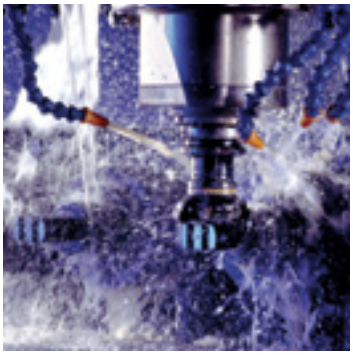
aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



Industrial Hydraulics

Innovative Products and System Solutions

Parker

ENGINEERING YOUR SUCCESS.

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Parker Hannifin Corporation

Parker Hannifin is the world's leading diversified manufacturer of motion and control technologies and systems, providing precision-engineered solutions for a wide variety of commercial, mobile, industrial and aerospace markets. Parker's products are vital to virtually everything that moves or requires control, including the manufacture and processing of raw materials, durable goods, infrastructure development and all forms of transport.

Customers rely on Parker for engineering excellence, world-class manufacturing and outstanding customer service to provide comprehensive application solutions. As the leader in motion and control technologies, Parker partners with its customers to increase their productivity and profitability.

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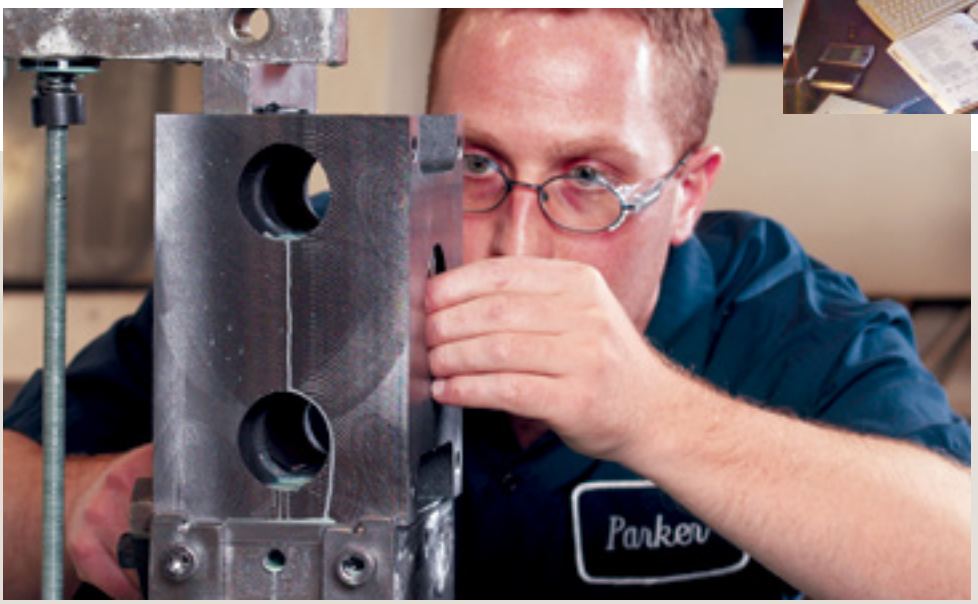


Industrial Hydraulics

At the heart of every industrial hydraulic solution is Parker's 85-year reputation for innovation and quality manufacturing. With more than 200,000 hydraulic models numbers in inventory, Parker's breadth of product is unmatched – whether designing new applications or retrofitting older ones, Parker is positioned to meet customer needs.

Industrial Markets Served:

- Amusement rides and simulators
- Balers and compactors
- Hydraulic presses
- Industrial machinery
- In-Plant automotive
- Machine tool
- Marine
- Medical equipment
- Oil and gas exploration and drilling
- Paper
- Plastics and rubber
- Power generation
- Testing machines

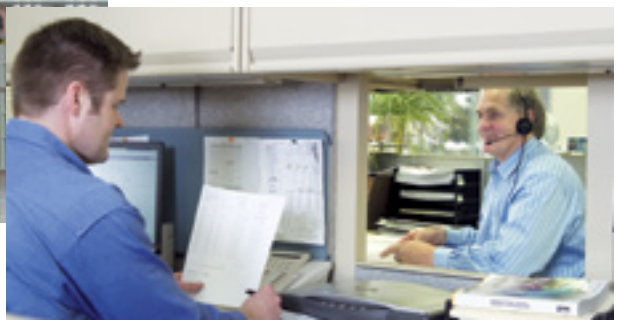
Parker's engineered solutions are designed to maximize machine performance, eliminate downtime, improve energy efficiency, provide faster cycle times, reduce noise and heat while containing cost and improving the customer's bottom line. And buying from a single quality source saves both time and money while allowing easier ordering and faster deliveries.

Custom Made Partnerships

Dedicated to increasing customers' productivity and profitability, Parker offers customers the widest array of solutions and services available. Using the industry's leading edge technology and proven processes, Parker can provide customers with any combination of components, sub-assemblies or complete motion and control systems for any industrial application.

Voice of the customer programs, market knowledge and engineering expertise combine to develop new products to meet evolving customer needs. Parker's new product innovation process includes a number of stages, starting with brainstorming product ideas, and continues to the actual product launch. Customers benefit from Parker's lean thinking and six sigma analysis applied during the process – ensuring high quality.

As the leader in the motion and control industry, Parker strives to be a preferred single source partner. These relationships are cultivated by listening closely to our customers and repeatedly providing them with measurable value.



Value-Added Service & Support

Parker knows that it takes more than innovative products, competitive prices and on-time delivery to satisfy customer needs – it takes a commitment to provide exceptional value. At Parker, value is not a commodity; instead, it is the result of personal interaction and dedicated resources partnering with customers. Our value-added services include:

- Machine analysis and troubleshooting
- Design engineering support
- System design
- Component selection
- New product development
- Custom component manufacturing
- Assemblies and kits
- Sub systems
- Global support and service
- Technical training

When it comes to hydraulics, Parker's worldwide network of degreed field-sales engineers are the best trained in the business and can be your single-point of contact. Our field-sales teams coordinate Parker's vast global resources including platform and technology experts to satisfy any industrial application.

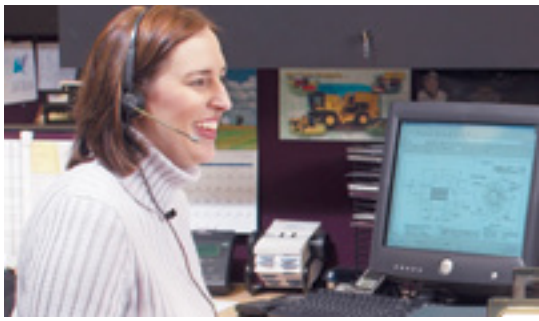
And whether they are crawling inside your machine during business hours, or working weekends, Parker engineers are there when you need them.

Hydraulic Technology Centers

Parker's ultimate competitive advantage in serving customers is its global network of 13,000 distributors that can provide Parker products and services nearly anywhere, anytime.

At the core of Parker's hydraulic distribution is a select group of Hydraulic Technology Centers (HTC). HTCs are Parker distributors who offer a one stop shop for a wide range of products, engineering services, computer-aided design, fabrication and assembly. HTCs can assist with equipment design, prototyping and the integration of electronic or pneumatic components with hydraulic systems.

Parker's HTCs are chosen because of their commitment to providing exceptional customer service and complete hydraulic systems and solutions. HTCs carry local inventory of Parker products, ensuring customers fast delivery and reduced downtime.



Training Excellence

Parker's Motion and Control Training Department offers a full range of training equipment and curriculum to support the teaching of hydraulic and electromechanical motion and control technologies. Utilized by colleges, universities, technical schools and industry around the world, Parker's training systems, textbooks, lab manuals, instructor's guides and teaching aids have been educating technology students for decades.

Industrial Hydraulic Components

Parker offers the world's most extensive line of industrial hydraulic products. From pumps and valves to motors and motion controllers, all of Parker's products share a common heritage of advanced technology and are designed to deliver precise and reliable control.

Accumulators

A complete range of accumulators including piston, bladder and diaphragm type as well as gas bottles, Kleenvent reservoir isolators and other accessories are available. Sturdy construction makes for reliable components that improve hydraulic system efficiency by maintaining pressure, supplementing pump flow and absorbing system shocks.

Coolers

Parker's industrial cooler product offers global designs for a variety of industrial applications. Parker prides itself on cooler designs that optimize the highest heat duty per pound for the most efficient, space saving cooler on the market. In comparison to competition, Parker coolers are quiet, compact and lightweight, yet constructed for reliability and long life. Custom and combination coolers are available for most applications

Compact Power Systems

Efficient performance in a robust compact design best describes Parker's Oildyne products. These compact power systems deliver power density, are easy to install and allow for flexibility across a wide variety of applications. Locking circuit and manual release availability enable safe, secure operation in critical situations and harsh environments as well as an extended service life dramatically lowers maintenance requirements and costs. Electro-hydraulic actuators, miniature power units, fluid power systems, piston pumps, cartridge piston pumps and hand pumps are all reliable solutions for design challenges.

Cylinders

The cylinder product offering provides more power per pound and per dollar over millions of trouble-free cycles. These products have proven to be the most reliable and cost effective cylinders available.

Filtration and Fluid Analysis

Complementing the reliability of hydraulic systems and components are filtration products which provide protection against fluid contaminants. High, medium and low pressure filters are offered, as well as portable filter carts and replacement elements. The comprehensive line of pressure and return line filters enhances machine life and reduces machine maintenance.

Fluid Connectors

A complete spectrum of fluid connector products for hydraulic, pneumatic and fluid systems is available with products ranging from state-of-the-art fittings, valves and quick couplings, to pressure hose that is available in a wide range of core-tube materials, reinforcement designs and outer covers.

Cartridge Valves and Integrated Circuits

Solutions for complex circuits by matching threaded cartridge valves and integrating them into a single manifold is a core competency.

Motors

A broad range of high and low speed motors deliver excellent performance with high efficiency, true wear compensation and longer service life. Parker's motors provide power ranging up to 15,000 inch-pounds of torque with speeds ranging from ½ RPM (Calzoni) to 13,000 RPM (bent access). A complete range of sizes is offered in gear, gerotor, vane and piston style operating configurations. Fixed and variable displacement motors are available.

Power Units

All power units are backed by complete engineering support including control documentation on the shop floor. Parker's complete line of standard pre-engineered and cataloged hydraulic power units include everything from 28 cubic inch to 80 gallon reservoir sizes and are available in five working days.

Pumps

Parker's hydraulic pumps are available in fixed or variables displacement models of piston, vane and gear pumps. Engineered to handle a wide range of applications, they are available with a full complement of electronic and computer controls. Hydraulic pumps are manufactured with the finest materials under strict quality control, resulting in a pump that delivers high efficiency and low maintenance under the toughest operating conditions.

Rotary Actuators

Recognized for their durability and used wherever reliability is critical to the application, rotary actuation provides performance features to meet all common mobile applications. The product range offers a unique solution for developing high torque from a compact, self-contained, precision machined, drop-in package. Special designs are available.

Valves and Controls

From simple on/off functions to precise motion control, valves and controls are used on all types of mobile equipment. Inline and bankable control valves, motion controllers, pressure control valves, servo valves and manifold mounted directional and proportional valves are all available.

Accumulators / Coolers

Piston Accumulators

- Low temperature solutions to -50°F
- Over 50 standard capacities from 5 cu. in. (.075 liters) to 50 gallons (189 liters)
- 3", 4", 6", 7", 8", 9" and 12" nominal bore sizes
- 207, 276 and 350 bar (3000, 4000 and 5000 psi) operating pressures
- Five-bladed V-O-ring piston seals in five standard seal compounds
- Accumulator and gas bottle configurations
- CRN/CSA, AS1210, DNV, ABS, NR-13, SELO, ASME, CE and other certifications available
- Custom capacities over 200 gallons and 20,000 psi
- Stainless steel models for water/seawater/chemical service

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ACP Series Piston Accumulators

- Compact, crimped piston accumulator design
- 1½", 2", 3" and 4" bore sizes (40, 50, 80, 100 mm)
- Standard capacities from 5 cu. in. (.075 liters) to 488 cu. in. (8 liters)
- 276 bar (4000 psi) and 345 bar (5000 psi) operating pressure
- Low-cost, non-repairable design
- Multiple port options
- No gas valve option
- Quick delivery

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Bladder Accumulators

- Standard capacities from 10 cu. in. (.16 liters) to 15 gallons (56 liters)
- 25 & 40 gallon capacity available
- Maximum operating pressures up to 455 bar (6600 psi)
- Bladders molded in-house
- Six bladder compounds to suit a variety of fluids and temperatures
- Bottom and top repairable; high-flow, transfer barriers and gas bottles
- Water/chemical service available
- CRN/CSA, AS1210, DNV, ABS, NR-13, ASME, CE and other certifications available

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Diaphragm Accumulators

- Standard capacities from 5 cu. in. (.075 liters) to 170 cu. in. (2.8 liters)
- Maximum operating pressures up to 250 bar (3600 psi)
- Compact and lightweight
- Low-cost, non-repairable design
- Quick responding diaphragms of hydrin elastomer

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Gas Bottles

- Standard capacities from 2.5 gallons to 100 gallons
- Maximum operating pressures up to 4000 psi ASME, 330 bar CE
- High strength alloy steel
- Single piece spun shell
- ASME and CE certification

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Accumulators / Coolers

Inline Pulse-Tone™ Shock Suppressors

- Reduces pulsations and noise attenuation
- Compact size, inline mounting
- 207 and 345 bar (3000 and 5000 psi) models
- NPT, BSPP, SAE and split flange connections
- Stainless steel model for water/chemical service

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KleenVent Hydraulic Reservoir Isolators

- Protects hydraulic system from contamination
- Closes off hydraulic system to protect from evaporation (water/Glycol)
- Standard capacities from 2.5 gallons (9.5 liters) to 100 gallons (378 liters)
- Six bladder polymers for a wide range of fluids and temperatures
- Choice of steel or Polyethylene shells depending on size
- Easy to use installation kits available
- Optional pressure/vacuum breaker

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Accumulator Charging Kit and Mounting Accessories

- Charging and gauging equipment for safe maintenance of hydraulic accumulators
- Common industrial gauge adapters and assemblies
- Gauge adapters and assemblies
- Accumulator repair tools
- Mounting clamps and base brackets
- U-Bolt mounting hardware

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Safety Block Assembly

- Combines features of multiple components needed to safely isolate, protect & discharge a hydraulic accumulator
- Integrated design leads to less plumbing, labor and leak points
  - Pressure relief valve
  - Shut-off valve
  - Manual discharge valve
- Electrically operated discharge valve (optional)
- Lock-out device (optional)
- Working pressures up to 350 bar (5075 psi)
- Meets the European Pressure Equipment Directive (PED)

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Industrial Coolers

- Parker coolers offer a light weight, compact design with high cooling capacity
- Robust bar and plate construction ensures reliable and long lasting cooling with low service and maintenance costs
- Optimized fan design and material for low noise operation
- Available with AC motor and integrated circulation pump configurations (air/oil cooling) and water/oil brazed plate designs
- Cooling capacity up to 400 HP (fan driven AC motor), 60 HP (offline cooling), and 70 HP (brazed plate water cooling)
- Design engineers work with customers to provide custom and combination coolers to meet the unique cooling needs of most applications

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Compact Hydraulics

Fluid Power Systems

108

550

Parker compact fluid power systems let you put the power where you need it. They are completely self-contained with motor, pump, reservoir, internal valving, load hold checks and relief valves. They often eliminate the need for other components and plumbing in the system to keep costs down.

The 108 Series models are designed for intermittent service and come in four standard pump sizes. Units are available with single or bi-directional rotation and a choice of several hydraulic circuits.

The 550 Series offers top-quality industrial power in an economical package. The wide range of cartridge and D03 directional control valves available provides great flexibility in offering a hydraulic power unit to match your system requirements.

Series	Operating bar (psi)	Max. Flow LPM (GPM)	Tank (Gallons)	Motor (HP)
108	241 (3500)	3 (0.75)	28 cu. in.–1.5	⅓
550	207 (3000)	11 (3)	½ – 5	½ – 3

View Specs | 108 Product PDF | 550 Product PDF

Compact EHA (Electro-Hydraulic Actuator)

- Compact, power dense, low noise solution
- Robust, leak free one piece housing design
- Eliminates costly hoses, fittings, valves and fixtures
- Speed range up to 84 mm/sec (3.3 in/sec)
- Force range up to 21.35 kN (4,800 lbs)
- Cylinder stroke length of 102, 152 and 203 mm (4", 6" and 8")
- Variety of pump displacements, cylinder rod and bore sizes
- 12 or 24 VDC motor, .18 kW or .56 kW (1/4 or 3/4 hp) for intermittent duty
- Comes pre-flushed, filled & sealed
- Compatible with hostile environments, can be washed down
- System simplicity and lower installation costs – truly a "plug 'n play" unit
- Extended service life with dramatically lowered maintenance requirements

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Piston Pumps

- Designed for open circuit systems
- Fixed displacement
- Clockwise, counter-clockwise, or bi-directional rotation
- Naturally aspirated to 5000 RPM
- Porting on sides or rear
- Operate efficiently on thin (5 cS) fluid
- Operating temperature: -40° to 149°C (-40° to 300°F)

Frame size H	-156	-206	-259	-311	-346	-417	-519	-692	-865
Displacement (cm^3/rev) (in^3/rev)	0.156 0.0095	0.206 0.0126	0.259 0.0158	0.311 0.0190	0.346 0.0211	0.417 0.0255	0.519 0.0317	0.692 0.0422	0.865 0.0527
Max continuous pressure (bar) (psi)	241 3500	241 3500	241 3500	241 3500	241 3500	241 3500	241 3500	224 3250	207 3000
Max speed (RPM)	4400	4200	4000	3800	3800	3700	3700	3600	3500

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Compact Hydraulics

Cartridge Pumps

- Three-piston design
- Fixed displacement determined by internal cam angle
- Uni-directional
- Designed to fit specially machined manifolds

Displacement (cm^3/rev) (in^3/rev)	0.1 to 0.33 0.006 to 0.020
Max continuous pressure (bar) (psi)	207 3000
Max speed (RPM)	5000

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Hand Pumps

750-1 750-2

- 8 cc/stroke (.50 in^3/stroke)
- Excellent backup power supply
- Flexible mounting
- Buna-N seals
- Operating pressure of 172 bar (2500 psi)

Model 750-1

- Controls single acting cylinder
- Includes manual release valve

Model 750-2

- Controls double acting cylinder
- 2-position, 4-way selector valve
- Integral double P.O. check valves

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165 Series

- 1 HP, 12 & 24 VDC motors
- Up to 5.4 LPM (1.4 GPM)
- Variety of circuits including reversible locking
- Soft seat load hold check valves
- 241 bar (3500 psi) capability
- Many reservoir choices

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Gear Motors

- Concentric center drive
- Bi-directional rotation
- Instantly reversible
- Variety of shaft options
- Flange or face mounting

Frame Size 09	
Displacement (cm^3/rev) (in^3/rev)	1.48 .09
Max continuous pressure (bar) (psi)	276 4000
Max speed (RPM)	25000

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Cylinders

2H Series

- Heavy duty service with industrial tie rod construction
- Nominal pressures up to 3000 psi (207 bar)
- Standard bore sizes 1.50" – 6.00"
- Piston rod diameters 0.625" – 4.000"
- Strokes available in any practical length
- 18 standard mounting styles
- Exclusive “Jewel” Rod Gland with TS-2000 Rod Seal
- Parker stepped cushion for increased performance and productivity
- Rod ends: four standard choices, specials to order

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3H Series

- Heavy duty service with industrial tie rod construction
- Nominal pressures up to 3000 psi (207 bar)
- Standard bore sizes 7.00" – 20.00"
- Piston rod diameters 3.000" – 10.000"
- Strokes available in any practical length
- 16 standard mounting styles
- Parker stepped cushion for increased performance and productivity
- Rod ends: four standard choices, specials to order

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3L Series

- Medium duty service with industrial tie rod construction
- Nominal pressure up to 1000 psi (70 bar)
- Standard bore sizes 1.00" – 8.00"
- Piston rod diameters 0.500" – 5.500"
- Strokes available in any practical length
- 15 standard mounting styles
- Exclusive “Jewel” Rod Gland with TS-2000 Rod Seal
- Parker stepped cushion for increased performance and productivity
- Rod ends: four standard choices, specials to order

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CHD Series

- Compact hydraulic cylinder
- Repairable construction, steel body design
- Bore sizes from 20 mm – 80 mm
- Strokes in 1mm increments up to 100mm dependent on bore size
- Piston rod diameters 12 mm – 45 mm
- Single and double rod designs
- 13 standard mounting styles
- Nominal pressures up to 207 bar (3000 psi)
- Four standard rod end styles with special ends available
- Available with SAE, NPTF and BSPP ports
- Manifold ports available on foot mounting

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Cylinders

CHE Series

- Compact hydraulic cylinder
- Repairable construction, aluminum alloy extruded design
- Bore sizes from 20 mm – 100 mm
- Strokes in 1mm increments up to 150mm dependent on bore size
- Piston rod diameters 12 mm – 56 mm
- Single and double rod designs
- 6 standard mounting styles
- Nominal pressures up to 140 bar (2030 psi) dependent on bore size
- Four standard rod end styles with special ends available
- Available with SAE, NPTF and BSPP ports
- Magnetic piston and position sensing switches available

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HMI Series

- Nominal pressures up to 210 bar (3045 psi)
- Metric hydraulic cylinders with bore sizes 25 mm – 200 mm
- ISO 6020/2 mounting interchangeable
- Up to three rod sizes per bore
- Wide range of mounting accessories
- Up to three male and three female rod end threads per bore
- Strokes available in any practical length
- Piston rod diameters 12 mm – 140 mm
- Single and double rod designs
- 12 standard mounting styles
- Exclusive “Jewel” Rod Gland with TS-2000 Rod Seal
- Seal types to suit a wide variety of operating environments
- Parker stepped cushion for increased performance and productivity

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RDH Series

- Heavy duty hydraulic roundline cylinder
- Standard threaded head and welded cap construction
- Nominal pressures up to 3000 psi (207 Bar)
- Bore sizes from 1.50" – 8.00"
- Piston rod diameters 0.625" - 5.500"
- Strokes available in any practical length
- Rod ends: five standard choices, specials to order
- Nine standard mounting styles

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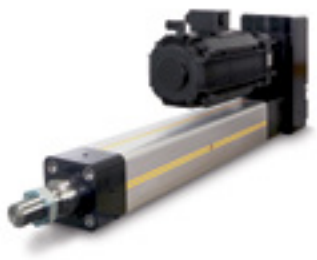
Cylinders

ETH



- Frame sizes ETH032 / ETH050 / ETH080 / ETH100 / ETH125
- Screw pitch 5, 10, 16, 20, 32 mm
- Precision Class 7 Ball Screw
- Stroke up to 79" (2000 mm)
- Traction/thrust force up to 25, 600 lbs. (114 kN)
- Speed up to 60 Inches per second (1.7 m/s)
- Acceleration up to 15 m/s²
- Equivalent dynamic axial force at a lifetime of 2500 km up to 49.6 kN
- Efficiency up to 90%
- Position Repeatability up to ±0.03 mm

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XFC Series

- All steel construction
- Elastomeric seals throughout
- Standard metric hydraulic type tie rod construction
- Opposed preloaded angular contact bearings
- Roller screw drive system
- Inline and parallel gear drive configurations
- Speeds up to 40 inches per second (1 m/s)
- Continuous thrust ratings up to 80,000 lbs. (356 kN)
- Strokes from 50 mm to 2000 mm in 1 mm increment
- Anti-rotate and rotatable rod configurations
- Other motor mounts available

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WaveScale

- Linear displacement transducer (LDT) feedback
- WaveScale embedded design maintains NFPA dimensions 2.00" – 6.00" bores
- Eliminates need for limit switches, deceleration valves, shock absorbers and mechanical linkages in many applications
- Nominal pressures up to 3000 psi (207 bar)
- Piston rod diameters 1.000" – 4.000"
- Wide variety of stroke lengths available
- Exclusive “Jewel” Rod Gland with TS-2000 Rod Seal
- Parker stepped cushion for increased performance and productivity
- Low friction seals available
- Seven bolt-on and four integral manifolds available
- Simplifies machine design and reduces number of hydraulic lines
- Integral mounted valve eliminates assembly time and fittings

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Intellinder

- Suitable for hydraulic pneumatic and electromechanical cylinder applications
- Eliminates need for limit switches, deceleration valves, shock absorbers and mechanical linkages in many applications
- Nominal pressures up to 3000 psi (207 bar)
- Piston rod diameters 1.000" – 10.000"
- Stroke lengths to 20.00'
- 0-10v, 4-20mA – J1939 outputs
- Sustains performance in applications exposed to vibration, dust, gravel, corrosives, chemicals, axial load, side load, and immersion
- Features highly sensitive health monitoring to detect and diagnose potential cylinder malfunctions before they can disrupt operations

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Cylinders

Custom

- Bores to 48.00" (1219 mm)
- Strokes to 876" (22250 mm)
- Operating pressures to 15,000 psi (1034 bar)
- Intensifier pressures to 60,000 psi (4138 bar)
- Welded, bolted/mill-type, tie rod, telescopic and crimped construction styles
- Many construction materials:
  - Carbon steels
  - Stainless steels
  - Exotic steels
  - Aluminum
  - Composite
- Wide variety of rod coatings:
  - Hard Chrome
  - Chrome-Over-Nickel
  - Global Shield
  - Nitrotec/Nitride
  - Ceramic
  - Laser Clad
- Cylinder assemblies can integrate other hydraulic products:
  - Fluid connectors, manifolds, valves, accumulators, filtration, etc.
- Available third party approvals and certifications include: ABS, DNV, BV, USCG, Lloyd's Register, ASME, Nuclear and MIL-I-45208
- Common options include cartridge/counterbalance valves, epoxy paint, continuous feedback devices, low friction seals, mechanical linkage, etc.
- Custom cylinders are designed to the customer application and specifications

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Filtration Filters

Low Pressure

- Various mounting configurations
- High capacity/high efficiency Microglass media
- Visual and electrical indicators with several connector styles
- Flange options for low profile, easy mounting

Model	Max Flow LPM (GPM)	Max Pressure bar (psi)	Mounting Style	View Specs
12AT	64 (17)	10.3 (150)	Spin-on	View Product PDF
50AT	190 (50)	10.3 (150)	Spin-on	View Product PDF
PT	190 (50)	10.3 (150)	Tank top	View Product PDF
KLT/KLS	455 (120)	10.3 (150)	Tank top	View Product PDF
RF7	1136 (300)	10.3 (150)	Tank top	View Product PDF
ILP, RFP	452 (120)	13.8 (200)	Inline, In-tank	View Product PDF
BGTS	2400 (640)	10.3 (150)	Return in-tank	View Product PDF

Medium Pressure

- NPT, SAE or flange ports
- High capacity/high efficiency Microglass media
- Cartridge style by-pass valve
- Visual and electrical indicators with several connector styles

Model	Max Flow LPM (GPM)	Max Pressure bar (psi)	Mounting Style	View Specs
12CS	94 (25)	34.5 (500)	Inline	View Product PDF
50CS	220 (60)	34.5 (500)	Inline	View Product PDF
GMF2	94 (25)	69 (1000)	Inline	View Product PDF
GMF3	302 (80)	69 (1000)	Inline	View Product PDF
GMF4	452 (120)	69 (1000)	Inline	View Product PDF

High Pressure

- SAE, flange or ISO ports
- High capacity/high efficiency Microglass media
- Visual and electrical indicators with several connector styles
- Manifold mount option (50P and 15P/30P and WPF Series)
- Reverse flow option (50PR Series) for HST circuits

Model	Max Flow LPM (GPM)	Max Pressure bar (psi)	Mounting Style	View Specs
15P	75 (20)	207 (3000)	Inline, manifold	View Product PDF
30P	170 (45)	207 (3000)	Inline, manifold	View Product PDF
50P	377 (100)	345 (5000)	Inline, bowl up	View Product PDF
50PR	264 (70)	345 (5000)	Inline, reverse flow	View Product PDF
WPF1	40 (10)	483 (7000)	Inline	View Product PDF
WPF2	100 (26)	483 (7000)	Inline	View Product PDF
WPF3	160 (42)	483 (7000)	Inline	View Product PDF
WPF4	360 (95)	483 (7000)	Inline	View Product PDF
WPF5	520 (137)	483 (7000)	Inline	View Product PDF

Filtration Elements, Systems, Accessories

Portable/Offline Systems


ParGel


Guardian


Sentinel


Filtercart

- Provide flexibility for removing contaminants from hydraulic fluid
- Guardian hand-held purification system with 15 LPM (4 GPM) flow rate
- Choice of five portable purification systems including 18, 37, 75, 113 and 170 LPM (5, 10, 20, 30 and 45 GPM) flow rates

- Choice of two filter carts:
  - 19 LPM (5 GPM) flow; ½ hp electric motor
  - 39 LPM (10 GPM) flow; ¾ hp electric motor
- Par-Gel Elements
  - Water removal elements filter "free" water from mineral-base and synthetic fluids
  - Fits many Parker filters and the Guardian Filtration System

View Specs

Par-Gel | Guardian | Sentinel | Filter Carts

Stationary/Offline Systems (SOS)

The Stationary Offline System (SOS) can operate independently of the main system for continued filtration providing cleaner fluids. Easy to install, service, and maintain, the SOS is ideally suited for remote applications or where operating conditions require protection from a harsh environment.

- Self contained offline filtration Package
- Self monitoring

- Auto shut-off
- High visibility filter bypass alarm
- Easy serviceability
- 5 GPM flow rate
- NEMA 4, IP65 enclosure
- Visual/Electrical element service indicator
- Optional heater with insulated enclosure
- High capacity filter for maximum life

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Par Fit Elements

- Extensive range of competitively priced quality replacement filter elements for any filter brand
- Over 6500 competitive interchange listings help consolidate vendor base by allowing users to acquire all replacement elements from one source

- Provides proven performance in competitive filter housings

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Reservoir Accessories

- Metallic and non-metallic breathers and filler breathers
- Triceptor™ desiccant breathers
- Spin-on breathers

- Diffusers
- Fluid level/temperature gauges
- Suction strainers

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Filtration Condition Monitoring Equipment

Effective machinery and oil condition monitoring provide the end user with the ability to predict breakdown and eliminate or reduce the associated cost of failure.

An intimate knowledge of the fluid and mechanical properties of these machines can maximize pre-warning time and result in the most efficient planning of maintenance and resources for asset repair or replacement.

Parker offers one the widest ranges of accurate, reliable and innovative condition monitoring products providing solutions in:

- Detection of abnormal wear/ impending system failure
- Detection of lube degradation/ contamination
- Verification of the oil in use
- Optimization of equipment service intervals
- Improvement of operational safety
- Reduction of risk and maximization of uptime

LCM – Laser Particle Counter

The LCM laser particle counter is designed for on-line particle counting with programmable automatic operation feature and data storage for continuous monitoring.

- Particle count test cycle in 2 minutes reported in ISO or NAS format
- On-line sampling up to 414 bar (6000 psi)
- RS232 serial port with data storage capacity up to 300 tests
- Integral printer with data graphing and Windows-based software

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Par-Test

A complete laboratory fluid sample analysis kit for either water based fluid or petroleum based fluids. Each kit includes a pre-cleaned sample bottle, data sheet and mailing container. Standard tests are:

- Particle count
- Photomicrograph
- Viscosity analysis
- Water analysis
- Neutralization analysis

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MS200 Moisture Sensor

The MS200 moisture sensor provides real-time continuous water in oil contamination monitoring.

- Simple LEDs provide local Go/No-Go indication
- Panel meter for local or remote display reports 0 – 100% saturation
- Meter scale is color coded for positive/easy identification
- 0 – 10 VDC analog and 120 VAC logic output

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IPD – iCount Particle Detector

The iCount Particle Detector represents the most innovative technology in solid particle detection. The IPD shows real time fluid condition indication in ISO or NAS format to a customer set point.

- Moisture % RH indication (optional)
- Early warning LED or LCD display indicators for low, medium and high contamination levels.
- Cost effective early warning solution which prolongs fluid life and reduces machine downtime
- Hydraulic, phosphate ester and fuel fluid compatible.
- Self-diagnostic software
- Fully PC/PLC integration, RS232 and 0-5 Volt, 4-20mA output.
- 6000 psi (414 bar) maximum operating pressure.

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Filtration Condition Monitoring Equipment

ANALEXfdMplus

The ANALEXfdMplus is a highly accurate ferrous debris monitor designed to measure ferrous wear metal particle contamination in an oil sample.

- Portable
- 15 second test time
- Data storage memory
- Touch screen data entry

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DIGI Field Kit

The DIGI Field Test Kit gives fast, accurate results for water in oil, total base number, total acid number, insolubles (soot) and comparative viscosity.

- Portable
- TAN and TBN test
- Water in oil test
- Viscosity go/no-go
- Combustion related debris (soot) test

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Low Range DIGI Water Kit

The DIGI Test Cell provides simple, accurate results for water in oil.

- Portable
- Water in oil test
- PPM or %
- Built-in memory
- 10,000 test battery life

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Heated Viscometer

Make fast on-site maintenance decisions with Parker's Heated Viscometer. Accurate oil viscosity results in minutes.

- Portable
- Digital read-out in Centistokes (cSt)

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MHC Bearing Checker

Parker's MHC Bearing Checker is a new, unique hand-held instrument, providing maintenance engineers with an easy-to-operate, simple to use and quick method of analyzing bearing condition and lubrication state.

- Portable
- Magnetic interface
- dB level display
- Digital display of bearing distress level

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Fluid Connectors – Fluid System Connectors

Hi-Duty

- Two-piece design
- Easy assembly
- Higher pressure rating
- No flaring or soldering is necessary
- Use with copper, brass and seamless

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Hose barbs

- All brass construction
- SAE straight threads
- Metric threads
- Viton O-ring standard
- Compact forged shapes
- Use with hose clamp

View Specs

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Pipe Fittings

- SAE standards
- Large range of sizes and styles
- Pre-applied sealant available
- Threads made to dryseal standards
- Extrusions and forgings available

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View Product PDF

PMH Low Pressure Hydraulic Fittings

- Excellent corrosion resistance
- Compact envelop
- Fewer potential leak points
- Reduces assembly time by 60 seconds per connection
- Use with Parflex XDT tubing
- PMH/XDT system is 60% lighter than traditional pilot line assemblies

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Compress-Align

- Captive sleeve
- Ease of assembly
- All brass bodies
- Seals out-of-round tubing
- Bodies interchangeable with standard compression
- Economical

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Ball Valves

- Available in brass, carbon steel, stainless steel
- Sizes from ⅛"–3"
- Pressures from 200 – 6,000 psi
- Various handle options
- Full flow available
- NPT, SAE straight threads, ISO 6149 ports, BSPP threads

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Fluid Connectors – Thermoplastics/Fluoropolymers

Straight and Formed Thermoplastic Hydraulic Products

- Mobile and industrial hydraulic applications
- Thermoplastic hoses up to 12000 psi
- Non-conductive, low temperature and flame resistant hoses
- Thermoplastic and Hybrid® hoses
- High pressure diagnostic and lubrication products
- Preformed and coiled hose
- Twinline and Multi-line products
- Crimpers, tooling and accessories

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Fluoropolymer Hose Products

- High temperature hydraulic applications
- Superior chemical and corrosion resistance
- Specialty hoses for food/ beverage and pharmaceutical
- Sizes: .250" up to 4"
- Extra flexible designs with half the minimum bend radius of other hoses

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Fluoropolymer Tubing Products

- Materials PTFE, FEP, PFA and HP PFA, ETFE
- Smoothbore, convoluted, corrugated, coiled and heat shrink
- High temperature, chemical resistant applications
- FDA and USP Class VI compliant
- Custom tubing and profile extrusions
- Sizes: .006" ID up to 4" OD

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Pneumatic Products

- Industrial pneumatics
  - Tubing in polyethylene, nylon, polypropylene, polyurethane and clear vinyl
  - Retractable coils
  - Tube harnesses and bundles
  - Formed tubing

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Fluid Connectors – Tube Fittings

O-Ring Face Seal Fittings

- O-ring seal for leak-free connections up to 9000 psi
- Adaptable to inch and metric tube and hose assemblies
- Flat face design provides zero tube entry and excellent over torque resistance
- Offered with SAE, NPT, ISO 6149, BSPP and metric port ends
- Meets SAE J1453 and ISO 8434-3

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37° Flare Fittings

- Metal to metal seal for wide temperature range application
- Adaptable to inch and metric tube and hose assemblies
- Offered with SAE, NPT, ISO 6149, BSPP, BSPT and metric port ends
- Meets SAE J514 and ISO 8434-2

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24° Flareless Fittings

- Metal to metal seal for wide temperature range application
- Suitable for use with inch tube in wall thicknesses from medium to heavy
- Offered with SAE and NPT port ends
- Meets SAE J514

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Metric 24° Flareless Fittings

- Three pressure ranges for optimum compactness
- Offered with SAE, NPT, ISO 6149, BSPP, BSPT, metric parallel and tapered port ends
- For use with metric tube and hose assemblies
- Meets DIN 2353 and ISO 8434-1

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Pipe Fittings and Adapters

- Metric and BSP conversion adapters
- BSPP 60° cone fittings and adapters
- NPT fittings and adapters
- BSPP 30° flare fittings and adapters
- Metric 30° flare fittings and adapters

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4-Bolt Flange Connections

- Forged construction for optimal performance
- Available in kit form with mounting hardware
- Flanges offered with female SAE, NPT, BSPP, socket-weld and butt-weld connections
- Flange adapters offered with O-ring face seal, 37° flare and 24° flareless connections
- Meets SAE J518 and ISO 6162

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Fluid Connectors – Quick Couplings

General Purpose Quick Couplings

General purpose couplings are used across the spectrum of hydraulic and pneumatic applications. They can also be custom engineered for more demanding applications and design challenges.

- Sizes from ⅛" to 2½"
- Brass, steel, stainless steel, plastic
- Pressures to 6000 psi
- Flows up to 200 GPM
- Temp. range from -40° to +400°F

View Specs | View Product PDF | Snap-tite H, IH, PH

Non-Spill Quick Couplings

Non-spill couplings meet today's requirements for more environmentally and user-safe products. They eliminate excess spillage, reducing hazards in the workplace, as well as contamination to the environment.

- Sizes from ¼" to 2"
- Steel, stainless steel, plastic
- Pressures to 10,000 psi
- Flows up to 50 GPM
- Temp. range from -40° to +400°F

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Swivels

The S and PS Series swivels are designed to reduce torque and eliminate hose twist, dramatically increasing the service life of hose and fittings. The full flow design minimizes pressure drop for optimum system performance.

- Sizes from ¼" to 2"
- Steel, stainless steel
- Pressures to 5000 psi
- Inline and 90° (PS Series); 90° (S Series)
- Standard zinc with clear trivalent, plating, nickel plating

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Check Valves

Check valves are available in several configurations, so they can be easily adapted to nearly any hydraulic application. Parker check valves offer several unique features that will ensure years of trouble-free operation.

- Standard inline configuration
- Sizes from ¼" to 1¼"
- Pressures to 5000 psi
- Crack pressures: 5 – 200 psi

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Fluid Connectors – Quick Couplings

Diagnostic Equipment and Test Port Couplings

Parker's complete line of diagnostic equipment can reduce machine downtime during set-ups, trouble shoot problems and provide critical information for preventative maintenance. Diagnostic nipples provide quick access for system pressure, flow, RPM and temperature.

Equipment:

- ServiceJunior – measures pressure to 8700 psi
- Serviceman Plus – measures and records pressure, temperature, RPM and flow
- The Parker Service Master Easy – measures and stores pressure, temperature, flow, and RPM
- The Parker Service Master Plus – measures critical data and stores up to one billion data points

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Serviceman Plus | Service Master Easy

SensoNODE™ Wireless Sensors

SensoNODE is the first step in advanced condition monitoring. This dynamic system provides consistent and accurate readings for pressure, humidity and temperature, providing key decision support to optimize asset and system performance.

- Pressure, temperature and humidity sensors
- Simple installation on liquid or gas systems
- Intuitive interface for remote monitoring on a mobile device

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SensoControl® Industrial Controllers and Sensors

SensoControl Controllers and Sensors are ideal for permanent installation in industrial applications where continuous fluid system monitoring and regulation is needed.

- Pressure and temperature sensors
- Reliable performance
- Resistant to shock and vibration
- Pressure, temperature, and tank level controllers

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Fluid Connectors – GlobalCore Hose Products

Parker offers the largest selection of hoses plus more fitting sizes than any other manufacturer. A wide variety of hoses including braided, spiral and GlobalCore, the new unified hose system designed, built and tested to the ISO 18752 specification.

GlobalCore is a simple solution of robust hydraulic hoses designed to endure tough conditions. It offers unprecedented performance and value for hydraulic systems with high-pressure applications.

The GlobalCore solution decreases inventory and part number complexity by using just five hoses and two fittings.

GlobalCore

- Designed, built and tested to the ISO 18752 specification
- Reduces engineering and service complexity by providing the first comprehensive product family across the most commonly used constant working pressure classes
- Simple system that houses only five hoses. OEM and MRO customers alike will enjoy selecting the right hose based on working pressure
- Fitting solutions: The 43 series features more than 2,500 configuration. It also features the 77 series designed specifically for higher pressure applications and available in more than 500 configurations

Hoses	-4	-6	-8	-10	-12	-16	-20	-24	-32
21 MPa / 3,000 psi	387	387	387	387	387	387	387	387	387
28 MPa / 4,000 psi	487	487/722	487/722	487/722	487/722	487/722	487	487	487
35 MPa / 5,000 psi	*	*	787	787	787	787	787	787	787
42 MPa / 6,000 psi	*	*	797	797	797	797	797	797	797

Fittings	-4	-6	-8	-10	-12	-16	-20	-24	-32
21 MPa / 3,000 psi	43	43	43	43	43	43	43,77	77	77
28 MPa / 4,000 psi	43	43	43	43	43	43	77	77	77
35 MPa / 5,000 psi	*	*	77	77	77	77	77	77	77
42 MPa / 6,000 psi	*	*	77	77	77	77	77	77	77

*Not part of GlobalCore family. See Parker 4400 Catalog for alternative product.

Global Core Home | Global Core Overview

Motors – Calzoni Radial Piston LSHT

Calzoni Motors

The outstanding performance of this robust product is the result of our original, patented design. Used widely in the mining, off shore drilling, oil field and marine winch markets; the Parker Calzoni motor is produced in sizes from 32cc up to 6 gallons per revolution. The efficiency of our design allows for a smaller installed product for the same displacement versus our competitors. Since there are no internal connecting rods we have greatly reduced frictional drag as well as most thrust loading. By creating a static balance on the shaft we have extended the expected lifetime as well.

MR-MRE Series – Fixed Displacement

- 5 piston design
- Wide range of displacement
- Starting torque from 90-95% theoretical
- Total efficiency up to 96%
- Resistance to thermal shocks ΔT=176°F
- Speed feedback accessories optional

Frame size MR/E*	33	57	73	93	110	125	160	190	200	250	300
Displacement (cm^3/rev) (in^3/rev)	32.1 2.0	56.4 3.4	72.6 4.4	92.6 5.7	109.0 6.7	124.7 7.6	159.7 9.8	191.6 11.7	199.2 12.2	250.9 15.3	304.4 18.6
Max pressure (bar) (psi)	300 4350	300 4350	300 4350	300 4350	300 4350	300	300 4350	300 4350	300 4350	300 4350	300 4350
Max speed (RPM)	1400	1300	1200	1150	1100	900	900	850	800	800	750

Frame size MR/E*	330*	350	450	500*	600	700	800*	1100	1400*	1600	1800
Displacement (cm^3/rev) (in^3/rev)	332.4 20.1	349.5 21.3	451.6 27.6	497.9 30.4	607.9 37.1	706.9 43.1	804.2 49.1	1125.8 68.7	1369.5 83.6	1598.4 97.5	1809.6 110.4
Max pressure (bar) (psi)	250 3626	300 4350	300 4350	250 3626	300 4350	300 4350	250 3626	300 4350	250 3626	300 4350	300 4350
Max speed (RPM)	750	640	600	600	520	500	450	330	280	260	250

Frame size MR/E*	2100*	2400	2800	3100*	3600	4500	5400*	6500	7000	8200*
Displacement (cm^3/rev) (in^3/rev)	2091.2 127.6	2393.1 139.9	2792.0 170.4	3103.7 189.4	3636.8 221.9	4502.7 274.8	5401.2 329.6	6460.5 394.2	6967.2 408.7	8226.4 502
Max pressure (bar) (psi)	250 3626	300 4350	300 4350	250 3626	300 4350	300 4350	250 3626	300 4350	300 4350	250 3626
Max speed (RPM)	250	220	215	215	180	170	160	130	130	120

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Motors – Calzoni Radial Piston LSHT

MRT - MRTE - MRTF - MRTA Series – Fixed Displacement

- Hydraulically balanced 10 and 14 piston twin row design
- Wide range of displacements
- Starting torque from 91% theoretical
- Total efficiency up to 96%
- Speed feedback accessories optional

Frame Size MRT/F*/E**/A***	7100	7800**	8500*	9000	9900**	10800*	12000***	13000
Displacement (cc/rev)	7100	7809	8517	9005	9904	10802	12012	12921
Max cont. pressure (bar)	250	210	210	250	210	210	190	250
Max speed (RPM)	150	130	120	130	120	110	105	110

Frame Size MRT/F*/E**/A***	14000	15200**	16400	17000	17500***	18000*	19500	20000**
Displacement (cc/rev)	13935	15194	16453	16759	17488	18025	19508	19788
Max cont. pressure (bar)	250	250	250	250	230	210	250	210
Max speed (RPM)	105	95	85	70	70	65	60	60

Frame Size MRT/F*/E**/A***	21500*	23000**	26000***	30000***	35000***	50000**	53000**	
Displacement (cc/rev)	21271	23034	26029	30030	35025	49876	53256	
Max cont. pressure (bar)	210	210	190	190	190	250	250	
Max speed (RPM)	55	50	40	35	30	25	20	

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MRD-MRDE Series – Dual Displacement, MRV-MRVE Series – Variable Displacement

- 5 piston design
- Displacement ratios of 1:2 or 1:3
- Starting torque from 90-95% theoretical
- Total efficiency up to 96%
- Resistance to thermal shocks ΔT=176°F
- Speed feedback accessories optional

Frame size MRV/E* MRD/E*	300	330*	450	450	500*	700 700	800* 800*	1100 1100	1400* 1400*
Min Displacement (cm^3/rev)	152.1	166.2	225.8	133.5	248.9	237.6	270.2	381.3	463.9
Max Displacement (cm^3/rev)	304.1	332.4	451.6	451.6	497.9	706.9	804.2	1125.8	1369.5
Max cont. pressure (bar)	250	210	250	250	210	250	210	250	210
Speed range without flushing (giri/min)	1-1000	1-1000	1-850	1-1000	1-800	1-750	1-750	0.5-600	0.5-550

Frame size MRV/E* MRD/E*	1800 1800	2100* 2100*	2800 2800	3100* 3100*	4500 4500	5400* 5400*	7000 7000	8200 8200	
Min displacement (cm^3/rev)	603.2	697.0	930.7	1034.6	1497.8	1800.4	2322.4	2742.1	
Max displacement (cm^3/rev)	1809.6	2091.2	2792.0	3103.7	4502.7	5401.2	6967.2	8226.4	
Max cont. pressure (bar)	250	210	250	210	250	210	250	210	
Speed range without flushing (giri/min)	0.5-450	0.5-420	0.5-120	0.5-120	0.5-100	0.5-100	.05-100	.05-100	

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Motors – Low Speed High Torque

Nichols


700


110A


716

- Single and two-speed styles
- Rugged, compact design
- Unique IGR power element
- Integral selector valve on two-speed styles
- Maximum pressure 210 bar (3000 psi)

Series 110A	036	054	071	088	106	129	164	189	241
Geometric displacement (cm^3/rev) (in^3/rev)	49 3.6	89 5.4	116 7.1	144 8.8	174 10.6	211 12.9	269 16.4	310 18.9	395 24.1
Max continuous pressure (bar) (psi)	170 2500	170 2500	170 2500	170 2500	155 2250	155 2250	140 2000	140 2000	120 1750
Max operating speed (rev/min)	858	740	684	622	519	437	415	350	279
Torque @ max cont. pressure (Nm) (lb-in)	127 1125	182 1608	256 2267	324 2874	352 3115	412 3651	470 4164	542 4803	594 5261

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Series 700	072	108	142	176	212	258
Geometric displacement Series (cm^3/rev) (in^3/rev) Parallel (cm^3/rev) (in^3/rev)	 59 3.6 118 7.2	 88 5.4 177 10.8	 116 7.1 233 14.2	 144 8.8 288 17.6	 174 10.6 347 21.2	 211 12.9 423 25.8
Max cont. differential pressure Series (bar) (psi) Parallel (bar) (psi)	 170 2500 170 2500	 170 2500 170 2500	 170 2500 170 2500	 170 2500 170 2500	 155 2250 155 2250	 155 2250 140 2000
Max operating speed Series (rev/min) Parallel (rev/min)	 890 782	 843 656	 695 481	 688 419	 580 352	 440 268
Torque @ max cont. pressure (Nm) (lb-in)	 264 2338	 527 4666	 518 4592	 644 5707	 696 6167	 751 6648

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Series 716	072	108	142	176	212	258
Geometric displacement Series (cm^3/rev) (in^3/rev) Parallel (cm^3/rev) (in^3/rev)	 59 3.6 118 7.2	 88 5.4 177 10.8	 116 7.1 233 14.2	 144 8.8 288 17.6	 174 10.6 347 21.2	 211 12.9 423 25.8
Max cont. differential pressure Series (bar) (psi) Parallel (bar) (psi)	 170 2500 170 2500	 170 2500 140 2000	 170 2500 100 1500	 170 2500 85 1250	 155 2250 85 1250	 120 1750 70 1000
Max operating speed Series (rev/min) Parallel (rev/min)	 890 782	 843 656	 695 481	 688 419	 580 352	 440 268
Torque @ max cont. pressure (Nm) (lb-in)	 264 2338	 422 3735	 314 2780	 321 2843	 385 3407	 371 3285

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Motors – Low Speed High Torque

Torqmotor™ – Small Frame


TC


TB/TE

- High volumetric efficiency
- Long life
- Full flow spline cooling
- High pressure shaft seal
- High flow shaft seal cooling
- High starting torque

Frame size TC	-0036	-0045	-0050	-0065	-0080	-0100	-0130	-0165	-0195	-0230	-0260	-0295	-0330	-0365	-0390
Displacement (cm^3/rev) (in^3/rev)	36 2.2	41 2.5	49 3.0	65 4.0	82 5.0	98 6.0	130 8.0	163 10.0	195 11.9	228 13.9	260 15.9	293 17.9	328 20.0	370 22.6	392 24.0
Max cont. pressure (bar) (psi)	86 1250	86 1250	86 1250	86 1250	86 1250	86 1250	86 1250	86 1250	86 1250	76 1100	66 950	59 850	52 750	45 650	45 650
Max operating speed (RPM)	902	810	688	517	413	460	429	346	287	246	217	193	173	152	144
Torque @ max cont. pressure (Nm) (lb-in)	31 272	40 351	48 423	66 582	96 753	100 888	138 1218	173 1529	205 1815	215 1905	211 1870	208 1843	206 1819	206 1825	207 1832

Frame size TB	-0036	-0045	-0050	-0065	-0080	-0100	-0130	-0165	-0195	-0230	-0260	-0295	-0330	-0365	-0390
Displacement (cm^3/rev) (in^3/rev)	36 2.2	41 2.5	49 3.0	65 4.0	82 5.0	98 6.0	130 8.0	163 10.0	195 11.9	228 13.9	260 15.9	293 17.9	328 20.0	370 22.6	392 24.0
Max cont. pressure (bar) (psi)	124 1800	124 1800	124 1800	124 1800	124 1800	124 1800	124 1800	124 1800	124 1800	103 1500	100 1450	97 1400	93 1350	86 1250	83 1200
Max operating speed (RPM)	932	785	678	511	409	454	430	343	287	246	216	191	171	151	143
Torque @ max cont. pressure (Nm) (lb-in)	48 427	64 526	78 693	107 946	135 1193	159 1411	220 1951	273 2418	340 3011	316 2797	350 3096	383 3391	413 3657	440 3897	428 3792

Frame size TE	-0036	-0045	-0050	-0065	-0080	-0100	-0130	-0165	-0195	-0230	-0260	-0295	-0330	-0365	-0390
Displacement (cm^3/rev) (in^3/rev)	36 2.2	41 2.5	49 3.0	65 4.0	82 5.0	98 6.0	130 8.0	163 10.0	195 12.0	228 14.0	260 16.0	293 18.0	328 20.0	370 22.6	392 24.0
Max cont. pressure (bar) (psi)	140 2030	140 2000	140 2000	140 2000	140 2000	140 2000	140 2000	140 2000	140 2000	123 1750	116 1650	109 1550	102 1450	93 1325	88 1250
Max operating speed (RPM)	1141	1024	1020	877	695	582	438	348	292	328	287	256	228	203	191
Torque @ max cont. pressure (Nm) (lb-in)	55 483	71 624	90 796	125 1106	160 1416	190 1682	255 2257	310 2744	390 3452	380 3363	400 3540	428 3784	443 3926	467 4133	445 3935

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Torqmotor™ – TS Series

- Stainless steel housing and shaft
- Glass-filled polypropylene rear cover
- Operates under water or in harsh environments
- High pressure shaft seal to resist leakage
- Full flow spline lubrication for long life

Frame size TS	-0036	-0045	-0050	-0065	-0080	-0100	-0130	-0165	-0195	-0230	-0260	-0295	-0330	-0365	-0390
Displacement (cm^3/rev) (in^3/rev)	36 2.2	41 2.5	49 3.0	65 4.0	82 5.0	98 6.0	130 8.0	163 10.0	195 11.9	228 13.9	260 15.9	293 17.9	328 20.0	370 22.6	392 24.0
Max cont. pressure (bar) (psi)	125 1800	125 1800	125 1800	125 1800	125 1800	125 1800	125 1800	100 1500	87 1250	77 1100	70 1000	63 900	53 750	49 700	29 400
Max operating speed (RPM)	932	805	678	511	409	454	430	343	287	246	216	191	171	151	143
Torque @ max cont. pressure (Nm) (lb-in)	48 427	64 526	78 693	107 946	135 1193	160 1411	226 2000	226 2000	226 2000	226 2000	226 2000	226 2000	226 2000	226 2000	226 2000

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Motors – Low Speed High Torque

Torqmotor™ Large Frame


TF


TG


TGK


TH


TK

- High volumetric efficiency
- Full flow spline cooling
- High pressure shaft seal
- High flow shaft seal cooling
- High starting torque
- High side load capacity
- Long life

Frame size TF	-0080	-0100	-0130	-0140	-0170	-0195	-0240	-0280	-0360	-0405	-0475
Displacement (cm^3/rev)	81	100	128	141	169	197	238	280	364	405	477
(in^3/rev)	4.9	6.1	7.8	8.6	10.3	12.0	14.5	17.1	22.2	24.7	29.1
Max cont pressure (bar)	207	155	138	138	138	138	138	138	130	128	113
(psi)	3000	2250	2000	2000	2000	2000	2000	2000	1880	1850	1645
Max operating speed (RPM)	693	749	583	530	444	381	394	334	258	231	195

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Frame size TG	-0140	-0170	-0195	-0240	-0280	-0310	-0335	-0405	-0475	-0530	-0625	-0785	-0960
Displacement (cm^3/rev)	141	169	195	238	280	310	337	405	477	528	623	786	959
(in^3/rev)	8.6	10.3	11.9	14.5	17.1	18.9	20.6	24.7	29.1	32.3	38.0	48.0	58.5
Max cont pressure (bar)	207	207	207	207	207	207	207	172	138	138	121	103	69
(psi)	3000	3000	3000	3000	3000	3000	3000	2500	2000	2000	1750	1500	1000
Max operating speed (RPM)	660	554	477	393	334	303	277	232	237	213	182	143	118

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Frame size TH	-0140	-0170	-0195	-0240	-0280	-0310	-0335	-0405	-0475	-0530	-0625	-0785	-0960
Displacement (cm^3/rev)	141	169	195	238	280	310	337	405	477	528	623	786	959
(in^3/rev)	8.6	10.3	11.9	14.5	17.1	18.9	20.6	24.7	29.1	32.3	38.0	48.0	58.5
Max cont pressure (bar)	207	207	207	207	207	207	207	172	138	138	121	103	69
(psi)	3000	3000	3000	3000	3000	3000	3000	2500	2000	2000	1750	1500	1000
Max operating speed (RPM)	660	554	477	393	334	303	277	232	237	213	182	143	118

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Frame size TGK	0110	0140	0170	0195	0240	0280	0310	0335	0360	0405	0475	0530	0625	0785	0960
Displacement (cm^3/rev)	110	141	169	195	238	280	310	337	360	405	477	528	623	786	959
(in^3/rev)	6.9	8.6	10.3	11.9	14.5	17.1	18.9	20.3	22.2	24.7	29.1	32.3	38.0	48.0	58.5
Max cont pressure (bar)	241	241	241	241	241	241	241	241	241	241	241	224	190	152	124
(psi)	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3250	2750	2200	1800
Max operating speed (RPM)	672	660	554	477	393	334	303	277	263	232	237	231	182	143	118

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Frame size TK	-0250	-0315	-0400	-0500	-0630	-0800	-1000
Displacement (cm^3/rev)	250	315	400	500	630	800	1000
(in^3/rev)	15.3	19.2	24.4	30.5	38.4	48.8	61
Max cont pressure (bar)	241	241	207	207	207	190	172
(psi)	3500	3500	3000	3000	3000	2750	2500
Max operating speed (RPM)	523	413	373	298	237	276	218

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Motors – Fixed Displacement Vane

M3-M4 Fixed Displacement

The M3 and M4 Series vane motors are fixed displacement and designed especially for severe duty applications. The balance vane cartridge concept provides high volumetric efficiency, longer life, lower noise, and a high starting torque efficiency. The double motor is ideal for applications to obtain three speed operation.

Single Motor Model Series	M3B	M4C	M4SC	M4D	M4SD	M4E	M4SE
Displacement (cm^3/rev) (in^3/rev)	9.2 - 37.1 .56 - 2.26	24.4 - 80.1 1.49 - 4.89	24.4 - 80.1 1.49 - 4.89	65.1 - 144.4 4.00 - 8.80	65.1 - 144.4 4.00 - 8.80	158.8 - 222 9.65 - 13.55	158.8 - 222 9.65 - 13.55
Max cont. pressure (bar) (psi)	200 3000	175 2535	230 3335	175 2535	230 3335	175 2535	190 2795
Max op speed (RPM)	4000	4000	4000	4000	4000	3600	3600
Torque @ max cont. pressure (lb-in)	0.08 - 0.38	0.24 - 0.78	0.24 - 0.78	0.63 - 1.40	0.63 - 1.40	1.54 - 2.16	1.54 - 2.16

Double Motor Model Series	M4DC	M4SDC
Displacement (cm^3/rev) (in^3/rev)	89.5 - 224.5 5.46 - 13.70	89.5 - 224.5 5.46 - 13.70
Max cont. pressure (bar) (psi)	175 2535	230 3335
Max op speed (RPM)	4000	4000
Torque @ max cont. pressure (lb-in)	0.87 - 2.18	0.87 - 2.18

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M5 Fixed Displacement Motors

Keep the M5 fixed displacement vane motors in mind when your application requires radial and/or axial shaft loads. The fan-drive version comes equipped with a rugged double row bearing that can eliminate the need for external supports. An integrated proportional valve option provides speed control for fan circuits. Both fan-drive and standard versions use the same high performance cartridge, giving repeatable speed at specified flows.

Single Motor Model Series	M5AF	M5BS	M5BF
Displacement (cm^3/rev) (in^3/rev)	6.3 - 25 .38 - 1.53	12 - 45 .73 - 2.75	12 - 45 .73 - 2.75
Max cont. pressure (bar) (psi)	300 4350	320 4650	320 4650
Max op speed (RPM)	6000	6000	6000
Torque @ max cont. pressure (lb-in)	0.060 - 0.242	0.116 - 0.437	0.116 - 0.437

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Motors – High Speed

M2 Series

- High starting torque typically 90% of running torque
- Smooth output torque throughout the entire speed range
- Bi-directional operation
- High pressure shaft seal
- Standard SAE mounting
- Long life and quiet operation
- Heavy duty bearings

Frame size M2	-085	-127	-169	-254	-339	-508
Displacement (cm^3/rev) (in^3/rev)	13.9 0.85	20.8 1.27	27.7 1.69	41.6 2.54	55.6 3.39	83.2 5.08
Max continuous pressure (bar) (psi)	138 2000	138 2000	138 2000	138 2000	138 2000	69 1000
Max intermittent pressure[1] (bar) (psi)	166 2400	166 2400	166 2400	166 2400	166 2400	97 1400
Max transient pressure[2] (bar) (psi)	207 3000	207 3000	207 3000	207 3000	207 3000	117 1700
Recommended speeds (RPM)	50-5000	40-4000	36-3600	30-3000	20-2000	15-1500
Torque @ max cont. pressure (Nm) (lb-in)	26 230	44 390	56 500	87 770	113 1000	79 700

1 Intermittent conditions are to be less than 10% of each minute.
2 Transient conditions are to be less than 1% of each minute.
Minimum speeds based on constant load. Consult factory for speeds outside range.

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M4 Series

- High starting torque typically 90% of running torque
- Smooth output torque throughout the entire speed range
- Bi-directional operation
- High pressure shaft seal
- Standard SAE mounting
- Long life and quiet operation
- Heavy duty bearings

Frame size M4	-015	-030	-045	-060	-075
Displacement (cm^3/rev) (in^3/rev)	2.45 0.15	4.91 0.30	7.37 0.45	9.83 0.60	12.29 0.75
Max continuous pressure (bar) (psi)	138 2000	138 2000	138 2000	138 2000	138 2000
Max intermittent pressure[1] (bar) (psi)	166 2400	166 2400	166 2400	166 2400	166 2400
Max transient pressure[2] (bar) (psi)	207 3000	207 3000	207 3000	207 3000	207 3000
Recommended speeds (RPM)	75-7500	50-5000	50-5000	36-3600	30-3000
Torque @ max cont. pressure (Nm) (lb-in)	4 39	10 90	16 140	20 180	25 225

1 Intermittent conditions are to be less than 10% of each minute.
2 Transient conditions are to be less than 1% of each minute.
Minimum speeds based on constant load. Consult factory for speeds outside range.

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Motors – Fixed Displacement Bent-Axis Piston

F11

F11 is the well proven bent-axis, fixed displacement heavy-duty motor/ pump series. They can be used in numerous applications in on both open and closed loop circuits.

- Very high motor operating speeds
- Pressures to 420 bar (6000 psi)
- Efficient (low losses)
- Accepts high external shaft loads
- SAE, ISO and Cartridge mount available
- Compact, lightweight motor and pump
- Integral anti-cavitation valves available on certain displacements
- Good resistance to vibrations and temperature shocks
- Proven reliability
- Easy to service with very few moving parts
- Heavy duty roller bearings

Frame size F11	**-5**	**-6**	**-10**	**-12**	**-14**	**-19**
Displacement (cm^3/rev)	4.9	6.0	9.8	12.5	14.3	19.0
Operating Pressure Max intermittent[1] (bar) Max continuous (bar)	 420 350	 420 350	 420 350	 420 350	 420 350	 420 350
Motor Operating Speed (RPM) Max intermittent[1] Max continuous Min continuous	 14000 12800 50	 11200 10200 50	 11200 10200 50	 10300 9400 50	 9900 9000 50	 8900 8100 50
Max Pump Selfpriming Speed[2] L or R function; max (RPM)	 4600	 4600	 4200	 3900	 3900	 3500
Motor Input Flow Max intermittent[1] (l/min) Max continuous (l/min)	 69 63	 67 61	 110 100	 129 118	 142 129	 169 154
Main Circuit Temp.[3] Max (°C) Min (°C)	 80 -40	 80 -40	 80 -40	 80 -40	 80 -40	 80 -40
Theoretical Torque at 100 bar (Nm)	7.8	9.5	15.6	19.8	22.7	30.2
Mass Moment of Inertia ($x10^{-3}$) (kg m^2)	0.16	0.39	0.39	0.40	0.42	1.1
Weight (kg)	4.7	7.5	7.5	8.2	8.3	11

1 Intermittent conditions are to be less than 10% of each minute.
2 Transient conditions are to be less than 1% of each minute.
Minimum speeds based on constant load. Consult factory for speeds outside range.

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Motors – Fixed Displacement Bent-Axis Piston

F12

Series F12 is the high performance bent-axis, fixed displacement heavy-duty motor/pump series. They can be used in numerous applications at unusually high shaft speeds.

- Very high motor operating speeds
- Pressures to 480 bar (7000 psi)
- High starting torque
- Very high power capability
- High overall efficiency
- Compact, lightweight motor and pump
- Laminated piston ring provides low internal leakage and thermal shock resistance
- Accessory valves available
- ISO, SAE and cartridge versions available
- Proven reliability
- Easy to service with very few moving parts
- Super-shockless swing relief valve

Frame size F12	-30	-40	-60	-80	-90	-110	-125	-150	-250
Displacement (cm^3/rev) (in^3/rev)	30.0 1.83	40.0 2.44	59.8 3.65	80.4 4.90	93.0 5.7	110.1 6.72	125.0 7.6	150.0 9.15	242.0 14.80
Max continuous pressure (bar) (psi)	420 6000	420 6000	420 6000	420 6000	420 6000	420 6000	420 6000	350 5000	350 5000
Max operating speed (RPM)	6700	6100	5300	4800	4600	4400	4200	3200	2700

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Motors – Fixed Displacement Low Speed High Torque

Torqmotor™ and Brake Motors

BG, BH

- High volumetric efficiency
- Full flow spline cooling
- High pressure shaft seal
- High flow shaft seal cooling
- High starting torque
- High side load capacity
- Long life

Spring Applied, Hydraulically Released Brakes

Frame size BG	-0140	-0170	-0195	-0240	-0280	-0310	-0335	-0405	-0475	-0530	-0625	-0785	-0960
Displacement (cm/rev) (in/rev)	141 8.6	169 10.3	195 11.9	238 14.5	280 17.1	310 18.9	337 20.6	405 24.7	477 29.1	528 32.3	623 38.0	786 48.0	959 58.5
Max cont. pressure (bar) (psi)	207 3000	207 3000	207 3000	207 3000	207 3000	207 3000	207 3000	172 2500	138 2000	138 2000	121 1750	103 1500	69 1000
Max operating speed (RPM)	660	554	477	393	334	303	277	232	237	213	182	143	118

Rated holding capacity: 1800 Nm (16,000 in lbs)

BG Specs | BG PDF | BH Specs | BH PDF

Motors – Piston

Gold Cup®

- Compact fixed or variable displacement design
- Visual indicator is standard on variable motors
- Reverse compensator option for high inertia loads
- Versatile controls – can be located on either side of pump or motor for maximum freedom of design
- Dampened low inertia rocker cam – more stable, quieter and faster than other designs
- Precision barrel bearing, a distinctive Parker Denison Hydraulics feature for over 30 years – permits high speeds, high pressure and provides long life
- One piece stroking vane/cam means no lost motion, zero backlash, better control, and no linkages to wear out
- Conforms to SAE mounting standards. These products are qualified to meet Military specifications MIL-P-17869A and MIL-S-901-C Grade A

Motor Performance Data

Model Series	M6	M7	M8	M11	M14	M24	M30
Displacement	98.3 cc/r	118.8 cc/r	131.1 cc/r	180.3 cc/r	229.5 cc/r	403.2 cc/r	501.5 cc/r
Max. continuous pressure (psi)	5000	5000	5000	5000	5000	5000*	5000*
Max. intermittent pressure** (psi)	6000	6000	5000	6000	6000	5000*	5000*
Maximum rated shaft speed (RPM)	3000	3000	2100	2400	2400	2100***	1800
Input flow required for 1800 RPM (GPM)	47	57	62	86	109	192	238
Output torque at maximum rated pressure (lb·in)	4327	5348	5767	8146	10,410	18,320	23,000
Output horsepower @ max. continuous pressure and 1800 RPM and 40cSt petroleum oil	123	153	166	232	297	523	657

* Variable speed. Higher servo pressure may be required.
** 10% of operating time, not exceeding 6 successive seconds.
*** On HF-1 Fluids, 1800 RPM max on HF-0 Fluids

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Motors Variable Displacement Axial Piston

V12

- Very high operating speeds
- Displacement ratio 5:1
- Pressures to 482 bar (7000 psi)
- Very high power capability
- High starting torque
- Low weight
- High overall efficiency
- Axial or side ports
- Controls available for most needs
- ISO, SAE and cartridge versions

Frame size V12	-60	-80
Displacement: 35° (max): (cm^3/rev) (in^3/rev) 6.5° (min): (cm^3/rev) (in^3/rev)	60 3.66 12 0.73	80 4.88 16 0.98
Max continuous pressure (bar) (psi)	420 6000	420 6000
Max operating speed* (RPM)	5600	5000

*At reduced displacement

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V14

- For open or closed circuits
- High starting torque and smooth operation
- Increased shaft speeds and improved support
- Improved sealing
- Faster control response
- Enlarged setting piston
- Tapered roller bearings
- Wide displacement range – 5:1
- Small envelope size and high power-to-weight ratio
- Robust motor with long service life and proven reliability

Frame size* V14	-110	-160
Displacement: 35° (max): (cm^3/rev) (in^3/rev) 6.5° (min): (cm^3/rev) (in^3/rev)	110 6.71 22 1.34	160 9.76 32 1.95
Max continuous pressure (bar) (psi)	420 6000	420 6000
Max operating speed** (RPM)	5700	5000

*Additional frame sizes in preparation.
**At reduced displacement

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Power Units

Low-Profile V-Pak

D, H and V-Pak

Low-Profile V-Pak

- Vertical design saves floor space
- Submerged pump for quiet operation and elimination of potential leak point
- Precision pump mounting adaptors to ensure proper alignment and operation
- Suction strainer on inlet protects pump from contamination
- Pressure gauge with shut-off and oil level gauge with thermometer for improved diagnostics
- Standard safety relief valve to protect pump from system shock
- Breather/fill cap used to control ingression of contaminants
- SAE straight thread connections and ports used to prevent leaks

Low-Profile V-Pak features:

- Cleanout cover for easy access to reservoir

D, H and V-Pak features:

- Remote compensator to adjust system pressure
- 1800 RPM motor supplies more flow at less cost
- Single removable topplate for easy access and service

Non standard options can be quoted on request.

Series	Design	Pressure bar (psi)	Max. Flow LPM (GPM)	Tank (Gallons)	Motor (HP)
D-Pak	Vertical	207 (3000)	10.2 (2.7) @ 1725 RPM	5	0.5 – 3
H-Pak	Vertical	207 (3000)	47 (12.3) @ 1725 RPM	10, 20, 30, 40	0.5 – 20
V-Pak	Vertical	207 (3000)	59 (15.6) @ 1725 RPM	10, 20, 30, 40	2 – 20
V-Pak	Low Profile	207 (3000)	42 (11) – 136.7 (36.1) @ 1725 RPM	80	7.5 – 40

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Pumps – Piston

PAVC

PAVC piston pumps are ideal for many industrial applications with operating pressure up to 3000 psi. These compact pumps feature convenient cartridge style controls and carry a full pressure rating on most water glycol fluids.

- High strength cast-iron housing
- Built-in supercharger
- High speed capability - 3000 RPM (2600 RPM PAVC100)
- Sealed shaft bearing
- Two piece design for ease of service
- Cartridge bronze clad port plate
- Airbleed standard for quick priming
- Hydrodynamic cylinder barrel bearing
- Thru-shaft (PAVC100 only)
- Full pressure rating on water glycol fluids
- Pump case and shaft seal – see inlet pressure only
- Filter and/or cool drain line (100 psi Max.)

Frame size PAVC	-33	-38	-65	-100
Displacement (cm^3/rev) (in^3/rev)	33 2.0	38 2.3	65 4.0	100 6.1
Max continuous pressure (bar) (psi)	207 3000	207 3000	207 3000	207 3000
Max self priming speed at 0 psi gauge (RPM)	3000	3000	3000	2600

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Pumps – Piston

PD Series

- Compact-small package size
- Quiet operation
- Low flow ripple to further reduce noise
- Elastomer seals that eliminate gaskets and external leakage
- High operating efficiency for lower power consumption and reduced heat generation
- Simple hydraulic controls with “no-leak” adjustments
- SAE standard mounting flanges and ports
- Long life, tapered-roller shaft bearings
- Long life, low friction, hydrostatically balanced cam bearings
- Full power through-drive capability
- End or side inlet and outlet ports
- Case drain ports for horizontal or vertical, shaft-up mounting
- Optional minimum and maximum displacement adjustments
- Optional case-to-inlet check valve to extend shaft seal life
- Easy to service

Frame size PD	-018	-028	-045	-060	-075	-100	-140
Displacement (cm^3/rev) (in^3/rev)	18 1.10	28 1.71	45 2.75	60 3.66	75 4.6	100 6.0	140 8.5
Max continuous pressure (bar) (psi)	280 4000	280 4000	280 4000	280 4000	280 4000	280 4000	280 4000
Self priming speed @ 1 bar inlet pressure	1800	1800	1800	1800	1800	1800	1800

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PVplus Series

- High strength cast iron housing
- Modular controls
- Large control piston
- Thru-shaft option
- 9 piston design
- Multiple pressure control
- English and metric mounting features
- Reduced flow and pressure ripple

Model Series	Displacement in^3/rev (cc/rev)	Max. Outlet Pressure psi (bar)	Max Rated Drive Speed RPM	Pump Flow 1800 RPM & 100 psi GPM (LPM)	Input Horsepower 1800 RPM & 5000 psi HP (KW)
PV016	0.98 (16)	5000 (350)	3000 RPM	8 (30.3)	25 (18.6)
PV020	1.22 (20)	5000 (350)	3000 RPM	9.5 (36.0)	31 (23.1)
PV023	1.40 (23)	5000 (350)	3000 RPM	11 (41.6)	34 (25.4)
PV028	1.71 (28)	5000 (350)	3000 RPM	13 (49.2)	40 (29.8)
PV032	1.95 (32)	5000 (350)	2800 RPM	15 (56.8)	47 (35.0)
PV040	2.44 (40)	5000 (350)	2800 RPM	19 (71.9)	62 (46.2)
PV046	2.81 (46)	5000 (350)	2800 RPM	22 (83.3)	67 (50.0)
PV063	3.84 (63)	5000 (350)	2800 RPM	30 (113.6)	94 (70.1)
PV080	4.88 (80)	5000 (350)	2500 RPM	38 (143.9)	120 (89.5)
PV092	5.61 (92)	5000 (350)	2300 RPM	44 (166.6)	184 (137.2)
PV140	8.54 (140)	5000 (350)	2400 RPM	67 (253.6)	200 (149.1)
PV180	10.98 (180)	5000 (350)	2200 RPM	86 (235.5)	282 (210.3)
PV270	16.48 (270)	5000 (350)	1800 RPM	128 (484.5)	400 (298.3)
PV360	21.97 (360)	5000 (350)	1750 RPM	160 (605.7)	500 (372.8)

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Pumps – Piston

F1/F2

F1 fixed displacement piston pumps are widely used on truck applications with operating pressure up to 5000 psi. These lightweight, efficient pumps were designed specifically for truck applications including cargo cranes, hook loaders, forest cranes and concrete mixers.

- Pressures up to 350 bar (5000 psi)
- High power capability
- Twin flow version available
- High self-priming speed
- Easy to install
- Easy to service

Series F1	25	41	51	61	81	101
Displacement (cm^3/rev) (in^3/rev)	25.6 1.59	40.9 2.50	51.1 3.11	59.5 3.66	81.6 5.00	102.9 6.29
Max. operating pressure (bar) (psi)	350 5000	350 5000	350 5000	350 5000	350 5000	350 5000
Shaft speed (RPM): unloaded at 350 bar[2]	2700 2600	2700 2400	2700 2200	2700 2200	2300 2000[3]	2300 1800[3]
Torque[1] at 350 bar (Nm) (lb-in)	142 1261	227 2016	284 2522	331 2939	453 4023	572 5079
Input power, continuous (kW) (hp)	31 39	46 57	52 67	61 84	76 102	86 115

1 Theoretical value
2 Valid at an inlet pressure of 1.0 bar (abs.) when operating on mineral oil at a viscosity of 30 mm2/s (cSt).
3 Valid with 2½" inlet (suction) line. With 2" suction line: F1-80 – max 1400 RPM. F1-101 – max 1200 RPM.

Series F2	42/42	55/28	53/53	70/35	70/70
Displacement, Port A/Port B (cm^3/rev) (in^3/rev)	43/41 2.62/2.50	55/28 3.36/1.71	54/52 3.30/3.17	69/36 4.27/2.14	68/68 4.15/4.15
Max. operating pressure (bar) (psi)	350 5000	350 5000	350 5000	350 5000	300 4350
Max. shaft speed, unloaded (RPM)	2550	2550	2550	2550	2550
Max. self-priming speed (RPM): Ports A[1, 2] and B[1, 2] pressurized Port A[2] unloaded, pressure in Port B	1800 2100	1800 2100	1800 2100	1800 2100	1650 2100
Input power, continuous (kW) (hp)	70 118	70 118	88 147	88 147	112 150

1 Valid with 2½" inlet line, q = 120 l/min. With 2" inlet line: max 1400 RPM.
2 Measured at 1.0 bar abs. inlet pressure.

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View F2 Specs

Pumps – Piston

Premier Series

- Highest rated pressure of any comparable pump available in the market place today
- Full power thru-drive capability allows two (2) pumps of the same displacement to be run in tandem at full rated pressure and flow, simultaneously
- Fast, compensator response minimizes pressure overshoot
- Two stage, pilot operated compensator provides sharp pressure cutoff at compensator setting, typically regulating pressure within 50 psi (3.5 bar) Compensator may easily be remotely controlled or used in load sensing circuits
- Precision barrel bearing absorbs radial forces, allowing longer operation at higher pressure and higher speeds
- Piston design minimizes trapped oil volume to maximize efficiency
- Angled barrel ports reduce the piston circle diameter, which allows oil to enter at reduced velocity. This allows the pump to run faster, with atmospheric inlet pressure
- Spherical port plate and barrel face provides support to barrel to offset forces from angled ports
- Large suction port reduces inlet flow velocity to allow the pumps to run at higher speeds with atmospheric inlet
- Standard SAE split flange with inch or metric bolts, depending on pump version (SAE or metric)
- Conforms to SAE or ISO mounting standards
- Damped low inertia rocker cam allows very quick compensation, resulting in more stable and quieter pump
- Heavy duty shaft bearing to absorb side and thrust loads
- High pressure shaft seal allows higher case pressure without external leakage. Note: it is always advisable to maintain the lowest possible case pressure
- Drive shaft options include keyed or splined in SAE, ISO and DIN
- A wide variety of optional controls are available and are designed with simplicity and a maximum of common elements
- Compatible with many alternative fluid types

Model Series	P05/P080	P07/P110	P09/P140	P12/P200	P16/P260
Displacement (cm^3/rev) (in^3/rev)	80.3 cc/rev 5 in^3/rev	109.8 cc/rev 7 in^3/rev	140.9 cc/rev 9 in^3/rev	200.0 cc/rev 12 in^3/rev	262.2 cc/rev 16 in^3/rev
Max. continuous pressure (bar) (psi)	420 6000	420 6000	420 6000	420 6000	420 6000
Max. intermittent pressure at 350 (bar^2) (psi)	500 7250	500 7250	500 7250	500 7250	500 7250
Max. rated drive speed (RPM)	2550	2450	2300	2100	1850
Pump flow 1800 RPM & 100 psi (lpm) (gpm)	 144 38	 197 52	 252 66.5	 360 95	 469 124
Input horsepower 1800 RPM & 5000 psi (kW) (hp)	 84 113	 128 171	 162 217	 230 308	 301 404

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Pumps – Piston

Gold Cup®

- Quick change valve block – easy to service/replace
- Modular controls – easy to service and change
- Versatile controls – can be located on either side of pump or motor for maximum freedom of design
- Dampened low inertia rocker cam – more stable, quieter and faster than other designs
- Exclusive zero – backlash rotary servo design – lifetime accuracy
- Field adjustable compensator override – easily adjusted without removing from machinery
- Precision barrel bearing, a distinctive Parker Denison Hydraulics feature for over 30 years – permits high speeds, high pressure and provides long life
- Patented ring style replenishing checks fastest operation with no sliding poppets or parts and low pressure drop
- Auxiliary pump can be changed without disassembling the transmission
- One piece stroking vane/cam means no lost motion, zero backlash, better control, and no linkages to wear out
- Conforms to SAE mounting standards. These products are qualified to meet Military specifications MIL-P-17869A and MIL-S-901-C Grade A
- Fastest compensator response: Gives maximum of 10% pressure overshoot at rated conditions (guaranteed times under all conditions faster response times possible depending upon application)

Pump Performance Data

Model Series	P6	P7	P8	P11	P14	P24	P30
Displacement	98.3 cc/r	118.8 cc/r	131.1 cc/r	180.3 cc/r	229.5 cc/r	403.2 cc/r	501.5 cc/r
Max. continuous pressure (psi)	5000	5000	5000	5000	5000	5000*	5000*
Max. intermittent pressure** (psi)	6000	6000	5000	6000	6000	5000*	5000*
Rated drive speed (RPM)	3000	3000	2100	2400	2400	2100***	1800
Flow @ 1800 RPM (GPM)	47	57	62	86	109	192	238
Input horsepower @ Max. continuous pressure and 1800 RPM and 40cSt petroleum oil	153	183	145	275	348	626	765

*Variable speed. Higher servo pressure may be required.
**10% of operating time, not exceeding 6 successive seconds.
***On HF-1 Fluids, 1800 RPM max on HF-0 Fluids

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Pumps – Hybrid

Variable Piston/Fixed Vane

T6H Series

The hybrid pump is a combination of fixed displacement vane pump B, C, D cartridges combined with a variable cartridge of PV20 or PV29 piston pump. The cartridges are driven by a common shaft without coupling in between. They have a large common suction port and two or three independent outlet ports: One for the piston, one or two for the vane pump.

- Very compact
- High pressure ratings
- Low noise
- Independent outlets for fixed and variable flow allow simultaneous cycles
- Internal or external drain
- Choice of controls
- Wide range of acceptable fluids

Frame Size T6H***	T6H20B***	T6H20C***	T6H29B***	T6H29C***	T6H29D***	T6H29DB***
Displacement* (cm^3/rev) (in^3/rev)	5.7 – 92.9 2.97 – 5.67	10.8 – 142.9 3.28 – 8.72	5.7 – 111.9 4.13 – 6.83	10.8 – 161.9 4.44 – 9.88	47.5 – 219.9 6.68 – 13.42	53.2 – 269.9 7.03 – 16.47
Max pressure** (bar) (psi)	241 3500	241 3500	207 3000	207 3000	207 3000	207 3000
Max speed** (RPM)	2600	2600	2400	2400	2400	2400

*Piston pump at full displacement
**Lower for larger displacements. See catalog
***See catalog on CD for complete information

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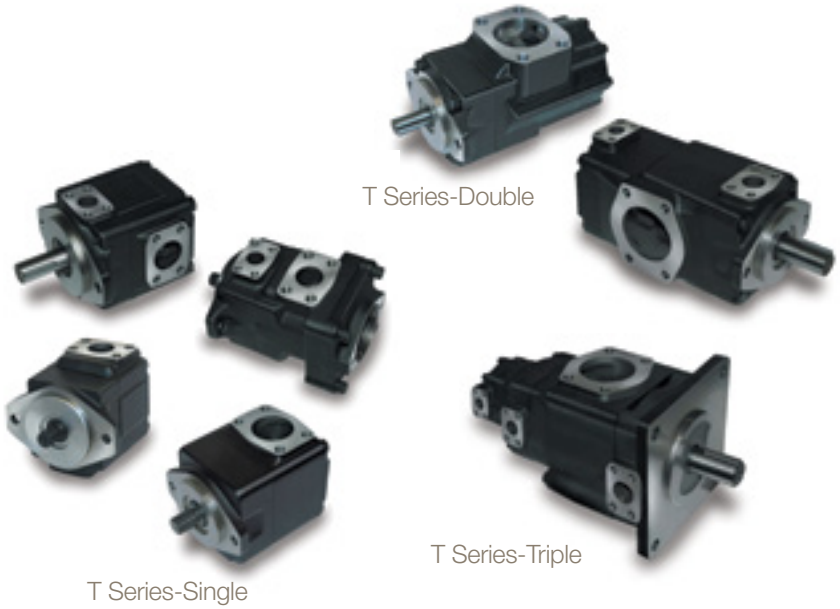
Pumps – Fixed Displacement Vane

T Series



The T Series fixed displacement vane pump is the highest performance pump of its kind. The balanced design and double lip vane technology are key features in providing a contamination resistant and reliable pump.

- Fixed displacement vane
- Silent technology
- Wide range of displacements
- User-friendly – easy conversions and evolutions
- Wide number of shafts available
- Double shaft seal option possible
- Drive train options available (SAE-A/B/C)

Frame Size T-Single	T7AS	T7ASW	T7B - T7BS	T6C	T7D - T7DS	T7E - T7ES
Dispalcement (ml/rev)	5.8-24.9	26.0-40.0	5.8-50.0	10.8-100.0	44.0-158.0	132.3-268.7
Max. (bar)	300	300	300	275	300	240
Max. speed (RPM)	3600	3600	3600	2800	3000	2200

Frame Size T-Double	T7BB - T7BBS	T6CC	T67CB	T7DB - T7DBS	T67DC	T7DD - T7DDS	T7EB - T7EBS	T67EC	T7ED - T7EDS
Dispalcement (ml/rev)	5.8-50.0	10.8-100.0	5.8-100.0	44.0-158.0	44.0-158.0	44.0-158.0	132.3-268.7	132.3-268.7	132.3-268.7
Max. pressure (bar)	290	290	320	300	300	300	240	240	300
Max. speed (RPM)	2200	2200	2200	2200	2200	2200	2200	2200	2200

Frame Size T-Triple	T7DBB - T7DBBS	T7DCB - T7DCBS	T7DCC - T7DCCS	T7DDB - T7DDBS	T67DDCS	T7EEDB - T7EDBS	T67EDC - T67EDCS	T7EEC - T7EECS
Dispalcement (ml/rev)	44.0-158.0	44.0-158.0	44.0-158.0	44.0-158.0	44.0-158.0	132.3-268.7	132.3-268.7	132.3-268.7
Max. pressure (bar)	320	275	275	300	300	240	240	240
Max. speed (RPM)	2200	2200	2200	2200	2200	2200	2200	2200

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Pumps – Fixed Displacement Vane

SDV Single

The SDV Series includes fixed displacement vane pump ideal for low to mid pressure applications. Their compact design and low noise features make them well suited for filter carts, test stands and remote pilot pumps.

- Two compact frame sizes
- Low noise
- 100% tested
- Easy to convert or repair

Series SDV10	-1	-2	-3	-4	-5	-6	-7
Displacement (cm^3/rev) (in^3/rev)	3.3 0.2	6.6 0.4	9.8 0.6	13.1 0.8	16.4 1.0	19.5 1.2	22.8 1.4
Max. continuous pressure (bar) (psi)	175 2500	175 2500	175 2500	175 2500	175 2500	150 2200	140 2000
Max. speed (RPM)	1800	1800	1800	1800	1800	1800	1800

Series SDV20	-6	-7	-8	-9	-11	-12	-13
Displacement (cm^3/rev) (in^3/rev)	19.5 1.2	22.8 1.4	26.5 1.6	29.7 1.8	36.4 2.2	39.0 2.4	42.4 2.6
Max. continuous pressure (bar) (psi)	175 2500	175 2500	175 2500	175 2500	175 2500	150 2200	150 2200
Max. speed (RPM)	1800	1800	1800	1800	1800	1800	1800

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SDV Double

The SDV Series includes fixed displacement vane pumps ideal for low to mid-pressure applications. A double pump provides the flexibility of two different displacements within one housing. Compact design and low-noise features make them well suited for filter carts, test stands, remote pilot pumps, and for hi/lo circuits.

- Two compact frame sizes
- Low noise
- 100% tested
- Easy to convert or repair

Series SDV2010	-7	-8	-9	-11	-12	-13
Displacement* (cm^3/rev) (in^3/rev)	26.1 - 45.6 1.6 - 2.8	29.8 - 49.3 1.8 - 3.0	33.0 - 52.5 2.0 - 3.2	39.7 - 59.2 2.4 - 3.6	42.3 - 61.8 2.6 - 3.8	45.7 - 65.2 2.8 - 4.0
Max. continuous pressure (bar) (psi)	175 2500	175 2500	175 2500	175 2500	150 2200	150 2200
Max. speed (RPM)	1800	1800	1800	1800	1800	1800

*Range calculated by adding displacement for SDV20 to range of displacements for SDV10.

Series SDV2020	-7	-8	-9	-11	-12	-13
Displacement* (cm^3/rev) (in^3/rev)	42.3 - 52.5 2.6 - 3.2	46.0 - 56.2 2.8 - 3.4	49.2 - 59.4 3.0 - 3.6	55.9 - 72.8 3.4 - 4.4	58.5 - 75.4 3.6 - 4.6	61.9 - 78.8 3.8 - 4.8
Max. continuous pressure (bar) (psi)	175 2500	175 2500	175 2500	175 2500	150 2200	150 2200
Max. speed (RPM)	1800	1800	1800	1800	1800	1800

*Range calculated by adding displacement for SDV20 (shaft end) to range of SDV20 (cover end).

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Pumps/Motors – Gear

PGP 300 Series

- Three-piece cast iron construction
- Low friction bushing design
- Single, multiple, piggyback and thru-drive assemblies
- Heavy duty application
- Long life in severe operating environments
- Integrated or bolt-on valve options available
- Direct clutch mount available
- Can be configured as pump or motor

Frame size PGP315/PGM315	-05	-06	-07	-08	-10	-11	-12	-13	-15	-16	-17	-18	-20
Displacement (cm^3/rev) (in^3/rev)	10.2 .620	12.7 .775	15.2 .930	17.8 1.09	20.3 1.24	22.9 1.40	25.4 1.55	27.9 1.71	30.5 1.86	33.0 2.02	35.6 2.17	38.1 2.33	40.6 2.48
Max continuous pressure (bar) (psi)	241 3500	241 3500	241 3500	241 3500	241 3500	241 3500	241 3500	241 3500	228 3300	214 3100	200 2900	186 2700	172 2500
Max speed (RPM)	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000

Frame size PGP330/PGM330	-05	-07	-10	-12	-15	-17	-20
Displacement (cm^3/rev) (in^3/rev)	16.1 .985	24.2 1.47	32.3 1.97	40.4 2.46	48.4 2.95	56.5 3.44	64.6 3.94
Max continuous pressure (bar) (psi)	241 3500	241 3500	241 3500	241 3500	241 3500	224 3250	207 3000
Max speed (RPM)	3000	3000	3000	3000	3000	3000	3000

Frame size PGP350/PGM350	-05	-07	-10	-12	-15	-17	-20	-22	-25
Displacement (cm^3/rev) (in^3/rev)	20.9 1.28	31.3 1.91	41.8 2.55	52.2 3.19	62.7 3.82	73.1 4.46	83.6 5.10	94.0 5.73	104.5 6.38
Max continuous pressure (bar) (psi)	241 3500	241 3500	241 3500	241 3500	241 3500	224 3250	207 3000	190 2750	172 2500
Max speed (RPM)	2400	2400	2400	2400	2400	2400	2400	2400	2400

Frame size PGP365/PGM365	-07	-10	-12	-15	-17	-20	-22	-25
Displacement (cm^3/rev) (in^3/rev)	44.3 2.70	59.0 3.60	73.8 4.50	88.5 5.40	103.3 6.30	118.0 7.20	132.8 8.10	147.5 9.00
Max continuous pressure (bar) (psi)	241 3500	241 3500	241 3500	241 3500	241 3500	241 3500	224 3250	207 3000
Max speed (RPM)	2400	2400	2400	2400	2400	2400	2400	2400

*Functioning as motor

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Pumps/Motors – Gear

PGP 500 Series

- Superior performance
- High efficiency
- Low noise operation at high operating pressures
- International mounts and connections
- Integrated valve capabilities
- Common inlet multiple pump configurations
- Can be configured as a pump or motor

Frame size PGP505/PGM505	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12
Displacement (cm^3/rev) (in^3/rev)	2 .12	3 .18	4 .24	5 .31	6 .37	7 .43	8 .49	9 .55	10 .61	11 .67	12 .73
Max pressure (bar) (psi)	275 3988	275 3988	275 3988	275 3988	275 3988	275 3988	275 3988	250 3625	250 3625	250 3625	220 3190
Max speed at 0 inlet & max outlet pressure (RPM)	4000	4000	4000	4000	3600	3300	3000	2900	2800	2400	2400

Frame size PGP511/PGM511	-6	-7	-8	-10	-11	-14	-16	-18	-19	-21	-23	-27	-28	-31
Displacement (cm^3/rev) (in^3/rev)	6 .37	7 .43	8 .49	10 .61	11 .67	14 .85	16 .98	18 1.10	19 1.16	21 1.28	23 1.40	27 1.65	28 1.71	31 1.89
Max speed at 0 inlet & max outlet pressure (RPM)	4000	4000	4000	3600	3600	3300	3000	3000	3000	2800	2800	2400	2300	2300
Max continuous pressure (bar) (psi)	250 3625	250 3625	250 3625	250 3625	250 3625	250 3625	250 3625	250 3625	250 3625	235 3400	225 3265	190 2755	185 2685	165 2400

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Pumps/Motors – Gear

PGP 600 Series

610

- Interlocking body design
- 12 tooth gears, bronze thrust plates
- Tandem, triple and cross-frame pumps available
- Common inlets available for tandem and triple pumps
- Continuous operating pressures up to 275 bar
- Production run-in available to suit OEM application conditions and to provide optimized volumetric efficiencies
- Pressure balanced design for high efficiency
- Reduced system noise levels compared to earlier models and competitor's pumps
- High power through-drive capability
- Wide range of integral valves for power steering, power brakes, fan drives and implement hydraulics
- Load-sense and solenoid-operated unloading valves

620

640

620 Tandem

Frame Size PGP/PGM610	0070	0100	0140	0160	0180	0210	0230	0260	0280	0320
Displacement (cc/rev) (in^3/rev)	7 .43	10 .61	14 .85	16 .98	18 1.10	21 1.28	23 1.40	26 1.59	28 1.71	32 1.95
Continuous pressure (bar) (psi)	275 3989	275 3989	275 3989	275 3989	265 3843	245 3553	235 3408	215 3118	200 2901	175 2538

Frame Size PGP/PGM620	0190	0230	0260	0290	0330	0370	0410	0440	0500
Displacement (cc/rev) (in^3/rev)	19 1.16	23 1.40	26 1.59	29 1.77	33 2.01	37 2.26	41 2.50	44 2.68	50 3.05
Continuous pressure (bar) (psi)	275 3989	275 3989	275 3989	275 3989	275 3989	250 3626	220 3191	210 3046	210 3046

Frame Size PGP/PGM640	0300	0350	0450	0550	0650	0750	0800
Displacement (cc/rev) (in^3/rev)	30 1.83	35 2.14	45 2.75	55 3.36	65 3.97	75 4.58	80 4.88
Continuous pressure (bar) (psi)	275 3989	275 3989	275 3989	275 3989	275 3989	235 3408	215 3118

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Pumps/Motors – Gear

P16 Series

- Aluminum flange and cover
- Cast iron gear plate
- Clockwise or counter-clockwise rotation
- Flows to 38 GPM per section
- Journal bearings
- Available with fluorocarbon seals
- Available in tandem and piggy-back configurations
- Integral priority valve available
- Electric clutches available

Frame size P16	-45	-65	-85	-100	-115	-150	-180	-200
Displacement (cm^3/rev) (in^3/rev)	14.4 0.88	20.8 1.27	27.3 1.67	32.1 1.96	36.7 2.24	48.1 2.93	57.4 3.51	63.9 3.90
Max continuous pressure (bar) (psi)	207 3000	207 3000	207 3000	207 3000	207 3000	207 3000	152 2200	138 2000
Max speed (RPM)	3600	3600	3400	3300	3100	2800	2500	2200

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D Series

- Pressure-loaded design
- Efficient, simple design – few moving parts
- Exceptionally compact and lightweight for their capacity
- Efficient at high pressure operation
- Resistant to cavitation effects
- High tolerance to system contamination
- Reliable under cold weather operation
- Sleeve bearing construction
- Multi-fluid compatibility
- Optional built-in relief valve
- Speeds to 4000 RPM
- Flows to 8.12 GPM

Frame size D	05	07	09	11	14	17	22	27
Displacement (cm^3/rev) (in^3/rev)	1.87 0.114	2.76 0.168	3.45 0.21	4.29 0.262	5.38 0.329	6.62 0.404	8.55 0.522	10.5 0.641
Max continuous pressure (bar) (psi)	172 2500	172 2500	172 2500	172 2500	172 2500	172 2500	172 2500	138 2000
Max speed (RPM)	4000	4000	4000	4000	4000	4000	4000	3000

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H Series

- Pressure-loaded design
- Efficient, simple design – few moving parts
- Exceptionally compact and lightweight for their capacity
- Efficient at high pressure operation
- Resistant to cavitation effects
- High tolerance to system contamination
- Reliable under cold weather operation
- Sleeve bearing construction
- Multi-fluid compatibility
- Optional built-in relief valve
- Speeds to 4000 RPM
- Flows to 33.50 GPM

Frame size P16	25	31	39	49	62	77	90
Displacement (cm^3/rev) (in^3/rev)	9.88 0.603	12.35 0.754	15.44 0.842	19.3 1.178	24.14 1.473	30.18 1.842	36.5 2.227
Max continuous pressure (bar) (psi)	172 2500	172 2500	172 2500	172 2500	172 2500	138 2000	103 1500
Max speed (RPM)	4000	4000	4000	4000	3600	3600	3600

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Pumps/Motors – Gear

20 Series

- Aluminum or cast iron construction
- Clockwise or counter-clockwise rotation
- Flows to 98 GPM per section
- Journal bearings
- Available with fluorocarbon seals
- Available in tandem and piggy-back configurations
- Available with integral logic valves

Frame size 20	-150	-200	-250	-300	-350	-400	-450
Displacement (cm^3/rev) (in^3/rev)	49.5 3.02	66.2 4.04	82.9 5.06	99.1 6.05	115.9 7.07	132.4 8.08	149.1 9.10
Max continuous pressure (bar) (psi)	172 2500	172 2500	172 2500	172 2500	172 2500	172 2500	172 2500
Max speed (RPM)	2500	2500	2500	2500	2500	2500	2500

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25 Series

- Aluminum or cast iron construction
- Clockwise or counter-clockwise rotation
- Flows to 208 GPM per section
- Journal bearings
- Available with fluorocarbon seals
- Available in tandem and piggy-back configurations

Frame size 25	-300	-350	-400	-450	-500	-550	-660	-770	-950
Displacement (cm^3/rev) (in^3/rev)	99.1 6.05	115.9 7.07	132.4 8.08	149.1 9.10	164.7 10.05	181.22 11.06	219.9 13.42	254.4 15.50	315.0 19.22
Max continuous pressure (bar) (psi)	207 3000	207 3000	207 3000	207 3000	172 2500	172 2500	172* 2500*	172* 2500*	172* 2500*
Max speed (RPM)	2500	2500	2500	2500	2500	2500	2500	2500	2500

*Consult factory

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Rotary Actuators

HUB Series

HUB Series	Pressure bar (psi)	Displacement cm^3/rad (in^3/rad)	Torque Newton Meter (lb-in)
018	207 (3000)	12 (0.7)	203 (1800)
075	207 (3000)	51 (3.1)	847 (7500)
100	207 (3000)	65 (4.0)	1130 (10000)

- Designed for use in harsh environments
- Multiple valve module add-on options available - cross over vent, counter-balance & solenoid ready
- Designed for direct match mount to numerous process valve manufacturers which allows for reduced space and lower assembly costs
- Multiple shaft configurations available. Direct mounting capabilities eliminates the need for a shaft coupler, thus reducing overall size and material cost
- Developed in conjunction with several OEMs specifically in the oil & gas market for fracking applications

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HTR Series

- Rack and pinion rotary actuator provides high power at low rotational speed
- Gearing and cylinders self-contained and protected against contamination
- Standard and custom rotations available
- Full range of options

HTR Series	Pressure bar (psi)	Displacement cm^3/rad (in^3/rad)	Torque Newton Meter (lb-in)
.9	207 (3000)	6 (0.36)	102 (900)
1.8	207 (3000)	12 (0.7)	203 (1800)
3.7	207 (3000)	25 (1.5)	418 (3700)
5	207 (3000)	33 (2.0)	565 (5000)
7.5	207 (3000)	51 (3.1)	847 (7500)
10	207 (3000)	65 (4.0)	1130 (10,000)
15	207 (3000)	93 (5.7)	1695 (15,000)
22	138 (2000)	145 (8.8)	1695 (15,000)
30	207 (3000)	186 (11.3)	3390 (30,000)
45	138 (2000)	290 (17.7)	3390 (30,000)
75	207 (3000)	480 (29.3)	8474 (75,000)
150	207 (3000)	960 (58.6)	16,948 (150,000)
300	207 (3000)	1856 (113.3)	33,896 (300,000)
600	207 (3000)	3701 (226.0)	67,791 (600,000)

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LTR Series

- Rotary actuator for low pressure applications
- Rack and pinion gearing with lightweight aluminum housing
- Three positions of rotation
- Full range of options

LTR Series	Pressure bar (psi)	Displacement cm^3/rad (in^3/rad)	Torque Newton Meter (lb-in)
101	102 (1500)	7 (0.40)	67 (592)
102	68 (1000)	13 (0.80)	67 (592)
151	102 (1500)	20 (1.20)	200 (1770)
152	102 (1500)	39 (2.41)	399 (3530)
201	102 (1500)	46 (2.81)	479 (4240)
251	102 (1500)	70 (4.30)	728 (6443)
202	102 (1500)	93 (5.67)	957 (8470)
252	102 (1500)	141 (8.59)	1456 (12,885)
321	68 (1000)	187 (11.40)	1289 (11,407)
322	68 (1000)	374 (22.80)	2578 (22,813)

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Rotary Actuators

M (Mill) Series

- Non-tierod rack and pinion actuator provides dependability, improved durability and enhanced ease of maintenance
- Wide range of performance and features

M Series	Pressure bar (psi)	Displacement cm^3/rad (in^3/rad)	Torque Newton Meter (lb-in)
75	207 (3000)	442 (27)	8474 (75,000)
150	207 (3000)	901 (55)	16,948 (150,000)
300	207 (3000)	1836 (112)	33,896 (300,000)
600	207 (3000)	3669 (224)	67,791 (600,000)
1000	207 (3000)	5800 (354)	113,000 (1,000,000)
50000	207 (3000)	285,388 (17,423)	5,650,000 (50,000,000)

Contact the factory, many other sizes available

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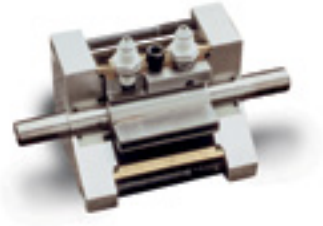
Tork-Mor Series



- Compact, single or double vane actuators
- 100 degrees rotation for double vane; 280 series rotation in single vane
- Wide range of options

Tork-Mor Series	Pressure bar (psi)	Displacement cm^3/rad (in^3/rad)	Torque Newton Meter (lb-in)
S33	34 (500)	29.48 (1.8)	90 (800)
S42	69 (1000)	60.61 (3.7)	381 (3370)
S44	51 (750)	106.47 (6.5)	463 (4100)
S46	34 (500)	160.52 (9.8)	458 (4050)
S74	69 (1000)	355.45 (21.7)	2260 (20,000)
S77	51 (750)	624.08 (38.1)	2859 (25,300)
S105	69 (1000)	1092.55 (66.7)	6926 (61,300)
S108	51 (750)	1746.11 (106.6)	8022 (71,000)
S1012	34 (500)	2617.52 (159.8)	7943 (70,300)

S – Single vane performance is listed
DS – Dual vane options can double the ratings

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Custom Engineered Products

Mega-torque units to 64 million lb-in
Dimensions: 4¼ x 5½ x 1¼ m (14 x 18 x 4 ft)

Durability features that provide 99% reliability in 10 million cycles. Custom designed to integrate as part of customer structure. Housing and shafting designed with special materials and features to carry high induced loads.

- Rotations to 1080°, variety of speeds, special shafting, mounting, and porting accommodations
- Units with minimal backlash, combined linear and rotational motion functions
- Integrated with control valve packages, position feedback for total system solutions
- Titanium, monel, stainless steels, bronzes
- Compliance to customer specs and agency certifications–ABS, FDA, UL/CE, SAE, military
- Special environments/applications – robotic, submerged, clean room, medical, PC chips
- Proprietary sizing analysis programs applied to assure safety margins, reliability predictions

Valves – Hydraulic

Pressure Control Valves

62**, 63**, 64**

665

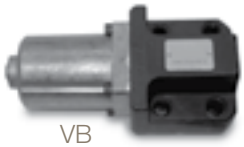
In-Line Mounted

- Right angle or in-line-style valves
- Pressure ranges between 0.25 and 250 bar (4 and 3600 psi)
- Soft-seat poppets in brass or stainless steel for near zero leaks
- Non-standard and special port styles available on request

Manifold-Mounted

- Pilot operated, normally closed, quick response and spool-type valves available
- Pressure range of 25 to 350 bar (363 to 5075 psi)
- Subplate or slip-in mounting offered
- 2 or 3 adjustment modes

VM



VB

VBY

R, RS

UR*M, US*M

PR*M

VS

S*M

R5V

R4V

R5P

R5U

R5S

R5R

R5A

Series	620	63x	64x	665
Size NPT SAE	¼" - ¾" -4 thru -12	¼" - ¾" -4 thru -12	¼" - ¾" -4 thru -12	¼" - 1" -4 thru -16
Direct acting Pilot operated				X
Working pressure (bar) (psi)	0.3 - 248 4 - 3600	0.3 - 248 4 - 3600	0.3 - 248 4 - 3600	0.3 - 248 4 - 3600
Body material Aluminum Brass Stainless steel Soft seat	 X X	 X X	 X X	 X X X

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Valves – Hydraulic

Pressure Control Valves

Series/Function	R*M	R*R	RS*M	RS*R	PR*M	S*M	UR*M	US*M	VS	VM	VBY	VB
Relief	X	X	X	X					X	X		
Sequence						X					X	X
Pressure Reducer					X							
Unloader							X					
Max. Operating Pressure (bar) (psi)	350 5075	350 5075	350 5075	350 5075	350 5075	350 5075	350 5075	350 5075	350 5075	350 5075	350 5075	350 5075
Maximum Flow NG06 LPM (GPM)									25 (7)	25 (7)	40 (11)	25 (7)
NG10 LPM (GPM)	150 (40)	250 (67)	150 (40)	250 (67)	150 (40)	150 (40)	150 (40)	150 (40)		60 (16)	160 (43)	60 (16)
NG25 LPM (GPM)	300 (80)	500 (133.3)	300 (80)	500 (133.3)	350 (80)	350 (80)	350 (80)	350 (80)				
NG32 LPM (GPM)	650 (173)	650 (173)	650 (173)	650 (173)	650 (173)	650 (173)	650 (173)	650 (173)				

Series/Function	R5V	R5R	R5U	R5S	R5A	R5P	R4V
Relief	X						
Sequence				X			X
Pressure Reducer		X					
Unloader			X				
Compensator					X	X	
Max. Operating Pressure (bar)	210, 280, 350	210, 280, 350	210, 280, 350	210, 280, 350	280, 350	280, 350	210, 280, 350
(psi)	3045, 4060, 5075	3045, 4060, 5075	3045, 4060, 5075	3045, 4060, 5075	3045, 4060, 5075	3045, 4060, 5075	3045, 4060, 5075
Maximum Flow (In-line)							
SAE 8 LPM (GPM)							90 (23.7)
SAE 16 LPM (GPM)							300 (79.2)
SAE 12 LPM (GPM)							300 (79.2)
SAE 20 LPM (GPM)							600 (158.5)
Maximum Flow (Flange)							
SAE ¾" LPM (GPM)	90 (24)	90 (24)	90 (24)	90 (24)	90 (24)	90 (24)	90 (24)
SAE 1" LPM (GPM)	300 (79)	300 (79)	300 (79)	300 (79)	300 (79)	300 (79)	300 (79)
SAE 1¼" LPM (GPM)	600 (159)	600 (159)	600 (159)	600 (159)	600 (159)	600 (159)	600 (159)
SAE 1½" LPM* (GPM)	600 (159)	600 (159)	600 (159)	600 (159)			

*3-port body only

Valves – Hydraulic

Directional Control Valves

- NFPA manifold mounted
- Rugged spools with four control lands; up to 21 spool styles available depending on operator
- Solenoid, lever, cam, air or oil pilot operated
- Soft-shift available on D1 and D3 solenoid operated valves
- Low pressure drop
- Phosphate finish body
- Easy access mounting bolts

Series	D1SE	D1V	D3V	D31V	D41V	D61V	D81V	D101V	D111V
Maximum flow* (LPM) (GPM)	20 4	83 22	150 40	175 45	2000 528	390 100	622 180	946 250	300 79
Max operating pressure (bar) (psi)	350 5075	345 5000	345 5000	345 5000	350 5075	207 3000	345 5000	207 3000	350 5075
Mounting style (NFPA) (CETOP) (NG)	D03 3 6	D03 3 6	D05 5 10	D05H 5H -	D10 10 32	D08 8 25	D08 8 25	D10 10 32	D07 7 16

*Depending on spool

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Sandwich Valves

- Mounted between directional control valves and their mounting surface
- Steel bodies and internal hardened steel components for strength and durability

Series	CM	CPOM	FM	PRDM	PRM	RM	SPC
Type	Check	P.O. Check	Flow control	Direct operating pressure reducing	Pressure reducing	Pressure relief	Compensator
Maximum flow LPM (GPM) D03 Mounting, Size 2 D05 Mounting, Size 3 D08 Mounting, Size 6	76 (20) 113 (30) 340 (90)	53 (14) 76 (20) 227 (60)	76 (20) 113 (30) 340 (90)	151 (40) 303 (80)	64 (17) 189 (50)	53 (14) 76 (20) 340 (90)	33 (9) 85 (22)
Max optional pressure: (bar) (psi)	345 5000	345 5000	345 5000	315 4568	345 5000	345 5000	350 5075

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Valves – Hydraulic

Exectrol Directional Control Valves

- One and 2-stage versions
- Shear-type positive seal
- Low leakage (one drop/minute per port)
- Ideal for both hydraulic oil and water soluble fluids
- Standard valves are interflow
- High tolerance to contamination and silting
- Manual overrides standard
- Operating temperature range -40° to +225° with nitrile o-rings
- One version offers centralized lubricating system
- Self-cleaning and dirt resistant
- Shear-type positive seal

Series	21100	21200	25100	25200	21353	21356
Port Size	Subplate	Subplate	Subplate	Subplate	3/8"	3/4"
Maximum flow (LPM) (GPM)	11.3 3	38 10	94 25	169 45	30 8	30 8
Working pressure (bar) (psi)	414 6000	414 6000	414 6000	414 6000	310 4500	310 4500
Operation Solenoid Air/Oil	X	X	X	X	 X X	 X X
Body material Steel Aluminum	X	X	X	X	 X	 X

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Lo-Torq Directional Control Valves

- Shear-type positive seat
- Zero leakage
- High contamination tolerance
- Standard valves are interflow
- Low turning torque
- Side, bottom or subplate mounted
- Panel mounting standard
- Lubricated air, hydraulic oil and water
- Operating temperature -40° to +250°F

Series	8000E	8100E	8000C	8100C	8400E	8500
Size, NPT	1/8" - 3/4"	1/8" - 1"	1 1/4" - 1 1/2"	1 1/4" - 1 1/2"	1/8" - 1/4"	1/8" - 1"
Working Pressure (bar) (psi)	207 3000	414 6000	207 3000	414 6000	207 3000	207 3000
Body Material Steel Aluminum Alloy	X	X	X	X	 X	 X

*3-port body only

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Valves – Hydraulic

Servovalves

- Robust and reliable industrial strength valves for motion control applications
- Explosion-proof and intrinsically safe models available
- Nozzle and flapper-style valves available
- Lapped spool and sleeve versions offered
- Aluminum and tool-steel bodies
- Larger valves survive high tank port pressures
- Valves meet CSA, FM and Cenelec standards

Series	SEMT	SE05, 10, 15	SE2N	SE20	SE2E	SE31	SE60	BD15	BD30	PH76
Max flow rating @70 bar (1000 psi), (LPM) (GPM)	7 1.8	57 15	125 33	75 20	75 20	57 15	225 60	75 20	151 40	57 15
Max pressure rating (bar) (psi)	210 3045	315 4568	210 3045	315 4568	315 4568	210 3045	210 3045	210 3045	210 3045	210 3045

Series	DY1S	DY3H, DY6H	DY01	DY05	DY10	DY12	DY15	DY25	DY45
Max flow rating @70 bar (1000 psi), (LPM) (GPM)	.4* .1*	11, 22 3, 6	11 3	19 5	38 10	57 15	95 25	75 30	225 60
Max pressure rating (bar) (psi)	90 1300	105 1523	210 3045	210 3045	210 3045	210 3045	210 3045	210 3045	210 3045

*@90 bar (1300 psi)

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Industrial Accessories and Plug Valves

- Valves isolate the gage from damage and pressure surges
- Pressure snubber offers one-piece construction; no maintenance
- Some valves provide partial snubbing while delivering instant pressure
- Spring-loaded spool on specific valves drains fluid to reservoir
- No power source required for double-acting, hand operated pumps
- Certain valves flange mount in any position

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Valves – Hydraulic

Check Valves

- Hydraulic velocity fuse valves
- Low cost check valves
- Restrictor and poppet-style check valves
- Double cylinder locking valves
- Military equivalent versions available
- Versions for high shock and high velocity applications
- Valves mount in a variety of positions
- Pilot operated types


480


J416A


C5V


C5P


D4S


D5S

Series	C	VCL	CP	LT, LTF	VLS	440, 450	480, 490	580, 590
Type	Check	Check	P.O. Check	Line Throttle	Velocity Fuse	High Press.	Soft Seat	Swing
Max flow range (LPM)	11 - 569	23 - 189	30 - 95		2 - 341			
(GPM)	3 - 150	5 - 50	8 - 25		.5 - 90			
Body material								
Brass	X						X	
Aluminum						X	X	X
Steel	X	X	X	X	X	X		
Stainless steel	X					X	X	
Port types/sizes:								
NPT	1/8" - 2"	1/4" - 1 1/4"	3/8", 3/4"	1/2", 3/4"	3/8" - 1"	1/8" - 2"	1/8" - 2"	1/8" - 2"
SAE	-4 thru -32			-8 thru -12	-6 thru -24	-4 thru -32	-4 thru -32	-4 thru -32
BSPP	1/8"- 2"							
BSPT	1/8" - 3/4"							
JIC		3/8" - 1 1/4"			3/8" - 1"	1/4" - 2"	1/4" - 2"	1/4" - 2"
Max operating press								
(bar)	345	210	210	210	210	345	210	24
(psi)	5000	3045	3045	3045	3045	5000	3045	350

Series	C5P	C5V	D4S	D5S	J416A, J417A	AVF Pneu	AVF Hyd
Type	P.O. Check	Check	Check	Check	Mini	Velocity Fuse	
Max flow range (LPM)	180 - 600	100 - 700	180 - 585	180 - 585	4 - 110	5 - 60	2 - 227
(GPM)	48 - 159	27 - 185	48 - 155	48 - 155	1 - 29	SCFM	2 - 60
Body material							
Brass						X	
Aluminum							
Steel	X	X	X	X			X
Stainless steel					X		
Port types/sizes:							
NPT						1/4" - 3/4"	1/4" - 1"
SAE					-4 thru -16		
BSPP							
BSPT							
JIC					1/4" - 1"		
SAE 61	X	X		X			
SAE 62		X		X			
Subplate			3/8", 3/4", 1 1/2"	3/8", 3/4", 1 1/2"			
Max operating press							
(bar)	350	420	350	350	345	136	340
(psi)	5075	6090	5075	5075	5000	1973	4930

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Valves – Hydraulic

Ball Valves

- Designed for hydraulic, pneumatic and other media
- Fully ported for low pressure drop and maximum, system efficiency
- Polyamide thrust bearing and ball seal compounds
- Low actuation torque and high cycles
- Assortment of port configurations including threaded, manifold mounted, SAE split flange and a unique 4-bolt rotating SAE flange
- Options include locking handles, panel mounting and limit switches

Series	Function	Pressure bar (psi)	Port Sizes	Material
BVHP	2-Way	414 (6000)	1/4" - 1"	Steel or Stainless Steel
BVAH	2-Way	414 (6000)	1 1/4" - 4"	Steel or Stainless Steel
BVHH	2-Way	689 (10,000)	1/2" - 2"	Steel or Stainless Steel
BV3H/BV4H	3 & 4-Way	414 (6000)	1/4" - 2"	Steel or Stainless Steel
BVMM	2 & 3-Way	414 (6000)	1/4" - 2"	Steel or Stainless Steel
Medium Pressure				
BV3D	3-Way (Diverter)	207 (3000)	1/4" - 2"	Steel or Stainless Steel
V500CS	2-Way	138 (2000)	1/4" - 1"	Steel
V502SS	2-Way	138 (2000)	1/4" - 2"	Stainless Steel
Low Pressure				
BVAL	2-Way (Suction)	28 (400)	1/4" - 4"	Aluminum
V500P	2-Way	41 (600)	1/4" - 2"	Brass
V590P	2-Way (Right Angle)	17 (250)	1/4" - 1/2"	Brass

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Valves – Hydraulic

Flow Control Valves

- Pressure and temperature compensated valves available
- Controlled flow in one or both directions
- Simple set screw locks valve settings
- Versions available with Colorflow scales
- Reverse flow checks optional on several valves
- Variety of metering needles
- Versions offered with tamper-proof option

Series	F	PC*K
Type	Flow	PC flow
Max flow (LPM) (GPM)	11 - 569 3 - 150	11 - 95 3 - 25
Body material Brass Steel Stainless Steel	 X X X	 X
Port types/sizes NPT SAE BSPP BSPT	 1/8" - 2" -4 thru -32 1/8"- 2" 1/8" - 3/4"	 1/4" - 3/4" -6 thru -12
Max operating press (bar) (psi)	 345 5000	 210 3045

Series	PC*M	PC*MS	TPC	FG3PKC	N	MVI	MV	D	2F1C
Type	PC flow	PC flow	T & PC flow	T & PC flow	Needle	Cartridge Needle	Metering	Deceleration	PC flow
Max flow (LPM) (GPM)	11 - 189 3 - 50	11 - 189 3 - 50	3.8 - 95 .1 - 25	41.3 11	11 - 265 3 - 70	2 - 95 .5 - 25	4 - 110 .5 - 40	72 - 227 19 - 60	110 29
Body material Brass Steel Stainless Steel	 X X	X	X	X	 X X X	X	 X X	X	X
Port types/sizes NPT SAE BSPP BSPT	1/4" – 1 1/4" -6 thru -16		3/8", 3/4"		1/8" – 1 1/4" -4 thru -20 1/4" – 1/2"	1/4" – 3/4"	1/8" – 1" -4 thru -16 1/8" – 1" 1/4" – 1/2"	3/8", 3/4"	
Subplate		1/4" - 1"		3/8"				3/8", 3/4"	3/8", 3/4"
Max operating press (bar) (psi)	 210 3045	 210 3045	 210 3045	 210 3045	 345 5000	 345 5000	 345 5000	 210 3045	 350 5075

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Valves – Electrohydraulic

Slip-In Cartridge Valves

- Available in sizes 16 mm, 25 mm, 32 mm, 40 mm, 50 mm, 63 mm, 80 mm, 100 mm
- Flows up to 17,000 LPM (4500 GPM)
- Maximum operating pressures up to 350 bar (5000 psi)
- Proportional throttle, relief and pressure controls
- Complete selection of pressure controls
- Variety of direct and pilot operated checks
- Directional controls to 7500 LPM (2000 GPM)

	Proportional Throttle				Proportional Relief	Pressure Control	
Series	**TDA**	**TEA**	**TEH**	**TDL**	**RE**	**R*E**	**RS*E**
Normal sizes (NG)	16 -100	25 - 100	25 - 100	40 - 100	16 - 63	16 - 63	16 - 63
Max operating pressure (bar) (psi)	350 5075	350 5075	350 5075	350 5075	350* 5075*	350* 5075*	350* 5075*

*Y port = 100 bar (1450 psi); any pressure at Y is additive to valve setting

Series	**C101**	**C10DEC**	**C111**	**C121**	**C18DEC**	**C18DB**	**C10B**
Function	2-pos, 2-way	With poppet monitor switch	With poppet stroke limiter	With pilot valve interface	Active cartridge with dampening poppet & monitor switch	Active cartridge with dampening poppet	check valve
Normal sizes (NG)	16 -100	16 - 63	16 -100	16 -100	25 - 63	25 - 63	16 - 100
Nominal Flow 5 bar (LPM) (GPM)	7000 1852	4000 1058	7000 1852	7000 1852	4000 1058	4000 1058	8000 2113
Max operating pressure (bar) (psi)	350 5075	350 5075	350 5075	350 5075	350 5075	350 5075	350 5075

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Valves – Electrohydraulic

Electronics

- Valve drivers provide ramping, set-points and deadband compensation
- Feedback amplifiers provide advantages of closed loop control
- Power supplies for a variety of valve applications
- DIN card holders

Drivers – Proportional Directional Valves		
Series	**Description**	**Use with**
PWDXXA-400	Programmable, Feedback, Min, Max	Driving Open loop valves with external feedback. (Future: D**FS, D*FC, RLL*R)
PWD00A-400	Programmable, Min, Max, ramps, setpoint	D**FW, D*FB, WLL, RLL

Drivers – Proportional Pressure Control Valves		
PCD00A-400	Programmable, Min, Max, ramps	VBY, VMY, RE*W, PE*W

Drivers – Proportional Throttle Valves		
PCD00A-400	Programmable, Min, Max, ramps	VBY, VMY, RE*W, PE*W

Drivers – Servovalves		
BD90	Closed loop, dual PID, snap track	BD
BD101	Closed loop, single PID, snap track	BD, D*FX, D*FH, D*FP
PID00A-400	Programmable, closed loop	BD, D*FX, D*FH, D*FP

Auxiliary Function Cards		
PZD00A-40*	Programmable, Signal Conditioning	Standard proportional control cards or valves with integrated electronics

Valves Catalog PDF

Valves – Electrohydraulic

Proportional Pressure Control Valves

- Standard DIN/ISO interface
- Integrated or off-board valve electronic
- MIN and MAX potentiometers to set pressure values
- Direct or pilot operated relief
- Adjustable electronic ramp control
- Variety of mounting options

Series	RE06*T	RE06M*W2	RE*T	RE*W	VBY	VMY	PRPM
Type	Direct Op. Relief	Direct Op. Relief	Pilot Op. Relief	Pilot Op. Relief	Pilot Op. Relief	Pilot Op. Press. Reducer	Pilot Op. Relief
Check valve							X
Integrated electronics	X		X				
Max flow range (LPM) (GPM)	3 0.8	5 1.3	150-650 39-171	150-650 39-171	40-160 10-42	40 10	60 16
Mounting: NG06, ISO6264	X	X			X	X	X
NG10, ISO6264			X	X	X		CETOP 5
NG25, ISO6264			X	X			
NG32, ISO6264			X	X			
Max operating press (bar) (psi)	350 5075	350 5075	350 5075	350 5075	415 6019	415 6019	350 5075

Series	F5C	R5A	R5P	R5P*P2	R5R*P2	R5V*P2	LCM	SPC
Type	Throttle	Press. Comp.	Press. Comp.	Press. Comp.	Pilot Op. Press. Reducer	Pilot Op. Press. Relief	Sandwich Press. Comp.	Sandwich Press. Comp.
Flange Mounting	X	X	X	X	X	X		
Subplate Mounting:							CETOP 3	CETOP 3
NG10, ISO6264	X	X	X	X	X	X	CETOP 5	CETOP 5
NG16, ISO6264								CETOP 7
NG25, ISO6264	X	X	X	X	X	X		CETOP 8
NG32, ISO6264	X	X	X	X	X	X		
Max flow range (LPM) (GPM)	95-379 25-100	87-598 23-158	87-598 23-158	87-598 23-158	87-598 23-158	87-598 23-158	20-52 5.2-13.7	30-1230 7.9-325
Port types/sizes: SAE	¾", 1", 1¼"	¾", 1", 1¼"	¾", 1", 1¼"	¾", 1", 1¼"	¾", 1", 1¼"	¾", 1", 1¼", 1½"		
Max operating press (bar) (psi)	270 3915	350 5075	350 5075	350 5075	350 5075	350 5075	350 5075	350 5075

Series	R4V*5	R6V*5	R4V*5	R6V*5	R4R*P2	R4V*P2	4VP01
Type	Pilot Op. Press. Relief	Pilot Op. Press. Relief	Pilot Op. Press. Relief	Pilot Op. Press. Relief	Pilot Op. Press. Reducer	Pilot Op. Press. Relief	Press. Relief
In-Line Mounting					X	X	
Subplate Mounting:							CETOP 3
NG10, ISO6264	X	X	X	X	X	X	
NG25, ISO6264	X	X	X	X	X	X	
NG32, ISO6264	X	X	X	X	X	X	
Max flow range (LPM) (GPM)	148-651 39-172	250-651 66-172	148-651 39-172	250-651 66-172	61-450 16-119	61-450 16-119	4.9 1.3
Integrated electronics			X	X			
Port types/sizes: BSPP					½", ¾", 1", 1¼"	½", ¾", 1", 1¼"	
Max operating press (bar) (psi)	350 5075	350 5075	350 5075	350 5075	350 5075	350 5075	350 5075

Valves Catalog PDF

Valves – Electrohydraulic

Proportional Directional Control Valves

- Progressive flow characteristics
- High flow capacity
- Variety of electronic controls
- Electronic spool-position feedback
- Wide selection of spool options
- Specific valves are 2-stage, pilot operated
- Spool position feedback
- LED functional diagnostics; diagnostics on start-up
- Manual override

Pilot Operated Series	D*1FB	D*1FB	D*FL	D*1FS	D*1FH	D*1FP
Performance	Std.	Std.	Std.	High	Servo	Servo
Mounting: NG10, ISO/CETOP 5	X	X		X	X	X
NG16, ISO/CETOP 7	X	X	X	X	X	X
NG25, ISO/CETOP 8	X	X	X	X	X	X
NG32, ISO/CETOP 10				X	X	X
Spool feedback				X	X	X
Integrated electronics		X	X		X	X
Max operating pressure (bar) (psi)	345 5000	345 5000	345 5000	345 5000	345 5000	350 5075

Direct Operated Series	D*FB	D*FB	D*FW	D**FL	D*FX	D*FP	D*FH	D1FM	D3FM
Performance	Std.	Std.	Std.	Std.	High	Servo	Servo	Servo	Servo
Mounting: NG06, ISO/CETOP 3	X	X	X	X	X	X	X	X	
NG10, ISO/CETOP 5	X	X	X	X	X	X	X		X
Spool feedback					X	X	X	X	X
Integrated electronics	X			X	X	X	X	X	X
Max operating pressure (bar) (psi)	315 4568	315 4568	315 4568	315 4568	315 4568	315 4568	315 4568	315 4568	315 4568

D1FB can be off-board or on-board electronics

Valves Catalog PDF Controls Catalog PDF

Valves – Threaded Cartridge

Threaded Cartridge Valves

Parker offers the broadest line of threaded cartridge valves, specialty valves and integrated packages in the industry. Parker is staffed with experienced cartridge and application engineers to design and specify products to meet customer applications.

Product Highlights

- Standard cavities sizes from 4–20
- Pressures to 420 bar (6000 psi)
- Flows up to 378 LPM (100 GPM)
- Steel and aluminum line bodies
- New RESILON™ D-Ring Seal eliminates need for back-up rings; improves wear, extrusion and spiral failure resistance (Winner's Circle)
- Spherical Poppet design assures accurate alignment and reduces leakage rating on many valves
- New crimp design eliminates adhesive between adapter and cage
- Custom manifolds available
- Most products hex-chrome free zinc plated
- Adjustment options for pressure & flow controls

Solenoid Valves

- Optional manual overrides
- SUPER COIL exceeds IP69K specifications
  - Water dunk test qualified
  - Endurance tested
  - Water spray and chemical solvent compatibility
  - 10 standard termination options (and many specials)
  - Many DC and AC voltages available

Bodies and Cavities

Parker Standard	industry standard, -4 through -20 sizes
Counterbalance	single and dual
Cavity Plugs	-8, -10, -12, -16 sizes
Special Bodies	unique Sterling and Waterman bodies

Check Valves

Valve Type	FlowCapacity LPM (GPM)	Max Working Pressure bar (psi)
Poppet/Ball type	500 (132)	420 (6000)
Pilot operated	150 (40)	420 (6000)
Dual pilot operated	190 (50)	350 (5000)

Coils and Electronics

Supercoils	IP69K, standard voltages, molded connectors

Directional Controls

Valve Type	FlowCapacity LPM (GPM)	Max Working Pressure bar (psi)
Pilot operated spool	400 (105)	420 (6000)

Flow Controls

Valve Type	FlowCapacity LPM (GPM)	Max Working Pressure bar (psi)
Needle valves	225 (60)	420 (6000)
Pressure compensated	56 (15)	420 (6000)
Pressure compensated priority	90 (24)	420 (6000)
Flow dividers/combiners	320 (85)	420 (6000)

Valves Catalog PDF

Valves – Threaded Cartridge

Load Motor Controls

Valve Type	FlowCapacity Liters/Min (GPM)	Max Working Pressure bar (psi)
Standard pilot assisted	350 (90)	350 (5000)
Vented to atmosphere	180 (48)	350 (5000)

Logic Elements

Valve Type	FlowCapacity LPM (GPM)	Max Working Pressure bar (psi)
Poppet	303 (80)	240 (3500)
Spool	500 (132)	420 (6000)

Manual Valves

Valve Type	FlowCapacity LPM (GPM)	Max Working Pressure bar (psi)
Poppet	45 (12)	350 (5000)
Spool	17 (5)	350 (5000)

Pressure Controls

Valve Type	FlowCapacity LPM (GPM)	Max Working Pressure bar (psi)
Direct acting relief	100 (26)	420 (6000)
Pilot operated relief	400 (106)	420 (6000)
Direct acting sequence	47 (12)	420 (6000)
Pilot operated sequence	160 (42)	420 (6000)
Direct acting reducing	56 (13)	420 (6000)
Pilot operated reducing	150 (40)	350 (5000)

Proportional Valves

Valve Type	FlowCapacity LPM (GPM)	Max Working Pressure bar (psi)
Pressure relieving	95 (25)	350 (5000)
Pressure reducing	30 (8)	210 (3000)
Flow controls	325 (60)	210 (3000)
Directional control	38 (10)	350 (5000)

Shuttle Valves

Valve Type	FlowCapacity LPM (GPM)	Max Working Pressure bar (psi)
Insert	38 (10)	420 (6000)
Cartridge	50 (13)	420 (6000)
Spool	175 (46)	420 (6000)

Solenoid Valves

Valve Type	FlowCapacity LPM (GPM)	Max Working Pressure bar (psi)
Poppet	75 (20)	350 (5000)
Spool	285 (75)	350 (5000)

Valves Catalog PDF

Valves – Integrated Hydraulic Circuits

Integrated Hydraulic Circuits

Integrated hydraulic circuits (hydraulic manifold blocks) are designed to meet the many demands on mobile hydraulic equipment. Manifold blocks offer the following benefits:

- Minimum number of tubing, hoses and couplings
- Fewer overall components
- Fewer leakage points
- Less space required
- Complete system solution with optimized functions

Additionally, manifold blocks can be flanged to one or more directional valves as well as to pumps, cylinders, motors and filters.

Some cartridge valve products offered by Parker include:

- Directional control valves
- Logic elements and flow controls
- Pressure controls
- Proportional valves
- Powershift transmission controls
- Load holding valves
- Check and shuttle valves

Parker offers value-added services such as manifold design using in 3-D CAD and CAM software, application engineering assistance, and assembly and testing capabilities.

Parker's expert application engineers, along with the latest computer-aided design technology, can deliver advanced, custom products to market faster. The solution to your problem is only minutes away with Parker's quick design proposals and quotes that are created using 3-D CAD.

When you need finished integrated hydraulic circuits with extremely short lead times, the Parker Speed Shop is the place to go.

Once the design is finalized, the Speed Shop process is further streamlined by utilizing electronic communications and approvals. When design specifications meet customer requirements, Parker's CAD-linked prototype machining centers go into motion producing fully functional hydraulic integrated circuits. All prototypes are then fully tested and documented before being released to production. In today's highly competitive market, speed and quality are critical for success.

Valves Catalog PDF

Cartpak Sandwich Valves

- Standard ISO4401-03, NFPA D03, CETOP3 size bodies designed to accept common -10 size cavity cartridge valves
- Mounted between D1 Series valves and their mounting surface
- Aluminum body for 210 lb bar (3000 psi) operation; ductile iron body for 350 bar (5000 psi) operation
- Each Cartpak body offers a wide range of hydraulic control functions

- Functions include:
  - Pressure relief
  - Pressure reducing
  - Pressure sequencing
  - Flow control
  - Directional control (two-way, three-way)
  - Proportional flow control
  - Proportional pressure control

Valves Catalog PDF

WARNING - USER RESPONSIBILITY

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.

The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.

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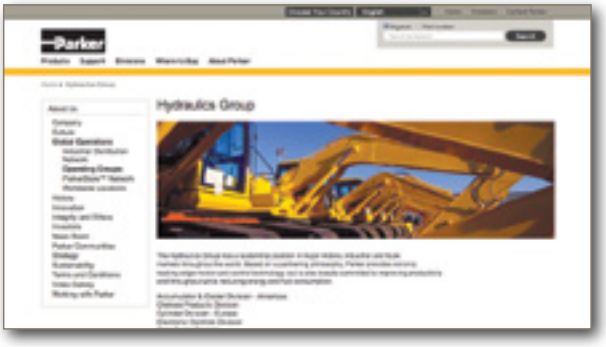
Industrial Hydraulics

Innovative Products and System Solutions

When it comes to hydraulic components and solutions, no company offers more than Parker. Get a jump on your next solution by contacting Parker today.



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Parker's Industrial Hydraulics Innovative Products and Systems Solutions Web Interactive can be viewed on-line at www.parker.com/industrialsolutionsguide. In addition to the summary produced for this printed guide, the industrial solutions web interactive links to detailed product bulletins in each category and are available for individual or mass download.

Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 1 800 C-Parker (1 800 272 7537)

Aerospace

Key Markets

Aftermarket services
Commercial transports
Engines
General & business aviation
Helicopters
Launch vehicles
Military aircraft
Missiles
Power generation
Regional transports
Unmanned aerial vehicles

Key Products

Control systems & actuation products
Engine systems & components
Fluid conveyance systems & components
Fluid metering, delivery & atomization devices
Fuel systems & components
Fuel tank inerting systems
Hydraulic systems & components
Thermal management
Wheels & brakes

Climate Control

Key Markets

Agriculture
Air conditioning
Construction machinery
Food & beverage
Industrial machinery
Life sciences
Oil & gas
Precision cooling
Process
Refrigeration
Transportation

Key Products

Accumulators
Advanced actuators
CO_2 controls
Electronic controllers
Filter driers
Hand shut-off valves
Heat exchangers
Hose & fittings
Pressure regulating valves
Refrigerant distributors
Safety relief valves
Smart pumps
Solenoid valves
Thermostatic expansion valves

Electromechanical

Key Markets

Aerospace
Factory automation
Life science & medical
Machine tools
Packaging machinery
Paper machinery
Plastics machinery & converting
Primary metals
Semiconductor & electronics
Textile
Wire & cable

Key Products

AC/DC drives & systems
Electric actuators, gantry robots & slides
Electrohydrostatic actuation systems
Electromechanical actuation systems
Human machine interface
Linear motors
Stepper motors, servo motors, drives & controls
Structural extrusions

Filtration

Key Markets

Aerospace
Food & beverage
Industrial plant & equipment
Life sciences
Marine
Mobile equipment
Oil & gas
Power generation & renewable energy
Process
Transportation
Water Purification

Key Products

Analytical gas generators
Compressed air filters & dryers
Engine air, coolant, fuel & oil filtration systems
Fluid condition monitoring systems
Hydraulic & lubrication filters
Hydrogen, nitrogen & zero air generators
Instrumentation filters
Membrane & fiber filters
Microfiltration
Sterile air filtration
Water desalination & purification filters & systems

Fluid & Gas Handling

Key Markets

Aerial lift
Agriculture
Bulk chemical handling
Construction machinery
Food & beverage
Fuel & gas delivery
Industrial machinery
Life sciences
Marine
Mining
Mobile
Oil & gas
Renewable energy
Transportation

Key Products

Check valves
Connectors for low pressure fluid conveyance
Deep sea umbilicals
Diagnostic equipment
Hose couplings
Industrial hose
Mooring systems & power cables
PTFE hose & tubing
Quick couplings
Rubber & thermoplastic hose
Tube fittings & adapters
Tubing & plastic fittings

Hydraulics

Key Markets

Aerial lift
Agriculture
Alternative energy
Construction machinery
Forestry
Industrial machinery
Machine tools
Marine
Material handling
Mining
Oil & gas
Power generation
Refuse vehicles
Renewable energy
Truck hydraulics
Turf equipment

Key Products

Accumulators
Cartridge valves
Electrohydraulic actuators
Human machine interfaces
Hybrid drives
Hydraulic cylinders
Hydraulic motors & pumps
Hydraulic systems
Hydraulic valves & controls
Hydrostatic steering
Integrated hydraulic circuits
Power take-offs
Power units
Rotary actuators
Sensors

Pneumatics

Key Markets

Aerospace
Conveyor & material handling
Factory automation
Life science & medical
Machine tools
Packaging machinery
Transportation & automotive

Key Products

Air preparation
Brass fittings & valves
Manifolds
Pneumatic accessories
Pneumatic actuators & grippers
Pneumatic valves & controls
Quick disconnects
Rotary actuators
Rubber & thermoplastic hose & couplings
Structural extrusions
Thermoplastic tubing & fittings
Vacuum generators, cups & sensors

Process Control

Key Markets

Alternative fuels
Biopharmaceuticals
Chemical & refining
Food & beverage
Marine & shipbuilding
Medical & dental
Microelectronics
Nuclear Power
Offshore oil exploration
Oil & gas
Pharmaceuticals
Power generation
Pulp & paper
Steel
Water/wastewater

Key Products

Analytical instruments
Analytical sample conditioning products & systems
Chemical injection fittings & valves
Fluoropolymer chemical delivery fittings, valves & pumps
High purity gas delivery fittings, valves, regulators & digital flow controllers
Industrial mass flow meters/controllers
Permanent no-weld tube fittings
Precision industrial regulators & flow controllers
Process control double block & bleeds
Process control fittings, valves, regulators & manifold valves

Sealing & Shielding

Key Markets

Aerospace
Chemical processing
Consumer
Fluid power
General industrial
Information technology
Life sciences
Microelectronics
Military
Oil & gas
Power generation
Renewable energy
Telecommunications
Transportation

Key Products

Dynamic seals
Elastomeric o-rings
Electro-medical instrument design & assembly
EMI shielding
Extruded & precision-cut, fabricated elastomeric seals
High temperature metal seals
Homogeneous & inserted elastomeric shapes
Medical device fabrication & assembly
Metal & plastic retained composite seals
Shielded optical windows
Silicone tubing & extrusions
Thermal management
Vibration dampening

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