



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



# Industrial Hydraulics

Innovative Products and System Solutions



ENGINEERING YOUR SUCCESS.

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# Parker Hannifin Corporation

## ENGINEERING YOUR SUCCESS.



### The Parker Brand

*Parker Hannifin is your trusted single source partner for all your motion and control solutions.*

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

A global Fortune 300 company with customers in 48 countries, Parker Hannifin is the world's leading supplier of hydraulic, pneumatic and electromechanical systems and components. Customers rely on Parker for engineering excellence, world-class manufacturing and outstanding customer service to provide comprehensive application solutions that are second to none.

- More than \$10.3 billion in sales
- 298 plants worldwide
- 12,000 distributors
- 449,000 customers
- Serving 1,200 distinct markets

Let Parker become part of your design team. Whether you need to develop new products, redesign existing applications or design completely new systems, Parker offers unparalleled engineering expertise.

As the leader in the motion and control industry, Parker strives to be our customers' preferred single source partner. These relationships are cultivated by listening closely to our customers and repeatedly providing them with value measured in real dollars: saved time, reduced waste, gained efficiency, expanded output and increased profitability.





# Customer-Driven Solutions



## Industrial markets served:

- Amusement Rides & Simulators
- Bailers & Compactors
- Hydraulic Presses
- Industrial Machinery
- In-Plant Automotive
- Machine Tool
- Marine
- Medical Equipment
- Oil & Gas
- Paper
- Plastics & Rubber
- Power Generation
- Testing Machines

## Customer-Driven Solutions

Parker Hydraulics is in the “solutions business”, offering our 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.

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 source saves both time and money while allowing easier ordering and faster deliveries.



## Hydraulic Products for Every Application

At the heart of every industrial hydraulics solution is Parker’s 75-year reputation for innovation and quality manufacturing. No one is better positioned to meet your needs. Parker maintains more than 200,000 hydraulic model numbers in its inventory, so whether you are designing new applications or retrofitting older ones, we can meet any hydraulic component requirement.



# Parker's Value Proposition



## Parker's Commitment

Parker believes that it takes more than our great products, competitive prices and on-time delivery to satisfy customer demands. It takes a commitment to provide exceptional value.

For today's customer, an outstanding total experience is the benchmark by which many suppliers are evaluated. Parker delivers tangible and measurable benefits that are designed to reduce your total cost while increasing performance and productivity, eliminating your frustrations and improving your profitability.

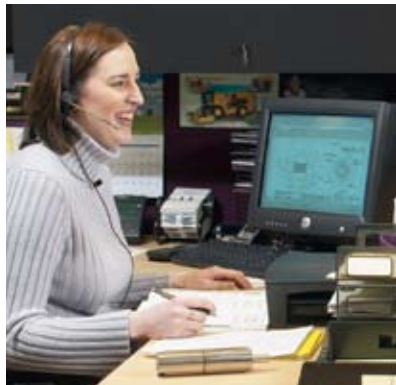
At Parker, value is not a commodity. Instead, it is the result of personal interaction and resources. Our value-added services include:

- 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
- Training





# Parker's Value Proposition

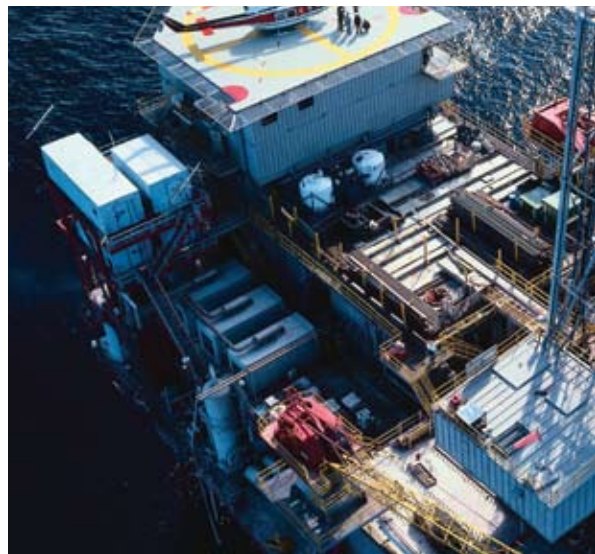


## Support and Service

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!



Parker's ultimate competitive advantage in serving customers has been built with a global network of 12,000 distributors that can provide Parker products and services nearly anywhere, anytime.



## Hydraulic Technology Centers

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.

Locate your nearest Parker HTC by calling  
1-800-C-PARKER  
or via our web site at  
[www.parker.com/distloc](http://www.parker.com/distloc).



# Parker's Value Proposition



## Training Excellence

Parker's technical training for hydraulic, pneumatic and electromechanical technology is the best in the world. We offer complete and comprehensive texts, web-based training and hands-on classes for employees, distributors and customers.

Hundreds of North American colleges and universities use Parker textbooks in motion and control courses. In addition to texts, Parker provides these institutions instructor guides, computer-based training discs, digital images, final exams,



drafting and simulation software, lab manuals and trainer stands.

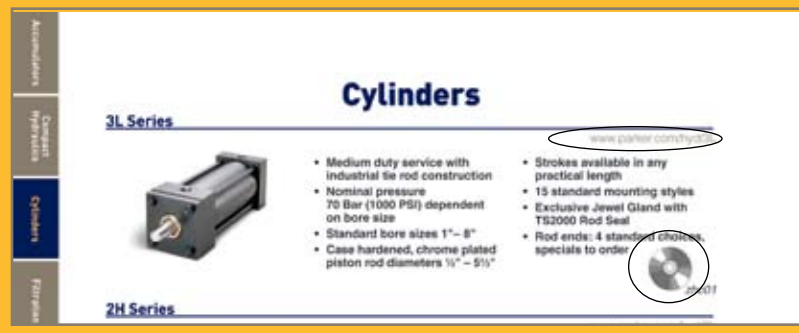
Find out more about Parker training by visiting: [www.parker.com/training](http://www.parker.com/training), or call 216-896-2495.



## A Click Away

This product range presentation features Parker's new "ZIP" URLs. Simply type in the short URL located above the product photo and you will go directly to that product on Parker's Web site.

Additionally, the accompanying DVD contains a full line of catalogs for individual products that can be searched in Adobe Acrobat. Obtain the relevant catalog information quickly by typing the product code printed next to the DVD icon in the brochure into Acrobat's search field.



***Parker is your partner when it comes to increased productivity. No matter what your needs, Parker is your single source provider for all your hydraulic motion and control solutions.***

***Parker – Engineering your success.***





# Industrial Hydraulic Components

***Parker offers one of the world's most extensive industrial hydraulic product lines. From pumps and valves to motors and motion controllers, all of our products share a common heritage of advanced technology for your applications. Parker products incorporate electronic control for precise motion, innovative new designs to reduce size and a greater choice of functions than ever before. Parker hydraulic components and systems are designed to deliver precise and reliable control.***

## Accumulators

Parker is the industry's most complete source for accumulators and related products. We offer a complete range of piston, bladder and diaphragm type accumulators, as well as gas bottles, KleenVent reservoir isolators and other accessories. These reliable components improve hydraulic system efficiency by maintaining pressure, supplementing pump flow and absorbing system shocks. Sturdy construction provides years of efficient, reliable service.

## Compact Power Systems

Compact, powerful and efficient performance is delivered from Parker Oildyne products. Robust, simple designs provide power density, easy installation and flexibility for use across a wide variety of applications. Reliable solutions for your design challenges include electro-hydraulic actuators, miniature power units, fluid power systems, piston pumps, cartridge piston pumps and hand pumps. High quality and smooth, quiet operation make these products a durable fit in the design arena. Locking circuits and manual release availability enable safe, secure operation in critical situations and harsh environments. Extended service life dramatically lowers maintenance requirements and costs.

## Cylinders

Parker is a leading manufacturer of hydraulic cylinders for industrial equipment applications. Our cylinders keep on performing like you would only expect from Parker. By offering you more power per pound and more power per dollar over millions of trouble-free cycles, Parker cylinders have proven to be the most reliable and cost effective cylinders available.





# Industrial Hydraulic Components

## Filtration/Fluid Analysis

Parker filtration products are designed to maximize the reliability of your hydraulic systems and components with positive protection against fluid contaminants. Our comprehensive line of pressure and return line filters enhances machine life, reduces maintenance and lowers costs. High, medium and low pressure filters are offered, as well as portable filter carts and replacement elements.

## Fluid Connectors

Parker has a complete line of fluid connector products and services for hydraulic, pneumatic and fluid systems. Products range 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. Our global distribution network and strategically located service centers ensure that you can get the products you need, whenever and wherever you need them.

## Cartridge Valves & Integrated Circuits

Parker is the world leader in the design and manufacture of integrated hydraulic circuits. We provide solutions for complex circuits by selecting threaded cartridge valves from our wide range of products, and integrating them into a single manifold. We utilize 3D CAD software, state-of-the-art HC machining centers and complete automated testing to maximize application performance.

## Motors

Our full line of high and low speed motors provide power ranging up to 15,000 inch-pounds of torque with speeds ranging from 1/2 rpm (Calzoni) to 13,000 rpm (Bent Axis). A complete range of sizes is offered in gear, gerotor, vane and piston style operating configurations. Fixed and variable displacement motors are available. Parker hydraulic motors deliver excellent performance with high efficiency, true wear compensation and longer service life.

## Power Units

Parker offers the most complete line of standard, pre-engineered, cataloged hydraulic power units in the industry. We offer everything from 28 cubic inch to 80-gallon reservoir sizes.

All Parker power units are backed by complete engineering support including control documentation on the shop floor. Additionally, most Parker cataloged power units are delivered in five working days.

## Pumps

Parker's broad line of energy-efficient hydraulic pumps includes fixed or variable displacement models of piston, vane and gear pumps. Designed to handle a wide range of applications, Parker pumps are available with a full complement of electronic and computer controls. Like all Parker products, these pumps are manufactured with the finest materials under strict

quality control. The result is a pump that delivers high efficiency and low maintenance under the toughest operating conditions.

## Rotary Actuators

Parker rotary actuators are recognized for their durability and life and are used wherever reliability is critical to the application. Our broad product range offers performance features to meet all common industrial applications. We will work with customers on special designs to meet unique needs. Rotary actuators offer the industrial equipment designer a unique solution for developing high torque from a compact, self-contained, precision machined, drop-in package.

## Valves and Controls

We make hydraulic valves for virtually every industrial equipment application, from simple on/off functions to precise motion control. These include control and bankable control valves, motion controllers, pressure control valves, servo valves, and manifold mounted directional and proportional valves.

# Accumulators

## Piston Accumulators

[www.parker.com/hyd/pistonaccum](http://www.parker.com/hyd/pistonaccum)



- Low temperature solutions to -50°F
- Over 50 standard capacities from 5 cu. in. (.075 liters) to 50 gallons (189 liters)
- 2", 3", 4", 6", 7", 8", 9" and 12" nominal bore sizes
- 207, 276 and 350 Bar (3000, 4000 and 5000 PSI) operating pressures
- Patented five-bladed V-O-ring piston seals in five standard seal compounds
- Accumulator and gas bottle configurations
- CRN/CSA, AS1210, DNV, ABS, ASME, CE and other certifications available
- Specials up to 200 gallons and 20,000 psi
- Stainless steel models for water/seawater/chemical service

## ACP Series Non-Repairable Piston Accumulators

[www.parker.com/hyd/acp](http://www.parker.com/hyd/acp)



- Piston 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) operating pressure
- Low-cost, non-repairable design
- Multiple port options
- No gas valve option
- Fast delivery

## Greer Bladder Accumulators

[www.parker.com/hyd/bladder](http://www.parker.com/hyd/bladder)



- Standard capacities from 10 cu. in. (.16 liters) to 15 gallons (56 liters)
- Maximum operating pressures up to 414 Bar (6000 PSI)
- Bladders manufactured in-house
- Six bladder compounds to suit a variety of fluids and temperatures
- Bottom and top repairable; medium and high-flow, transfer barriers and gas bottles
- Water/chemical service available
- CRN/CSA, AS1210, DNV, ABS, ASME, CE and other certifications available
- 24 Hour Emergency Bladder Kit program

## Diaphragm Accumulators

[www.parker.com/hyd/diaphragm](http://www.parker.com/hyd/diaphragm)



- 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 nitrile or hydrin



# Accumulators

## Inline Pulse-Tone™ Shock Suppressors

[www.parker.com/hyd/pulsetone](http://www.parker.com/hyd/pulsetone)



- Reduces pulsations and shock
- 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

## KleenVent Hydraulic Reservoir Isolators

[www.parker.com/hyd/kleenvent](http://www.parker.com/hyd/kleenvent)



- Standard capacities from 2.5 gallons (9.5 liters) to 80 gallons (302 liters)
- Four bladder polymers for a wide range of fluids and temperatures
- Choice of steel or fiberglass shells
- Easy to use installation kits available
- Optional pressure/vacuum breaker
- Protects hydraulic system from contamination

## Gas Bottles

[www.parker.com/hyd/gasbottles](http://www.parker.com/hyd/gasbottles)



- Standard capacities from 40 gallons (151 liters) to 150 gallons (567 liters)
- Maximum operating pressures up to 380 Bar (5500 PSI)
- Both threaded and forged end construction
- High strength alloy steel
- Variety of port options

## Accumulator Charging Kit and Mounting Accessories

[www.parker.com/hyd/accumkit](http://www.parker.com/hyd/accumkit)



- Charging and gauging equipment
- Gauge adapters and assemblies
- Unloading valves
- Mounting clamps and base brackets
- U-Bolt mounting hardware
- Accumulator repair tools

# Compact Hydraulics

## Fluid Power Systems

[www.parker.com/hyd/108fps](http://www.parker.com/hyd/108fps) • [www.parker.com/hyd/550fps](http://www.parker.com/hyd/550fps)



108



550

Our 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 Parker 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	1/2
550	207 (3000)	11 (3)	1/2 – 5	1/3 – 3

## Compact EHA (Electro-Hydraulic Actuator)

[www.parker.com/hyd/eha](http://www.parker.com/hyd/eha)



- Compact, power dense, low noise “Plug ‘N Play” solution
- Robust, leak free one piece housing design
- Speed range up to 130 mm/sec (5.1"/sec)
- Force range up to 22,200 N (5000 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 to .56 kW (1/4 to 3/4 hp) for intermittent duty
- Comes pre-flushed, filled & sealed
- Compatible with hostile environments, can be washed down



# Compact Hydraulics

## Piston Pumps

[www.parker.com/hyd/ppumps](http://www.parker.com/hyd/ppumps)



- 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 (1 cS) fluid
- Operating temperature: -40° to 300°F

Frame size H	-156	-206	-259	-311	-346	-417	-519	-692	-865
Displacement (cm <sup>3</sup> /rev) (in <sup>3</sup> /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

## Cartridge Pumps

[www.parker.com/hyd/cpumps](http://www.parker.com/hyd/cpumps)



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

Displacement (cc/rev) (in <sup>3</sup> /rev)	0.1 to 0.33 0.006 to 0.020
Max continuous pressure (Bar) (PSI)	207 3000
Max speed (rpm)	5000

## Hand Pumps

[www.parker.com/hyd/hpumps](http://www.parker.com/hyd/hpumps)



- 8 cc/stroke (.50 in<sup>3</sup>/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

# Compact Hydraulics

## 165 Series

[www.parker.com/hyd/165](http://www.parker.com/hyd/165)



- 1 HP, 12 VDC motor
- 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

## Gear Motors

[www.parker.com/hyd/gearmotor](http://www.parker.com/hyd/gearmotor)



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

Frame size 09	
Displacement (cm <sup>3</sup> /rev) (in <sup>3</sup> /rev)	1.48 .09
Max continuous pressure (Bar) (PSI)	345 5000
Max speed (rpm)	25000

# Cylinders

## 2H Series

[www.parker.com/hyd/2h](http://www.parker.com/hyd/2h)



- Heavy duty service with industrial tie rod construction
- Nominal pressures up to 207 Bar (3000 PSI)
- Standard bore sizes 1½"–6"
- Piston rod diameters 5⁄8"–4"
- Strokes available in any practical length
- 16 standard mounting styles
- Exclusive Jewel Gland with TS2000 Rod Seal
- Parker Stepped Cushion for increased performance and productivity
- Rod ends: 4 standard choices, specials to order

## 3H Series

[www.parker.com/hyd/3h](http://www.parker.com/hyd/3h)



- Heavy duty service with industrial tie rod construction
- Nominal pressures up to 207 Bar (3000 PSI)
- Standard bore sizes 7"–20"
- Piston rod diameters 3"–10"
- Strokes available in any practical length
- 15 standard mounting styles
- Parker Stepped Cushion for increased performance and productivity
- Rod ends: 4 standard choices, specials to order





# Cylinders

## 3L Series

[www.parker.com/hyd/3L](http://www.parker.com/hyd/3L)



- Medium duty service with industrial tie rod construction
- Nominal pressure 70 Bar (1000 PSI) dependent on bore size
- Standard bore sizes 1" – 8"
- Piston rod diameters 1/2" – 5 1/2"
- Strokes available in any practical length
- 15 standard mounting styles
- Exclusive Jewel Gland with TS2000 Rod Seal
- Rod ends: 4 standard choices, specials to order

## CHD Series

[www.parker.com/hyd/chd](http://www.parker.com/hyd/chd)



- Repairable construction, steel body design
- Bore sizes from 20mm to 80mm
- Strokes in 1mm increments up to 100mm dependent on bore size
- Piston rod diameters 12mm through 45mm
- Single and double rod designs
- 13 standard mounting styles
- Nominal pressure 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

## CHE Series

[www.parker.com/hyd/che](http://www.parker.com/hyd/che)



- Repairable construction, aluminum alloy extruded design
- Bore sizes from 20mm to 100mm
- Strokes in 1mm increments up to 150mm dependent on bore size
- Piston rod diameters 12mm through 56mm
- Single and double rod designs
- 6 standard mounting styles
- Nominal pressure 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

## HMI Series

[www.parker.com/hyd/hmi](http://www.parker.com/hyd/hmi)



- Nominal pressures up to 210 Bar (3045 PSI)
- Metric 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 Gland with TS2000 Rod Seal
- Seal types to suit a wide variety of operating environments
- Parker Stepped Cushion for increased performance and productivity



# Cylinders

## WaveScale

[www.parker.com/hyd/wavescale](http://www.parker.com/hyd/wavescale)



- Nominal pressures up to 207 Bar (3000 PSI)
- Piston rod diameters 1"– 6"
- Wide variety of stroke lengths available
- Exclusive Jewel Gland with TS2000 Rod Seal
- Parker Stepped Cushion for increased performance and productivity
- Low friction seals available
- WaveScale embedded design maintains NFPA dimensions 2"– 6" bores
- Seven bolt-on and four integral manifolds available
- Linear displacement transducer (LDT) feedback
- Simplifies machine design and reduces number of hydraulic lines
- Eliminates need for limit switches, deceleration valves, shock absorbers and mechanical linkages in many applications
- Integral mounted valve eliminates assembly time and fittings

## XFC Series

[www.parker.com/hyd/xfc](http://www.parker.com/hyd/xfc)



- All Steel Construction
- Elastomeric Seals throughout
- Standard Metric Hydraulic 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
- 178kN Continuous Thrust (40,000 Pounds)
- Parker Bayside Stealth Gearhead Direct Mount
- Parker MPP Max Plus Motors Standard
- Strokes from 50mm to 2000 mm in 1 mm increment

## Custom



- Bores to 48" (1219mm)
- Strokes to 876" (22250mm)
- Operating pressures to 1034 Bar (15,000 PSI)
  - 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
  - Cobalt
  - Nitrotec/Nitride
  - Ceramic
  - Laser Cladded
- 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, 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



# Filtration

## Low Pressure

[www.parker.com/hyd/filterlow](http://www.parker.com/hyd/filterlow)



- Various mounting configurations
- High capacity/high efficiency Microglass III 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
12AT	64 (17)	10.3 (150)	Spin-on
50AT	190 (50)	10.3 (150)	Spin-on
12AS	94 (25)	34.5 (500)	Inline
50AS	220 (60)	34.5 (500)	Inline
PT	190 (50)	10.3 (150)	Tank top
KLT/KLS	455 (120)	10.3 (150)	Tank top
RF7	1136 (300)	10.3 (150)	Tank top
ILP, RFP	452 (120)	13.8 (200)	Inline, In-tank
BGTS	2400 (640)	10.3 (150)	Return in-tank

## Medium Pressure

[www.parker.com/hyd/filtermed](http://www.parker.com/hyd/filtermed)



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

Model	Max Flow LPM (GPM)	Max Pressure Bar (PSI)	Mounting Style
15CN	94 (25)	69 (1000)	Inline
40CN	302 (80)	69 (1000)	Inline
80CN	452 (120)	69 (1000)	Inline
MPD	581 (150)	82.8 (1200)	Duplex
IL8	1609 (425)	34.5 (500)	Inline, duplex, quadplex

## High Pressure

[www.parker.com/hyd/filterhigh](http://www.parker.com/hyd/filterhigh)



- SAE, flange or ISO ports
- High capacity/high efficiency Microglass III 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
15P	75 (20)	207 (3000)	Inline, manifold
30P	170 (45)	207 (3000)	Inline, manifold
30PD	94 (25)	207 (3000)	Inline, duplex
50P	377 (100)	345 (5000)	Inline, bowl up
50PR	264 (70)	345 (5000)	Inline, reverse flow
WPF1	40 (10)	483 (7000)	Inline
WPF2	100 (26)	483 (7000)	Inline
WPF3	160 (42)	483 (7000)	Inline
WPF4	360 (95)	483 (7000)	Inline
WPF5	520 (137)	483 (7000)	Inline
ServoSaver	115 (30)	275 (4000)	Manifold, sandwich plate
12S	95 (25)	1380 (20,000)	Inline





# Filtration

## Portable/Offline Systems

[www.parker.com/hyd/guardian](http://www.parker.com/hyd/guardian) • [www.parker.com/hyd/filtercart](http://www.parker.com/hyd/filtercart) • [www.parker.com/hyd/pvs](http://www.parker.com/hyd/pvs)



- 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
  - 38 LPM (10 GPM) flow; ¾ hp electric motor

## Stationary/Offline Systems (SOS)

[www.parker.com/hyd/sos](http://www.parker.com/hyd/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

## Reservoir Accessories

[www.parker.com/hyd/resacc](http://www.parker.com/hyd/resacc)



- Metallic and non-metallic breathers and filler breathers
- Triceptor™ desiccant breathers
- Spin-on breathers
- Diffusers
- Fluid level/temperature gauges
- Magnetic suction strainers

# Fluid Analysis

## icountBS - Bottle Sampler

[www.parker.com/hyd/icountbs](http://www.parker.com/hyd/icountbs)



The icountBS - Bottle Sampler with its innovative industrial design has been developed for customers looking for state of the art technology, attention to detail and the compactness of a permanent laboratory particle analysis model.

- Quick sample bottle analysis with variable test time options from 15 second and volume capacities from 10ml
- Repeatable and re-producible result performance to ISO4406:1999 and NAS1638 particle count distributions. For other calibration standards consult Parker CMC

- On-board compressor and 'shop' air capability
- Design concept allowing for portability. DC and rechargeable battery pack power options built in
- Cost-effective and economical alternative solution to external laboratory services
- 6 fixed channel size analysis
- Fluid resistant touch type screen panel
- Sample tube self cleaning sleeve minimizing contamination cross over
- Internal thermal printer

## Icount PD

[www.parker.com/hyd/icountpd](http://www.parker.com/hyd/icountpd)



The Icount Particle Detector from Parker represents the most up-to-date technology in solid particle detection. The design dynamics, attention to detail and small size of the permanently mounted, on-line particle detector brings a truly innovative product to all industry.

The laser based, leading-edge technology is a cost effective market solution to fluid management and contamination control.

- Independent monitoring of system contamination trends
- Moisture % RH LED indicator (optional)

- Early warning LED or digital display indicators for Low, Medium and High contamination levels
- Cost effective solution in prolonging fluid life and reducing machine downtime
- Visual indicators with power and alarm output warnings
- Continuous performance for dependable analysis
- Hydraulic, phosphate ester and fuel fluid compatible construction
- Self diagnostic software
- Fully PC/PLC integration technology such as: RS232 and 0-5 Volt, 4-20mA.

## Par Gel

[www.parker.com/hyd/pargel](http://www.parker.com/hyd/pargel)



- Water removal elements filter "free" water from mineral-base and synthetic fluids
- Fits many Parker filters and the Guardian filtration system



# Fluid Analysis

## Par Fit Elements

[www.parker.com/hyd/parfit](http://www.parker.com/hyd/parfit)



- Extensive range of competitively priced Parker 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 Parker performance in competitive filter housings

## Laser CM (LCM)

[www.parker.com/hyd/lcm](http://www.parker.com/hyd/lcm)



The LCM laser particle counter is designed primarily for on-line particle counting with a user-programmable automatic count feature with data storage for continuous monitoring. Additional features include:

- 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
- Particle count test cycle in 2 minutes reported in ISO or NAS format

## Par-Test

[www.parker.com/hyd/partest](http://www.parker.com/hyd/partest)



A complete laboratory analysis performed on a small volume of fluid, Par-Test results are provided in an organized three-page format.

A water based fluid kit and a petroleum based fluid kit are available. Each kit includes a pre-cleaned sample bottle, data sheet and mailing container. The

standard tests included with the service are:

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

## MS100 Moisture Sensor

[www.parker.com/hyd/ms100](http://www.parker.com/hyd/ms100)



The MS100 Moisture Sensor provides a compact, real-time solution to continuous water contamination monitoring. Designed to work well in petroleum/synthetic hydraulic and lubricating oil applications.

- 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



# 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

[www.parker.com/bpd/hiduty](http://www.parker.com/bpd/hiduty)

## Hose Barbs



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

[www.parker.com/bpd/hosebarbs](http://www.parker.com/bpd/hosebarbs)

## Pipe Fittings



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

[www.parker.com/bpd/pipefittings](http://www.parker.com/bpd/pipefittings)

## Manifolds



- Multiple connections
- Composite body
- Lightweight
- Push-to-connect ports

[www.parker.com/bpd/manifolds](http://www.parker.com/bpd/manifolds)

## Compress-Align



- Captive sleeve
- Ease of assembly
- All brass bodies
- Seals out-of-round tubing

[www.parker.com/bpd/compressalign](http://www.parker.com/bpd/compressalign)

- Bodies interchangeable with standard compression
- Economical

## Ball Valves



- Available in brass, carbon steel, stainless steel
- Sizes from 1/8"-3"
- Pressures from 200 – 6,000 PSI
- Various handle options

[www.parker.com/bpd/ballvalves](http://www.parker.com/bpd/ballvalves)

- Full flow available
- NPT, SAE straight threads, ISO 6149 ports, BSPP threads

For a complete review of Parker Fluid System Connectors, please reference Catalog 3501-E.

# Fluid Connectors Thermoplastic Products

## Straight and Formed Thermoplastic Hydraulic Products

[www.parker.com/pfd/cat4660](http://www.parker.com/pfd/cat4660)



- Mobile and industrial hydraulic applications
- Thermoplastic hoses up to 5000 PSI
- Non-conductive, low temperature and flame resistant hoses
- Rubber/Thermoplastic Hybrid™ hoses
- High pressure diagnostic and lubrication products
- Preformed and coiled hose
- Twinline and Multi-line products
- Crimpers, tooling and accessories

## Fluoropolymer Hose Products

[www.parker.com/pfd/page](http://www.parker.com/pfd/page)



- High temperature/high pressure hydraulic applications
- Superior chemical and corrosion resistance
- Specialty hoses for food/beverage and pharmaceutical
- Sizes: .250" up to 4"

## Fluoropolymer Tubing Products

[www.parker.com/pfd/texloc](http://www.parker.com/pfd/texloc)



PEEK™ is a registered trademark of Victrex

- Materials PTFE, FEP, PFA, HP PFA, ETFE, ECTFE and PEEK™
- Smoothbore, convoluted, corrugated, coiled and heat shrink
- High temperature, chemical resistant applications
- FDA and USP Class IV compliant
- Custom tubing and profile extrusions
- Sizes: .004" ID up to 4" OD

## Pneumatic Products

[www.parker.com/pfd/cat4660](http://www.parker.com/pfd/cat4660)



- Industrial pneumatics
  - Tubing and coils in polyethylene, nylon, polypropylene, polyurethane and clear vinyl

For a complete review of Parker Thermoplastic Products, please reference Catalog 4660.

# Fluid Connectors Tube Fittings

## O-Ring Face Seal Fittings

[www.parker.com/tfd/sealok](http://www.parker.com/tfd/sealok)



- 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

## 37° Flare Fittings

[www.parker.com/tfd/triplelok](http://www.parker.com/tfd/triplelok)



- 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

## 24° Flareless Fittings

[www.parker.com/tfd/ferulok](http://www.parker.com/tfd/ferulok)



- 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

## Metric 24° Flareless Fittings

[www.parker.com/tfd/eoeo2](http://www.parker.com/tfd/eoeo2)



- 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

## Pipe Fittings and Adapters

[www.parker.com/tfd/pipeandport](http://www.parker.com/tfd/pipeandport)



- 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

## 4-Bolt Flange Connections

[www.parker.com/tfd/hydraulicflange](http://www.parker.com/tfd/hydraulicflange)



- 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



# 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.

[www.parker.com/qcd/gpqcouplings](http://www.parker.com/qcd/gpqcouplings)

- Sizes from 1/8" to 2 1/2"
- Brass, steel, stainless steel, plastic
- Pressures to 6000 PSI
- Flows up to 200 GPM
- Temp. range from -40° to +400°F

## 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.

[www.parker.com/qcd/nsqcouplings](http://www.parker.com/qcd/nsqcouplings)

- Sizes from 1/4" to 2"
- Steel, stainless steel, plastic
- Pressures to 10,000 PSI
- Flows up to 50 GPM
- Temp. range from -40° to +400°F

## 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.

[www.parker.com/qcd/swivels](http://www.parker.com/qcd/swivels)

- Sizes from 1/4" 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

## 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.

[www.parker.com/qcd/checkvalves](http://www.parker.com/qcd/checkvalves)

- Standard inline configuration
- Sizes from 1/4" to 1-1/4"
- Pressures to 5000 PSI
- Crack pressures: 5-200 PSI

## 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 testing while diagnostic equipment measures system pressure, flow, RPM and temperature.

[www.parker.com/qcd/diagequipment](http://www.parker.com/qcd/diagequipment)

- Equipment:
- **ServiceJunior** – measures pressure to 8700 PSI
  - **Serviceman** – measures pressure, temperature, RPM and flow
  - **The Parker Service Master** – measures and stores pressure, temperature, RPM, and flow



For a complete review of Parker Quick Couplings, please reference Catalog 3800.

# Fluid Connectors Rubber Hose Products

## Low Pressure, Medium Pressure, High Pressure

Parker offers the largest selection of hoses plus more fitting sizes and configurations than any other manufacturer. You'll find a wide variety of hoses including braided, spiral, specialty and multi-purpose and more than 750 Parkrimp fittings. Parker products have been designed, tested and approved to meet and exceed global standards, including SAE, DIN, ISO, ABS, DNV, USCG among others.

Parker Parkrimp assemblies consist of No-Skive hose and fittings, permanently joined by one of

the Parkrimp crimp machines. The teeth in Parker's crimped fittings "bite down" to the hose wire providing a metal-to-metal grip with maximum integrity. Parker's Monoblok™ fittings are manufactured from a single piece of steel as compared to a two-piece fitting. Their lack of brazed or soldered joints provides the maximum in leak protection, eliminating any potential leak paths. Parker Monoblok fittings are available in a wide variety of end configurations and fitting series.

Parker one-piece fittings are designed, manufactured and tested to work with our low, medium and high pressure hoses to help keep your equipment up and running.

The right product is available for your application - including hoses that feature a variety of abrasion-resistant cover choices, flexibility, a wide range of media compatibility and more - characteristics that make Parker your hose supplier of choice.

[www.parkerhose.com](http://www.parkerhose.com)

## Low Pressure



Pneumatic, multipurpose Push-Lok™, air conditioning and fleet hose comprise the majority of the low pressure market. Parker manufactures diesel engine, suction and return line and

multipurpose hoses that assemble in seconds without the need for clamps and bands using Parker 82 Series fittings.

[www.parkerhose.com](http://www.parkerhose.com)

## Medium Pressure



From SAE 100R1 and 100R2 to compact and abrasion-resistant one and two-wire braided hose, Parker offers high performance products that will excel in your

medium pressure needs. Parker's 43 Series fittings provide the widest range of configurations and connection sizes.

[www.parkerhose.com](http://www.parkerhose.com)

## High Pressure



Parker's high-pressure, spiral-reinforced No-Skive hoses are designed together with its Monoblok one-piece fittings and provide the most leak-free connection possible.

Abrasion-resistant covers and constant working pressure make Parker hose the best in this category.

[www.parkerhose.com](http://www.parkerhose.com)

For a complete review of Parker Rubber Hose Products, please reference Catalog 4400.



# 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 vs 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

[www.parker.com/hyd/calzoni](http://www.parker.com/hyd/calzoni)



- 5 piston design
- Wide range of displacement
- Starting torque from 90-95% theoretical
- Total efficiency up to 96%
- Resistance to thermal shocks  $\Delta T=176^{\circ}\text{F}$
- Speed feedback accessories optional

Frame size MR/E*	33	57	73	93	110	125	160	190	200	250	300
Displacement (cm <sup>3</sup> /rev) (in <sup>3</sup> /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 4350	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 <sup>3</sup> /rev) (in <sup>3</sup> /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 <sup>3</sup> /rev) (in <sup>3</sup> /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	130





# Motors Calzoni Radial Piston LSHT

## MRT-MRTE-MRTF Series-Fixed Displacement

[www.parker.com/hyd/calzoni](http://www.parker.com/hyd/calzoni)



- 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/E*/F**	7100	7800**	8500*	9000	9900**	10800*	14000	15500**
Displacement (cm <sup>3</sup> /rev) (in <sup>3</sup> /rev)	7100.4 433.5	7808.4 476.5	8517.3 519.8	9005.4 549.5	9903.9 604.4	10802.4 659.2	14010 854.9	15276 932.3
Max pressure (Bar) (PSI)	300 4350	250 3626	250 3626	300 4350	250 3626	250 3626	300 4350	250 3626
Max speed (RPM)	150	130	120	130	120	110	80	75

Frame size MRT/E*/F**	16500*	17000	18000**	19500	20000*	21500**	23000*
Displacement (cm <sup>3</sup> /rev) (in <sup>3</sup> /rev)	16542 1009.5	16759 1022.7	18025 1100	19508 1190.5	19788 1207.5	21271 1298	23034 1405.6
Max pressure (Bar) (PSI)	250 3626	300 4350	250 3626	300 4350	250 3626	250 3626	250 3626
Max speed (RPM)	70	70	65	60	60	55	50

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

[www.parker.com/hyd/calzoni](http://www.parker.com/hyd/calzoni)



- 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  $\Delta T=176^{\circ}F$
- Speed feedback accessories optional

Frame size MRV/E* MRD/E*	300	330*	450 450	500*	700 700	800* 800*	1100 1100	1400* 1400*
Displacement (cm <sup>3</sup> /rev) (in <sup>3</sup> /rev)	304.1 18.6	332.4 20.3	451.6 27.6	497.9 30.4	706.9 43.1	804.2 49.1	1125.8 68.7	1369.5 83.6
Max pressure (Bar) (PSI)	300 4350	250 3626	300 4350	250 3626	300 4350	250 3626	300 4350	250 3626
Max speed (RPM)	1000	1000	850	800	700	650	580	550

Frame size MRV/E* MRD/E*	1800 1800	2100* 2100*	2800 2800	3100* 3100*	4500 4500	5400* 5400*
Displacement (cm <sup>3</sup> /rev) (in <sup>3</sup> /rev)	1809.6 110.4	2091.2 127.6	2792.0 170.4	3103.7 189.4	4502.7 274.8	5401.2 329.6
Max pressure (Bar) (PSI)	300 4350	250 3626	300 4350	250 3626	300 4350	250 3626
Max speed (RPM)	400	370	280	280	250	210



# Motors Low Speed High Torque

## Nichols

[www.parker.com/hyd/110A](http://www.parker.com/hyd/110A) • [www.parker.com/hyd/700](http://www.parker.com/hyd/700) • [www.parker.com/hyd/716](http://www.parker.com/hyd/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 <sup>3</sup> /rev)	49	89	116	144	174	211	269	310	395
(in <sup>3</sup> /rev)	3.6	5.4	7.1	8.8	10.6	12.9	16.4	18.9	24.1
Max continuous pressure (Bar)	170	170	170	170	155	155	140	140	120
(PSI)	2500	2500	2500	2500	2250	2250	2000	2000	1750
Max operating speed (rev/min)	858	740	684	622	519	437	415	350	279
Torque @ max cont pressure (Nm)	127	182	256	324	352	412	470	542	594
(lb-in)	1125	1608	2267	2874	3115	3651	4164	4803	5261

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

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

# Motors Low Speed High Torque

## Torqmotor™ Small Frame

[www.parker.com/hyd/tc](http://www.parker.com/hyd/tc) • [www.parker.com/hyd/tb](http://www.parker.com/hyd/tb) • [www.parker.com/hyd/te](http://www.parker.com/hyd/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 (cm³/rev) (in³/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 (cm³/rev) (in³/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 (cm³/rev) (in³/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

## Torqmotor™ TS Series

[www.parker.com/hyd/ts](http://www.parker.com/hyd/ts)



- 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 (cm³/rev) (in³/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

# Motors Low Speed High Torque

## Torqmotor™ Large Frame

[www.parker.com/hyd/tf](http://www.parker.com/hyd/tf) • [www.parker.com/hyd/tg](http://www.parker.com/hyd/tg) • [www.parker.com/hyd/th](http://www.parker.com/hyd/th) • [www.parker.com/hyd/tk](http://www.parker.com/hyd/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 (cm³/rev) (in³/rev)	81 4.9	100 6.1	128 7.8	141 8.6	169 10.3	197 12.0	238 14.5	280 17.1	364 22.2	405 24.7	477 29.1
Max cont pressure (Bar) (PSI)	207 3000	155 2250	138 2000	138 2000	138 2000	138 2000	138 2000	138 2000	130 1880	128 1850	113 1645
Max operating speed (rpm)	693	749	583	530	444	381	394	334	258	231	195
Torque @ max cont pressure (Nm) (lb-in)	220 1948	197 1746	229 2031	254 2248	317 2808	364 3222	427 3782	509 4502	594 5257	655 5800	681 6027

Frame size TG	-0140	-0170	-0195	-0240	-0280	-0310	-0335	-0405	-0475	-0530	-0625	-0785	-0960
Displacement (cm³/rev) (in³/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
Torque @ max cont pressure (Nm) (lb-in)	390 3455	476 4216	556 4919	677 5991	796 7044	924 8184	964 8533	942 8336	887 7853	983 8701	986 8727	1044 9239	773 6843

Frame size TH	-0140	-0170	-0195	-0240	-0280	-0310	-0335	-0405	-0475	-0530	-0625	-0785	-0960
Displacement (cm³/rev) (in³/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
Torque @ max cont pressure (Nm) (lb-in)	390 3455	476 4216	556 4919	677 5991	796 7044	924 8184	964 8533	942 8336	887 7853	983 8701	986 8727	1044 9239	773 6843

Frame size TK	-0250	-0315	-0400	-0500	-0630	-0800	-1000
Displacement (cm³/rev) (in³/rev)	250 15.3	315 19.2	400 24.4	500 30.5	630 38.4	800 48.8	1000 61
Max cont pressure (Bar) (PSI)	241 3500	241 3500	207 3000	207 3000	207 3000	190 2750	172 2500
Max operating speed (rpm)	523	413	373	298	237	276	218
Torque @ max cont pressure (Nm) (lb-in)	814 7204	1029 9105	1153 10201	1439 12746	1617 14313	1916 16960	2413 21360





# Motors Fixed Displacement Vane

## M3-M4 Fixed Displacement

[www.parker.com/hyd/m3m5](http://www.parker.com/hyd/m3m5)



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 <sup>3</sup> /rev) (in <sup>3</sup> /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 <sup>3</sup> /rev) (in <sup>3</sup> /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

## M5 Fixed Displacement Motors

[www.parker.com/hyd/m5af-m5bf](http://www.parker.com/hyd/m5af-m5bf)



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 <sup>3</sup> /rev) (in <sup>3</sup> /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

# Motors High Speed

## M2 Series

[www.parker.com/hyd/m2](http://www.parker.com/hyd/m2)



- 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 <sup>3</sup> /rev) (in <sup>3</sup> /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 <sup>1</sup> (Bar) (PSI)	166 2400	166 2400	166 2400	166 2400	166 2400	97 1400
Max transient pressure <sup>2</sup> (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.

## 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 <sup>3</sup> /rev) (in <sup>3</sup> /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 <sup>1</sup> (Bar) (PSI)	166 2400	166 2400	166 2400	166 2400	166 2400
Max transient pressure <sup>2</sup> (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.

# Motors Fixed Displacement Bent-Axis Piston

## F11

[www.parker.com/hyd/f11](http://www.parker.com/hyd/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	-05	-10	-12	-14	-19	-150	-250
Displacement (cm <sup>3</sup> /rev) (in <sup>3</sup> /rev)	4.9 0.30	9.8 0.60	12.5 0.76	14.3 0.87	19.0 1.16	150.0 9.15	242.0 14.80
Max continuous pressure (Bar) (PSI)	350 5000	350 5000	350 5000	350 5000	350 5000	350 5000	350 5000
Max operating speed** (RPM)	12,800	10,200	9400	9000	8100	3200	2700

\*Use F12 for medium range displacement

\*\*Functioning as motor

## F12

[www.parker.com/hyd/f12](http://www.parker.com/hyd/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
Displacement (cm <sup>3</sup> /rev) (in <sup>3</sup> /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
Max continuous pressure (Bar) (PSI)	420 6000	420 6000	420 6000	420 6000	420 6000	420 6000	420 6000
Max operating speed (RPM)	6700	6100	5300	4800	4600	4400	4200

# Motors Fixed Displacement

## Low Speed High Torque

### Torqmotor™ and Brake Motors

[www.parker.com/hyd/bg](http://www.parker.com/hyd/bg) • [www.parker.com/hyd/bh](http://www.parker.com/hyd/bh)



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)	141	169	195	238	280	310	337	405	477	528	623	786	959
(in/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

Rated holding capacity: 1350 Nm (12,000 in lbs)

Frame size BH	-0140	-0170	-0195	-0240	-0280	-0310	-0335	-0405	-0475	-0530	-0625	-0785	-0960
Displacement (cm/rev)	141	169	195	238	280	310	337	405	477	528	623	786	959
(in/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

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



# Power Units

## Low-Profile V-Pak

[www.parker.com/hyd/vpak](http://www.parker.com/hyd/vpak) • [www.parker.com/hyd/dhvpak](http://www.parker.com/hyd/dhvpak)



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 ingress 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

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

# Pumps Piston

## PAVC

[www.parker.com/hyd/pavc](http://www.parker.com/hyd/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 <sup>3</sup> /rev) (in <sup>3</sup> /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

## PVP

[www.parker.com/hyd/pvp](http://www.parker.com/hyd/pvp)



PVP piston pumps are ideal for medium duty industrial applications with operating pressure up to 3600 PSI. These service friendly pumps are quiet and respond quickly to flow demand changes.

- High strength cast-iron housing
- Optional inlet/outlet locations

- Replaceable bronze port plate
- Replaceable piston slipper plate
- Low noise levels
- Fast response times
- Metric pilot, shaft and ports available

Frame size PVP	-16	-23	-33	-41	-48
Displacement (cm <sup>3</sup> /rev) (in <sup>3</sup> /rev)	16 1.0	23 1.4	33 2.0	41 2.5	48 2.9
Max continuous pressure (Bar) (PSI)	248 3600	248 3600	248 3600	248 3600	248 3600
Max self priming speed at 0 PSI gauge (RPM)	3000	3000	3000	2800	2400

# Pumps Piston

## PD Series

[www.parker.com/hyd/pd](http://www.parker.com/hyd/pd)



- 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 <sup>3</sup> /rev) (in <sup>3</sup> /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	3200	3200	2600	2500	2300	2100	2000

## PVplus Series

[www.parker.com/hyd/pvplus](http://www.parker.com/hyd/pvplus)



- 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

Frame size PVplus	-16	-20	-23	-32	-40	-46	-63	-80	-92	-140	-180	-270
Displacement (cm <sup>3</sup> /rev) (in <sup>3</sup> /rev)	16 .98	20 1.2	23 1.4	32 1.9	40 2.4	46 2.8	63 3.8	80 4.8	92 5.6	140 8.5	180 10.9	270 16.5
Max continuous pressure (Bar) (PSI)	345 5000	345 5000	345 5000	345 5000	345 5000	345 5000	345 5000	345 5000	345 5000	345 5000	345 5000	345 5000
Max self priming speed at 0 PSI gauge (rpm)	2750	2750	2750	2400	2400	2400	2400	2300	2200	2400	2200	1800
Input power (hp) (kw)	24.8 18.5	31.4 23.4	33.6 25.1	47 35.1	62.4 46.5	67.3 50.2	94 70.1	119.6 89.2	183.5 136.8	200.4 149.4	282 210	400 298

# Pumps Piston

## F1/F2

[www.parker.com/hyd/f1f2](http://www.parker.com/hyd/f1f2)



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 <sup>3</sup> /rev) (in <sup>3</sup> /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 <sup>2</sup>	2700 2600	2700 2400	2700 2200	2700 2200	2300 2000 <sup>3</sup>	2300 1800 <sup>3</sup>
Torque <sup>1</sup> 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

<sup>1</sup> Theoretical value

<sup>2</sup> Valid at an inlet pressure of 1.0 Bar (abs.) when operating on mineral oil at a viscosity of 30 mm<sup>2</sup>/s (cSt).

<sup>3</sup> 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 <sup>3</sup> /rev) (in <sup>3</sup> /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 <sup>1,2</sup> and B <sup>1,2</sup> pressurized Port A <sup>2</sup> 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

<sup>1</sup> Valid with 2½" inlet line, q = 120 l/min. With 2" inlet line: max 1400 RPM.

<sup>2</sup> Measured at 1.0 bar abs. inlet pressure.



# Pumps Piston

## Premier Series

[www.parker.com/hyd/premier](http://www.parker.com/hyd/premier)



- 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

Model Series	P05/P080	P07/P110	P09/P140	P12/P200	P16/P260
Displacement	80.3 cc/rev	109.8 cc/rev	140.9 cc/rev	200.0 cc/rev	262.2 cc/rev
Max. Continuous Pressure	6000 PSI	6000 PSI	6000 PSI	6000 PSI	6000 PSI
Max. Intermittent Pressure	7250 PSI	7250 PSI	7250 PSI	7250 PSI	7250 PSI
Max. Rated Drive Speed	2550 RPM	2450 RPM	2300 RPM	2100 RPM	1850 RPM
Pump Flow 1800 RPM & 100 PSI	38 GPM	52 GPM	66.5 GPM	95 GPM	124 GPM
Input Horsepower 1800 RPM & 5000 PSI	113 HP	171 HP	217 HP	308 HP	404 HP

# Pumps Piston

**GOLD CUP®**
[www.parker.com/hyd/goldcup](http://www.parker.com/hyd/goldcup)


- 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	5000 PSI	5000 PSI	3600 PSI	5000 PSI	5000 PSI	5000 PSI *	5000 PSI *
Max. Intermittent Pressure**	6000 PSI	6000 PSI	4500 PSI	6000 PSI	6000 PSI	5000 PSI *	5000 PSI *
Rated Drive Speed	3000 RPM	3000 RPM	2100 RPM	2400 RPM	2400 RPM	1800 RPM	1800 RPM
Flow @ 1800 RPM	47 GPM	57 GPM	62 GPM	86 GPM	109 GPM	192 GPM	238 GPM
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.

## 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	5000 PSI	5000 PSI	3600 PSI	5000 PSI	5000 PSI	5000 PSI *	5000 PSI *
Max. Intermittent Pressure**	6000 PSI	6000 PSI	4500 PSI	6000 PSI	6000 PSI	5000 PSI *	5000 PSI *
Maximum Rated Shaft Speed	3000 RPM	3000 RPM	2100 RPM	2400 RPM	2400 RPM	1800 RPM	1800 RPM
Input Flow Required for 1800 rpm	47 GPM	57 GPM	62 GPM	86 GPM	109 GPM	192 GPM	238 GPM
Output Torque at Maximum Rated Pressure	4327 lb-in	5348 lb-in	4216 lb-in	8146 lb-in	10,410 lb-in	18,320 lb-in	23,000 lb-in
Output Horsepower @ Max. Continuous Pressure and 1800 rpm and 40cSt Petroleum Oil	123	153	120	232	297	523	657

\* Variable speed. Higher servo pressure may be required.

\*\* 10% of operating time, not exceeding 6 successive seconds.



# Pumps Hybrid

## Variable Piston/Fixed Vane

[www.parker.com/hyd/t6h](http://www.parker.com/hyd/t6h)



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 <sup>3</sup> /rev) (in <sup>3</sup> /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

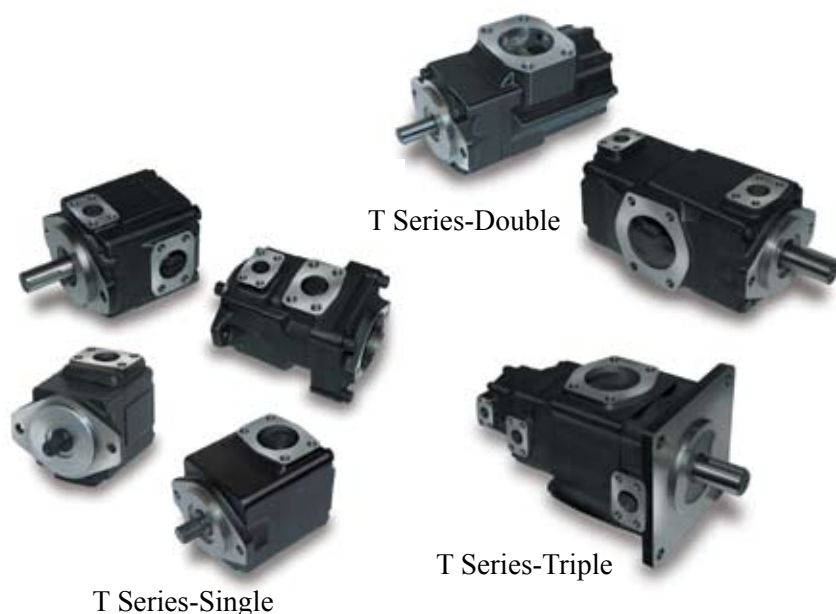
\*\*Lower for larger displacements. See catalog

\*\*\*See catalog on CD for complete information

# Pumps Fixed Displacement Vane

## T Series

[www.parker.com/hyd/tseries](http://www.parker.com/hyd/tseries)



T Series-Double

T Series-Single

T Series-Triple

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	6CM	6CP	6DM	6EM
Displacement* (cm <sup>3</sup> /rev) (in <sup>3</sup> /rev)	10.8 - 100 0.66 - 6.1	46 - 100 2.8 - 6.1	47.5 - 158 2.9 - 9.6	132.3 - 227 8.1 - 13.8
Max pressure** (Bar) (PSI)	275 4000	275 4000	300 3500	240 3500
Max speed** (RPM)	2800	2800	2500	2200

Frame Size T-Double	6CCM	6DCM	6ECM	6EDM
Displacement* (cm <sup>3</sup> /rev) (in <sup>3</sup> /rev)	21.6 - 200 1.3 - 12.2	58.3 - 258 3.6 - 15.7	143.1 - 327 8.7 - 19.9	179.7 - 385 11.0 - 23.5
Max pressure** (Bar) (PSI)	275 4000	275 4000	275 4000	275 4000
Max speed (RPM)	2800	2500	2200	2200

Frame Size T-Triple	6DCCM	6EDCM/S
Displacement* (cm <sup>3</sup> /rev) (in <sup>3</sup> /rev)	69.1 - 358 4.2 - 21.8	190.5 - 485 11.6 - 29.6
Max pressure** (Bar) (PSI)	275 4000	275 4000
Max speed (RPM)	2500	2200

\*Available range based on various combinations of displacements.

\*\*Lower for larger displacements; see catalog on CD.



# Pumps Fixed Displacement Vane

## SDV Single

[www.parker.com/hyd/sdvsingle](http://www.parker.com/hyd/sdvsingle)



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 <sup>3</sup> /rev) (in <sup>3</sup> /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 <sup>3</sup> /rev) (in <sup>3</sup> /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

## SDV Double

[www.parker.com/hyd/sdvdouble](http://www.parker.com/hyd/sdvdouble)



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 <sup>3</sup> /rev) (in <sup>3</sup> /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 <sup>3</sup> /rev) (in <sup>3</sup> /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).



# Pumps/Motors Gear

## PGP 300 Series

[www.parker.com/hyd/pgp300](http://www.parker.com/hyd/pgp300)



- 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 <sup>3</sup> /rev) (in <sup>3</sup> /rev)	10.2 .620	12.7 .775	15.2 .930	17.8 1.09	20.3 1.24	22.9 1.40	25.9 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)	245 3500	245 3500	245 3500	245 3500	245 3500	245 3500	245 3500	245 3500	225 3300	215 3100	200 2900	190 2700	175 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 <sup>3</sup> /rev) (in <sup>3</sup> /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)	245 3500	245 3500	245 3500	245 3500	245 3500	225 3250	210 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 <sup>3</sup> /rev) (in <sup>3</sup> /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)	245 3500	245 3500	245 3500	245 3500	245 3500	225 3250	210 3000	190 2750	175 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 <sup>3</sup> /rev) (in <sup>3</sup> /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)	245 3500	245 3500	245 3500	245 3500	245 3500	245 3500	225 3250	210 3000
Max speed (RPM)	2400	2400	2400	2400	2400	2400	2400	2400

\*Functioning as motor



# Pumps/Motors Gear

## PGP 500 Series

[www.parker.com/hyd/pgp500](http://www.parker.com/hyd/pgp500)



- 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 <sup>3</sup> /rev) (in <sup>3</sup> /rev)	2 .12	3 .18	4 .24	5 .31	6 .37	7 .43	8 .49	9 .55	10 .61	11 .67	12 .73
Max continuous 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 <sup>3</sup> /rev) (in <sup>3</sup> /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 continuous pressure (Bar) (PSI)	275 3988	275 3988	275 3988	275 3988	275 3988	275 3988	275 3988	260 3770	260 3770	235 3408	235 3408	200 2900	190 2705	170 2465
Max speed at 0 inlet & max outlet pressure (RPM)	4000	4000	4000	3600	3600	3300	3000	3000	3000	2800	2800	2400	2300	2300

# Pumps/Motors Gear

## PGP 600 Series

[www.parker.com/hyd/pgp600](http://www.parker.com/hyd/pgp600)



610

- Patented, 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 <sup>3</sup> /rev)	7 .43	10 .61	14 .85	16 1.04	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
Intermittent pressure (Bar) (PSI)	300 4351	300 4351	300 4351	300 4351	290 4206	270 3916	260 3771	240 3480	220 3190	175 2538

Frame Size PGP/PGM620	0190	0230	0260	0290	0330	0370	0410	0440	0500
Displacement (cc/rev) (in <sup>3</sup> /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
Intermittent pressure (Bar) (PSI)	300 4351	300 4351	300 4351	300 4351	300 4351	275 3989	245 3553	230 3336	210 3046

Frame Size PGP/PGM640	0300	0350	0450	0550	0650	0750	0800
Displacement (cc/rev) (in <sup>3</sup> /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
Intermittent pressure (Bar) (PSI)	300 4351	300 4351	300 4351	300 4351	300 4351	260 3771	240 3481





# Pumps/Motors Gear

## HP7 Series

[www.parker.com/hyd/hp7](http://www.parker.com/hyd/hp7)



- Aluminum or cast iron construction
- Clockwise or counter-clockwise rotation
- Flows to 116 GPM per section
- Journal bearings
- Available with fluorocarbon seals
- Also available as tandem and piggy-back configuration pump

Frame size HP7	-250	-300	-350	-400	-450	-500	-550
Displacement (cm <sup>3</sup> /rev) (in <sup>3</sup> /rev)	82.9 5.06	99.1 6.05	115.9 7.07	128.3 7.83	143.4 8.75	159.8 9.75	176.0 10.74
Max continuous pressure (Bar) (PSI)	276 4000	276 4000	276 4000	276 4000	255 3700	228 3300	207 3000
Max speed (RPM)	2500	2500	2500	2500	2500	2500	2500

## HP8 Series

[www.parker.com/hyd/hp8](http://www.parker.com/hyd/hp8)



- Aluminum construction
- Clockwise or counter-clockwise rotation
- Flows to 177 GPM per section
- Journal bearings
- Available with fluorocarbon seals
- Also available as tandem pump

Frame size HP8	-400	-450	-500	-550	-600	-660	-770	-850
Displacement (cm <sup>3</sup> /rev) (in <sup>3</sup> /rev)	128.3 7.83	143.4 8.75	159.8 9.75	176.0 10.74	193.0 11.78	213.9 13.05	246.0 15.01	268.3 16.38
Max continuous pressure (Bar) (PSI)	276 4000	276 4000	276 4000	276 4000	276 4000	248 3600	228 3300	207 3000
Max speed* (RPM)	2500	2500	2500	2500	2500	2500	2500	2500

\*Speeds above 2000 RPM require the suction to be pressurized to 5 PSI minimum.

## P16 Series

[www.parker.com/hyd/p16](http://www.parker.com/hyd/p16)



- 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 <sup>3</sup> /rev) (in <sup>3</sup> /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

# Pumps/Motors Gear

## 20 Series

[www.parker.com/hyd/20series](http://www.parker.com/hyd/20series)



- 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 <sup>3</sup> /rev) (in <sup>3</sup> /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

## 25 Series

[www.parker.com/hyd/25series](http://www.parker.com/hyd/25series)



- 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 <sup>3</sup> /rev) (in <sup>3</sup> /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

# Rotary Actuators

## HTR Series

[www.parker.com/hyd/htr](http://www.parker.com/hyd/htr)



- 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 <sup>3</sup> /rad (in <sup>3</sup> /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)

## M (Mill) Series

[www.parker.com/hyd/mill](http://www.parker.com/hyd/mill)



- 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 <sup>3</sup> /rad (in <sup>3</sup> /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

## LTR Series

[www.parker.com/hyd/ltr](http://www.parker.com/hyd/ltr)



- 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 <sup>3</sup> /rad (in <sup>3</sup> /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)

# Rotary Actuators

## HRN Series

[www.parker.com/hyd/hrn](http://www.parker.com/hyd/hrn)



- Vane actuator provides many options in torque and pressure
- Rugged construction
- Compact size offers maximum flexibility in mounting and packaging

HRN Series	Pressure Bar (PSI)	Displacement cm <sup>3</sup> /rad (in <sup>3</sup> /rad)	Torque Newton Meter (lb-in)
10S	69 (1000)	2.12 (0.13)	10 (87)
15S	69 (1000)	3.61 (0.22)	20 (173)
20S	69 (1000)	5.09 (0.31)	29 (260)
30S	69 (1000)	10.82 (0.66)	59 (520)
100S	69 (1000)	23.55 (1.44)	123 (1089)
200S	69 (1000)	46.90 (2.86)	314 (2779)
400S	69 (1000)	92.31 (5.63)	539 (4770)
700S	69 (1000)	165.52 (10.1)	980 (8673)

S – Single vane performance is listed

D – Dual vane options can double the ratings

S – 270 degrees, D – 90 degrees rotation angles

## Tork-Mor Series

[www.parker.com/hyd/torkmor](http://www.parker.com/hyd/torkmor)



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

Tork Mor	Pressure Bar (PSI)	Displacement cm <sup>3</sup> /rad (in <sup>3</sup> /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

## 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

## Directional Control Valves

[www.parker.com/hyd/dcv](http://www.parker.com/hyd/dcv) • [www.parker.com/hyd/manifolds](http://www.parker.com/hyd/manifolds)



- 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	D61V	D81V	D101V
Maximum flow* (LPM) (GPM)	20 4	83 22	150 40	175 45	390 100	622 180	946 250
Max operating pressure (Bar) (PSI)	350 5000	345 5000	345 5000	345 5000	207 3000	345 5000	207 3000
Mounting style (NFPA) (CETOP) (NG)	D03 3 6	D03 3 6	D05 5 10	D05H 5H -	D08 8 25	D08 8 25	D10 10 32

\*Depending on spool

## Sandwich Valves

[www.parker.com/hyd/manapak](http://www.parker.com/hyd/manapak)



- 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 4560	345 5000	345 5000	350 5075

# Valves Hydraulic

## Pressure Control Valves

[www.parker.com/hyd/pcv](http://www.parker.com/hyd/pcv)



### In-Line Mounted

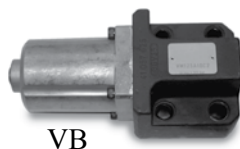
- Right angle or in-line-style valves
- Pressure ranges between 0.25 and 250 Bar (4 and 3600 PSI)
- Soft-seat poppets in brass or stainless steel for near zero leaks
- Non-standard and special port styles available on request

### 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



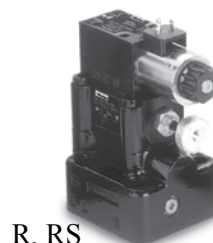
VM



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	1/4" - 3/4"	1/4" - 3/4"	1/4" - 3/4"	1/4" - 1"
SAE	-4 thru -12	-4 thru -12	-4 thru -12	-4 thru -16
Direct acting				X
Pilot operated				
Working pressure (Bar)	0.3 - 248	0.3 - 248	0.3 - 248	0.3 - 248
(PSI)	4 - 3600	4 - 3600	4 - 3600	4 - 3600
Body material				
Aluminum	X			X
Brass		X		
Stainless steel			X	X
Soft seat	X	X	X	X

# Valves Hydraulic

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 5000	350 5000	350 5000	350 5000	350 5000	350 5000	350 5000	350 5000	350 5000	350 5000	350 5000	350 5000
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) (PSI)	210, 280, 350 3045, 4060, 5075	210, 280, 350 3045, 4060, 5075	210, 280, 350 3045, 4060, 5075	210, 280, 350 3045, 4060, 5075	280, 350 3045, 4060, 5075	280, 350 3045, 4060, 5075	210, 280, 350 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 3/4" 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 1 1/4" LPM (GPM)	600 (159)	600 (159)	600 (159)	600 (159)	600 (159)	600 (159)	600 (159)
SAE 1 1/2" LPM* (GPM)	600 (159)	600 (159)	600 (159)	600 (159)			

\*3-port body only

# Valves Hydraulic

## Exectrol Directional Control Valves

[www.parker.com/hyd/exectrol](http://www.parker.com/hyd/exectrol)



- 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

## Lo-Torq Directional Control Valves

[www.parker.com/hyd/lo-torq](http://www.parker.com/hyd/lo-torq)



- 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



# Valves Hydraulic

## Servo Valves

[www.parker.com/hyd/servo](http://www.parker.com/hyd/servo) • [www.parker.com/hyd/se](http://www.parker.com/hyd/se)



- 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 3000	315 4500	210 3000	315 4500	315 4500	210 3000	210 4000	210 3000	210 3000	210 4500

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 1500	210 3000	210 3000	210 3000	210 3000	210 3000	210 3000	210 3000

\*@90 bar (1300 PSI)

## Industrial Accessories and Plug Valves

[www.parker.com/hyd/indacc](http://www.parker.com/hyd/indacc)



- 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

# Valves Hydraulic

## Check Valves

[www.parker.com/hyd/check](http://www.parker.com/hyd/check)



- 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



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) (GPM)	11 - 569 3 - 150	23 - 189 5 - 50	30 - 95 8 - 25		2 - 341 .5 - 90			
Body material								
Brass	X						X	
Aluminum						X	X	
Steel	X	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) (PSI)	345 5000	210 3000	210 3000	210 3000	210 3000	345 5000	210 3000	24 350

Series	C5P	C5V	SPR	SVLE	J416A, J417A	AVF	
						Pneu	Hyd
Type	P.O. Check	Check	Check	P.O. Check	Mini	Velocity Fuse	
Max flow range (LPM) (GPM)	180 - 600 48 - 159	100 - 700 27 - 185	180 - 585 48 - 155	180 - 585 48 - 155	4 - 110 1 - 29	5 - 60 SCFM	2 - 227 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							
BSPP							
BSPT							
JIC							
SAE 61	X	X			-4 thru -16		
SAE 62		X			1/4" - 1"		
Subplate			3/8", 3/4", 1 1/2"	3/8", 3/4", 1 1/2"			
Max operating press (Bar) (PSI)	350 5075	420 6090	350 5075	350 5075	345 5000	136 2000	340 5000



# Valves Hydraulic

## Ball Valves

[www.parker.com/hyd/ball](http://www.parker.com/hyd/ball)



- 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
<b>High Pressure</b>				
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
<b>Medium Pressure</b>				
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
<b>Low Pressure</b>				
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

# Valves Hydraulic

## Flow Control Valves

[www.parker.com/hyd/flow](http://www.parker.com/hyd/flow)



- Pressure and temperature compensated valves available
- Controlled flow in one or both directions
- Simple set screw locks valve settings
- Versions available with Color-flow 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	X	
Steel	X	X
Stainless Steel	X	
Port types/sizes		
NPT	1/8" - 2"	1/4" - 3/4"
SAE	-4 thru -32	-6 thru -12
BSPP	1/8" - 2"	
BSPT	1/8" - 3/4"	
Max operating press (Bar) (PSI)	345 5000	210 3000

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					X		X		
Steel	X	X	X	X	X	X	X	X	X
Stainless Steel	X				X				
Port types/sizes									
NPT	1/4" - 1 1/4"		3/8" - 3/4"		1/8" - 1 1/4"	1/4" - 3/4"	1/8" - 1"	3/8" - 3/4"	
SAE	-6 thru -16				-4 thru -20		-4 thru -16		
BSPP							1/8" - 1"		
BSPT					1/4" - 1/2"		1/4" - 1/2"		
Subplate		1/4" - 1"		3/8"				3/8" - 3/4"	3/8", 3/4"
Max operating press (Bar) (PSI)	210 3000	210 3000	210 3000	210 3000	345 5000	345 5000	345 5000	210 3000	350 5075



# Valves Hydraulic

## DIN Slip-In Cartridge Valves

[www.parker.com/hyd/din](http://www.parker.com/hyd/din)



- 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

# Valves Electrohydraulic

## Electronics

[www.parker.com/hyd/electronics](http://www.parker.com/hyd/electronics)



- Valve drivers provide ramping, setpoints 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
EW104	Adjustable; Min, Max, 2 ramps	D**FS

### Drivers – Proportional Pressure Control Valves

PCD00A-400	Programmable, Min, Max, ramps	VBY, VMY, RE*W, PE*W
ED104	Adjustable; Min, Max, 2 ramps	DSA/DWE/DWU

### Drivers – Proportional Throttle Valves

PCD00A-400	Programmable, Min, Max, ramps	VBY, VMY, RE*W, PE*W
ET104	Adjustable; Min, Max, 2 ramps ("L" Solenoid)	TDA
ET154	Adjustable, Min, Max ("M" Solenoid)	TDA

### 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
EZ150	Adjustable; 6 commands, 7 ramps	
EZ154	Adjustable; Min, Max, 2 ramps, 1 external ramp	
EZ595	Closed loop PID, DIN card	

# Valves Electrohydraulic

## Proportional Pressure Control Valves

[www.parker.com/hyd/ppcv](http://www.parker.com/hyd/ppcv)



- 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	PE*W	VBY	VMY	PRPM
Type	Direct Op. Relief	Direct Op. Relief	Pilot Op. Relief	Pilot Op. Relief	Pilot Op. Press. Reducer	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	150-650 40-172	40-160 10-42	40 10	60 16
Mounting: NG06, ISO6264	X	X				X	X	X
NG10, ISO6264			X	X	X	X		CETOP 5
NG25, ISO6264			X	X	X			
NG32, ISO6264			X	X	X			
Max operating press (Bar) (PSI)	350 5075	350 5075	350 5075	350 5075	350 5075	415 4500	415 4500	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	3/4", 1", 1 1/4"	3/4", 1", 1 1/4"	3/4", 1", 1 1/4"	3/4", 1", 1 1/4"	3/4", 1", 1 1/4"	3/4", 1", 1 1/4", 1 1/2"		
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					1/2", 3/4", 1", 1 1/4"	1/2", 3/4", 1", 1 1/4"	
Max operating press (Bar) (PSI)	350 5075	350 5075	350 5075	350 5075	350 5075	350 5075	350 5075

# Valves Electrohydraulic

## Proportional Directional Control Valves

[www.parker.com/hyd/pdcv](http://www.parker.com/hyd/pdcv)



- 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'1FW	D'1FT	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	D1FB, D3FB	D'FW	D'FT	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	X
Max operating pressure (Bar) (PSI)	315 4500	315 4500	315 4500	315 4500	315 4500	315 4500	315 4500	315 4500	315 4500

D1FB can be off-board or on-board electronics

# Valves Threaded Cartridge

## Threaded Cartridge Valves

[www.parker.com/hyd/hcs](http://www.parker.com/hyd/hcs)



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

[www.parker.com/hyd/bc](http://www.parker.com/hyd/bc)

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

[www.parker.com/hyd/cartcheck](http://www.parker.com/hyd/cartcheck)

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

[www.parker.com/hyd/ce](http://www.parker.com/hyd/ce)

Supercoils	IP69K, standard voltages, molded connectors
Unicoils	standard voltages, molded connectors

## Directional Controls

[www.parker.com/hyd/dir](http://www.parker.com/hyd/dir)

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

## Flow Controls

[www.parker.com/hyd/cartflow](http://www.parker.com/hyd/cartflow)

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 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)

[www.parker.com/hyd/lm](http://www.parker.com/hyd/lm)

## Logic Elements

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

[www.parker.com/hyd/log](http://www.parker.com/hyd/log)

## Manual Valves

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

[www.parker.com/hyd/mv](http://www.parker.com/hyd/mv)

## 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)

[www.parker.com/hyd/pc](http://www.parker.com/hyd/pc)

## 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)

[www.parker.com/hyd/pv](http://www.parker.com/hyd/pv)

## 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)

[www.parker.com/hyd/sv](http://www.parker.com/hyd/sv)

## Solenoid Valves

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

[www.parker.com/hyd/sol](http://www.parker.com/hyd/sol)


# Valves Integrated Hydraulic Circuits

## Integrated Hydraulic Circuits

[www.parker.com/hyd/ihc](http://www.parker.com/hyd/ihc)



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.

## Cartpak Sandwich Valves

[www.parker.com/hyd/cartpak](http://www.parker.com/hyd/cartpak)

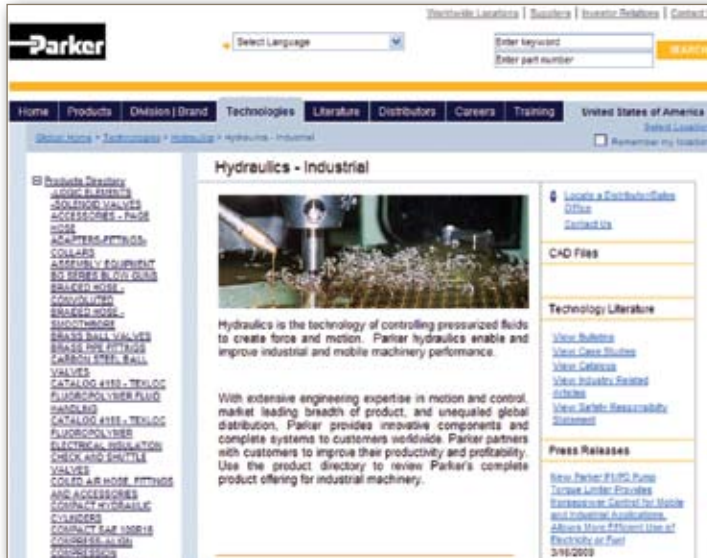


- **Standard ISO4401-03, NFPA D03, CETOP3 size bodies designed to accept common -10 size cavity cartridge valves**
- **Mounted between D1 Series valves and their mounting surface**
- **Aluminum body for 210 Bar (3000 PSI) operation; ductile iron body for 350 Bar (5000 PSI) operation**
- **Each Cartpak 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

# Action Directory

## Innovative Products and System Solutions



[www.parker.com/hydraulics](http://www.parker.com/hydraulics)

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.

### Sales

Call: 1-800-C-PARKER (800-272-7537)

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Online: [www.parker.com/distloc](http://www.parker.com/distloc)

### Literature

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e-mail: [c-parker@parker.com](mailto:c-parker@parker.com)

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[www.parker.com/hydraulics](http://www.parker.com/hydraulics)

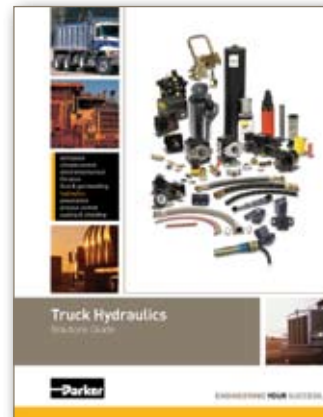
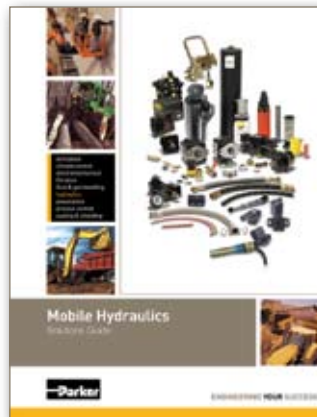
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Software and training programs

Call: 216-896-2495

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Parker also has Solution Guides available for the Mobile and Truck markets, each paired with an interactive DVD, call 1-800-C-PARKER.



### 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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The items described in this document are hereby offered for sale by Parker-Hannifin Corporation, its subsidiaries or its authorized distributor. This offer and its acceptance are governed by the provisions stated in the detailed "Offer of Sale."



## System Requirements

To view the DVD, the following are required:

- **Pentium®-class processor**
- **Win® 95 OSR 2.0, Win 98 Sec. Ed., Win ME, Win NT 4.0 (with Service Pack 5 or 6), Win 2000 or Win XP**
- **16 MB of RAM (32 recommended)**
- **20 MB of available hard-disk space**
- **DVD player**

## Acrobat Reader

Catalog files are viewed using Adobe Acrobat Reader. If you do not have Acrobat Reader installed on your PC, it will install from the DVD. If you have Acrobat Reader but do not have the search plug-in, you will be given the option to install Acrobat Reader 6.0 with search.

*You must have the search plug-in to take advantage of the search feature described in the next section.*

## To View the DVD

The DVD is self-loading. Just place it in your DVD drive. Acrobat Reader will open (or install), and the opening page will appear on your monitor. From this page you can navigate to the following sections.

- **Search takes you to the search feature. When the search window opens, type a word(s) or code\* and press enter. A list of pages where that word appears is shown. Select one and click the View button. Repeat as needed.**
- **Contents takes you to the selection of catalogs and products on the DVD.**
- **Product Overview takes you to a .pdf file of this Industrial Hydraulic Solutions Guide.**
- **Warning/Offer of Sale takes you to these legal documents.**
- **Getting Started provides a summary of how to navigate using Acrobat Reader.**
- **Contact Us provides you with phone, fax and online information.**

***\*Use the DVD search codes provided in this catalog to go directly to the section for that product.***



***\*Use the web addresses provided with each product to go directly to that product or series on the Parker web site.***

[www.parker.com/hyd/X](http://www.parker.com/hyd/X)

Text links are easily identified by blue type. The catalog files are fully bookmarked to make navigation quick and easy. Each catalog also has a bookmark which will take you to the Parker web home page for that division *if you are online while you are viewing the DVD*. You must first enter your web browser information into the Acrobat preferences.

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