
- Cartridge kit design for ease of repair
- The industry standard
- Cold start capability

VMQ Series

- Highest potential displacements and pressures in portfolio
- Mobile and industrial applications
- Cold start capability
- Cartridge kit design for ease of repair

Vane Motors

- Economical alternative to piston technology for medium to low pressure industrial applications
- Noise and efficiency benefits over gear motors displacement products
- Heavy duty bearings



Vickers Vane Pumps and Motors



V10/V20

Time proven dependable, durable, quiet and most economical vane pumps. They are the premium fixed pump choice as the main system pumps for small industrial and mobile equipment or as pilot and auxiliary pumps for complex systems.

Specifications

- Speeds 2400-4800 (size dependent)
- Pressures up to 172 bar (2500 psi) (size dependent)
- Displacements:
V10: 3-23 cm³/(0.18-1.40 in³/r)
V20: 23-41 cm³/(1.40-2.5 in³/r)
- Double pump capable



V/VQ Series

The V series vane pumps are the pioneers of cartridge-design vane pumps. They are well known for long operating life, outstanding efficiency, flexible configuration and easy serviceability.

Specifications

- Speeds: 1800 for V, up to 2700 for VQ
- Pressures up to 210 bar (3000 psi) (size/type dependent)
- Four frame sizes (20, 25, 35, and 45)
- Displacements range from 7 to 193 cm³/(0.4-12 in³/r)
- Single, double, and thru-drive pumps



VMQ Series

The VMQ series of vane pumps is the pump that can do it all. Used in both mobile and industrial applications, the VMQ is designed for the highest pressure and displacement systems.

Specifications

- Speeds up to 3000 rpm
- Pressures up to 293 bar (4200 psi) (size dependent)
- Three frame sizes (25, 35, and 45)
- Displacements range from 10 to 268 cm³/(0.61-16.3 in³/r)
- Single, double, triple, and thru-drive pumps



Vane Motors

The M2U, M2-210 and M vane motor series are standards in the industry. The proven reliability and the available cartridge kit designs make for uptime easy serviceability.

Specifications

- Speeds up to 3600 rpm
- Pressures up to 155 bar (2300 psi) (size dependent)
- Four frame sizes (25, 35, 45, and 50)
- Torque range: 118-850 Nm (1050 to 7500 lb-in)
- Heavy duty shaft bearing available



Eaton Gear Products

Eaton's Series 26 & L2 products are small in package size and length, a variety of options and configurations are available and have reliable performance in the field. Eaton Global Gear Products are high efficiency, high performance and are extremely quiet.

The size and shape of the wave created in a gear pump depends on the way the gears fit together. By refining the fit of teeth between gears, Eaton has reduced the size of the wave. That reduces vibration and airborne noise.

Gear pumps are used in drive trains, hydrostatic transmissions, open and closed circuit piston applications, and charge pump applications. These products are integral to most construction, agriculture, lift trucks, fork trucks, bus, and material handling equipment.

When you specify a gear pump, look for more than output. For high performance with reduced vibration and noise, choose gear pumps from Eaton.

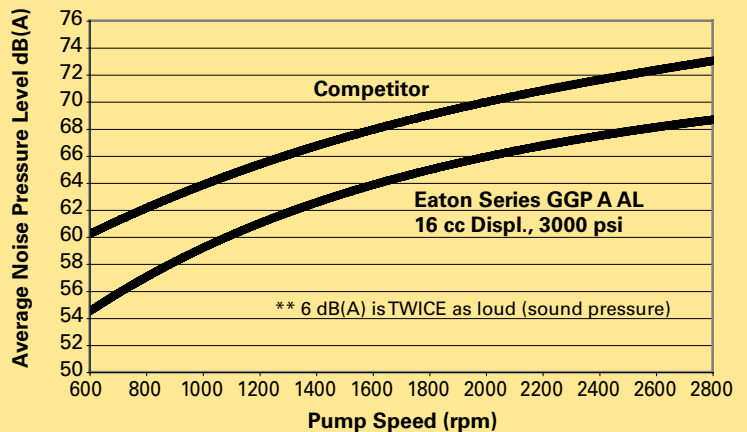


Features and Benefits:

- Continuous operating pressures to 4000 psi
- SAE, DIN, & ISO flange, shaft and porting styles
- High efficiency gear profiles
- 12 & 13 tooth low noise and pressure ripple gear design
- Meets ISO 9001 standards
- Single and multiple section pump options
- Options for applications requiring separate fluids or reservoirs
- Broad range of shaft and port options
- Common and separate inlet options
- Relief valve and priority control valve options
- Auxiliary mounting capabilities
- Field reversability

Low Noise Pressure Chart

Measured in a low noise room to ISO 4412, part 1. Distance of noise sensor to pump = 1 m (3.2 ft.), ISO32 fluid @ 48C (120F)



Eaton Gear Products



S26 Pumps

SAE A mount aluminum pumps with many shaft and porting options. Meets SAE and metric standards. Single and multiple sections available. Optional integral relief and flow valves simplify system design and installation. Easy field reversability.

Specifications

Displacements from .4 cid [6,6 cc] to 30,6 cm³/r (1.87 in³/r)
Speed Range (max.): 3000–3600 rpm
Rated Pressures: to 207 bar [3000 psi]; intermittent to 241 bar [3500 psi]



S26 Motors

SAE A mount aluminum bi-directional motors in a wide range of shaft and porting options, meeting SAE and metric standards. Optional integral relief and cross-over valves simplify system design and installation.

Specifications

Displacements from .43 cid [7,1 cc] to 31,8 cm³/r (1.94 in³/r)
Speed Range (max.): 3000-4000 rpm
Rated Pressures: to 207 bar [3000 psi]; intermittent to 241 bar [3500 psi]



L2 Pumps

SAE B mount aluminum pumps with many shaft and porting options, meeting SAE and metric standards. Single and multiple section options. Optional integral relief and flow valves simplify system design and installation.

Specifications

Displacements from 1.3 cid [21,3 cc] to 55,2 cm³/r (3.37 in³/r)
Speed Range (max.): 2250-3500 rpm
Rated Pressures: to 248 bar [3600 psi]; intermittent to 276 bar [4000 psi]



GGP A-Aluminum Pumps

SAE A mount aluminum pumps with a range of shaft and porting options, meeting SAE and metric standards. Single and multiple section options. Optional integral relief and flow valves simplify system design and installation. Permits easy field reversability.

Specifications

Displacements from .32 in³/r [5,3 cc] to 33,4 cm³/r (2.04 in³/r)
Speed Range (max.): 2100-4000 rpm
Rated Pressures: to 276 bar [4000 psi]; intermittent to 305 bar [4400 psi]

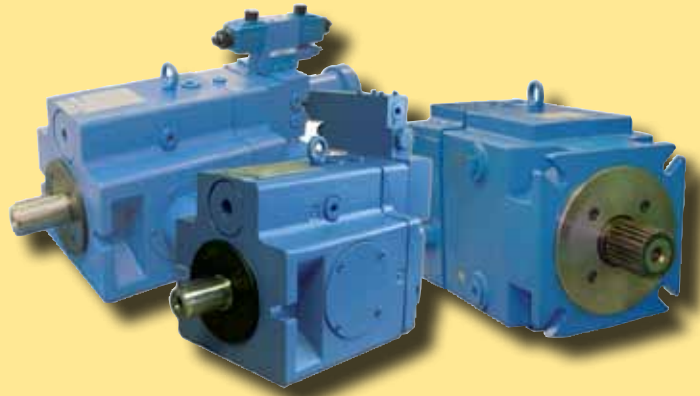


Hydrokraft Pumps and Motors

Eaton offers robust and reliable Hydrokraft high-pressure industrial open and closed circuit piston pumps and motors. The axial piston pumps feature cradle-type swash plate designs that provide reliable operation as well as long life.

Hydrokraft pumps are built with a through drive, which enables multiple pump installation from a single shaft. Multiple pump combinations are also available from the factory. These products are built for closed circuit applications with integrated valves and filters; an entire closed circuit system is available in one package.

For highly efficient system control, Hydrokraft pumps have wide range of control options, for variable displacement pumps, including mechanically, hydraulically and electrically controlled types. Multiple controls can be merged with variable displacement units, from a simple mechanical hand-wheel to electronic proportional control, including controller cards and associated software.



Features and Benefits:

- Many control options, allow matching of pumps to any application
- Automatic pressure balancing of cylinder block to the valve plate for high efficiency
- Swashplate design and other proven features reduce sound levels
- Self-priming open circuit pumps require no boosting
- Can be operated with mechanical, hydraulic or electrical controls
- Shaft bearing life is longest in it's class for long life and through-drive capability
- Most accurate HP limiter control in its class
- Through drive allows installation of multiple pumps with single shaft
- Largest shafts in class, for true tandem mount capability at corner horsepower.
- Automatic wear compensation ensures high resistance to dirt



Hydrokraft Pumps and Motors



Series W Axial Piston Pumps—Open Circuit

The W series pump is available with fixed (PF) and variable (PV) displacement. Rated 350 bar continuous, 420 bar peak, it is designed for all types of industrial and mobile applications.

Specifications

Displacements from 130 cc to 750 cc (8–45 in³/r)

Speed Range (max.): 2200–1200 rpm

Nominal Pressures: Up to 350 bar [5000 psi]; Peak to 420 bar [6000 psi]



Series X / W Axial Piston Motors

The X / W series motors are available with fixed (MFS) and variable (MVS) displacement. Rated 350 bar continuous, 420 bar peak, with advanced control options and through-drive.

Specifications

Displacements from 66 cc to 750 cc (4–45 in³/r)

Speed Range (max.): 2800–1800 rpm

Nominal Pressures: Up to 350 bar [5000 psi]; Peak to 420 bar [6000 psi]



Series X Axial Piston Pumps—Open Circuit

The X series pump is an open loop pump and available with fixed (PF) and variable (PV) displacement. Rated 350 bar continuous, 420 bar peak, it is designed for all standard industrial applications.

Specifications

Displacements from 66 cc to 250 cc (4–45 in³/r)

Speed Range (max.): 2300–1800 rpm

Nominal Pressures: Up to 350 bar [5000 psi]; Peak to 420 bar [6000 psi]



Series X / W Axial Piston Pumps—Closed Circuit

Closed circuit X / W series pumps are closed loop axial piston pumps. Rated 350 bar continuous, 420 bar peak with advanced control options and through-drive for all heavy duty industrial and mobile applications.

Specifications

Displacements from 66 cc to 750 cc (4–45 in³/r)

Speed Range (max.): 2600–1800 rpm

Nominal Pressures: Up to 350 bar [5000 psi]; Peak to 420 bar [6000 psi]

