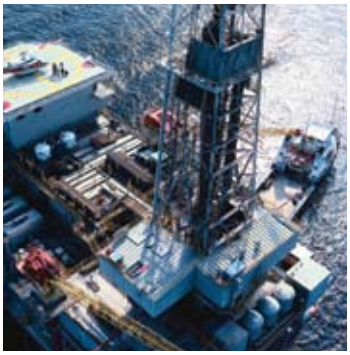
aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



Industrial Hydraulics

Innovative Products and System Solutions

Parker

ENGINEERING YOUR SUCCESS.

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Parker Hannifin Corporation

ENGINEERING YOUR SUCCESS.

A global Fortune 300 company with customers in 43 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 $10.7 billion in sales**
- **287 plants worldwide**
- **12,000 distributors**
- **427,000 customers**
- **Serving 1,200 distinct markets**
- **Listed as PH on the NYSE**

The Parker Brand Promise

Parker is the global leader in motion and control technologies, partnering with its customers to increase their productivity and profitability.

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

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' trusted 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 and 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. Customers can be assured that no one knows industrial hydraulics like Parker's staff of highly qualified application and design engineers, innovation teams, and our systems-solutions specialists. Our customers can reduce their number of vendors without compromising product integrity. 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

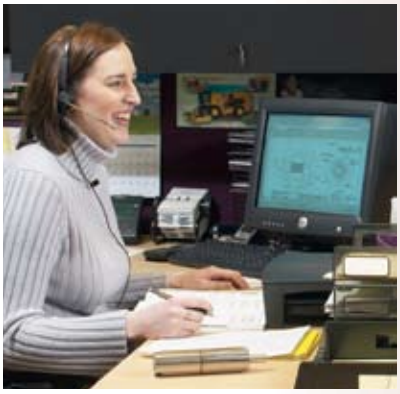
Parker believes that it takes more than our great products, competitive prices, and on-time delivery to satisfy customer demands. It takes a commitment to provide exceptional value.

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**
- **Components 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 field-sales engineers walk the walk and talk the talk. The best trained in the business, our field-sales engineers can be your single point of contact for any hydraulic requirement, including rapid problem solving. All are degreed engineers who are dedicated to long-term relationships. 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. 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 800-CPARKER or via our web site at 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. Classes are held at your facilities or at Parker.

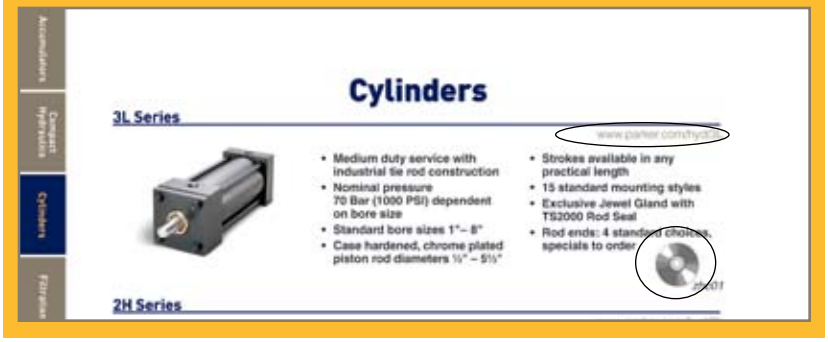
Hundreds of North American colleges and universities use Parker textbooks in motion and control courses. In addition to texts, Parker provides these institutions instructor guides, computer-based training discs, digital overheads on CD, final exams, drafting and simulation software, lab manuals, and trainer stands.

Find out more about Parker training by visiting: 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 CD 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 CD icon in the brochure into Acrobat's search field.



Parker is your partner when it comes to increased productivity and profitability. No matter what your needs, Parker is your single source provider of all your hydraulic motion and control solutions. Parker - Engineering your Success.

Industrial Hydraulic Components

Parker offers one of the world's most extensive 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. They 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 hydraulic 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.

Cylinders

Parker is the leading manufacturer of hydraulic cylinders for industrial equipment applications. From tie rod type to welded and telescoping designs manufactured by our Custom Cylinder Operation, Parker has the cylinder size and mounting configuration for the most demanding applications. We offer a variety of feedback options including the WaveScale Linear Displacement Transducer for accurate control of cylinder position. Regional cylinder manufacturing plants provide local support to ensure personalized customer service and timely cylinder delivery.

Industrial Hydraulic Components

Filtration
Filtration products designed by Parker 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 hydraulics, pneumatics and fluid systems. Products range from high-quality, 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 when and where you need them.

Cartridge Valves and Manifolds
Parker offers the broadest line of threaded cartridge valves including: flow, pressure, directional, proportional, load/motor controls and check/shuttle valves. Additionally, Parker has design and application expertise to provide integrated hydraulic circuits (hydraulic manifold blocks) to meet any application.

Motors
Our full line of high and low speed motors provides power up to 15,000 in-lbs of torque. A complete range of sizes is offered in gear, gerotor 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 in 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 is an industry leader in the design and manufacture of hydraulic rack and pinion and vane style rotary actuators with torque output to 63 million in-lbs. In conjunction with a standard offering of rotary actuators, we work with customers on designs to meet specific application requirements. Rotary actuators provide smooth motion to perform a variety of actions, including upending, turning, rolling over, tilting, indexing, transferring, mixing, valve operating, tensioning and clamping.

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

- 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
- ASME, CE and other certifications available

ACP Series Non-Repairable Piston Accumulators

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

- Standard capacities from 10 cu.in. (.16 liters) to 15 gallons (56 liters)
- Maximum operating pressures up to 455 Bar (6600 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
- ASME, CE and other certifications available

Diaphragm Accumulators

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

- 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

- 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

- 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

- 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 • 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	½
550	207 (3000)	11 (3)	½ – 5	⅓ – 3

Gear Motors

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^3/rev) (in^3/rev)	1.48 .09
Max continuous pressure (Bar) (PSI)	345 5000
Max speed (rpm)	25000

Compact Hydraulics

Piston Pumps

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^3/rev) (in^3/rev)	0.156 0.0095	0.206 0.0126	0.259 0.0158	0.311 0.0190	0.346 0.0211	0.417 0.0255	0.519 0.0317	0.692 0.0422	0.865 0.0527
Max continuous pressure (Bar) (PSI)	241 3500	241 3500	241 3500	241 3500	241 3500	241 3500	241 3500	224 3250	207 3000
Max speed (rpm)	4400	4200	4000	3800	3800	3700	3700	3600	3500

Cartridge Pumps

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^3/rev)	0.1 to 0.33 0.006 to 0.020
Max continuous pressure (Bar) (PSI)	207 3000
Max speed (rpm)	5000

Hand Pumps

750-1

750-2

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

Model 750-1

- **Controls single acting cylinder**
- **Includes manual release valve**

Model 750-2

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

Cylinders

3L Series

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"
- Case hardened, chrome plated piston rod diameters ½" – 5½"
- 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

2H Series

www.parker.com/hyd/2h

- Heavy duty service with industrial tie rod construction
- Nominal pressures up to 210 Bar (3000 PSI)
- Standard bore sizes 1½"–6"
- Piston rod diameters ⅝"–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

- Heavy duty service with industrial tie rod construction
- Nominal pressures up to 210 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

WaveScale

www.parker.com/hyd/wavescale

- Nominal pressures up to 210 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

Cylinders

HMI Series

www.parker.com/hyd/hmi

- Nominal pressures up to 210 Bar (3000 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

CHE Series

www.parker.com/hyd/che

- Repairable construction, aluminum alloy extruded design
- Bore Sizes from 20mm to 100mm
- Strokes in 1mm increments up to 100mm dependent on bore size
- Piston rod diameters 12mm through 56mm
- 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
- Piston position sensing switches available

Custom

www.parker.com/customactuators

- Bores to 48"
- Single stage strokes in excess of 75 feet
- Pressures to 689 Bar (10,000 PSI)
- Intensifier pressures up to 4,130 Bar (60,000 PSI)
- Welded, threaded head and ram designs
- Telescopic cylinders
  - Single acting
  - Double acting
- Single stage "rod type" cylinders
  - Single acting
  - Double acting
- Various materials and coatings
  - Stainless steel
  - Electroless nickel
  - Nitriding
  - Chrome, double chrome
- Typical options
  - Load holding valves
  - Electrohydraulic transducers
  - End of stroke hydraulic cushions
  - Protective rod boots
  - Proximity switches
  - Flow controls, flow fuses
- Agency approvals such as ABS, DNV, Coast Guard approval, MIL-I-45208, can be met and exceeded
- Feedback devices available in all designs
- Custom cylinder designs for your specific application

Filtration

Low Pressure

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 Liters/Min (GPM)	Max Pressure Bar (PSI)	Mounting Style
12AT	64 (17)	10.3 (150)	Spin-on
50AT	136 (36)	10.3 (150)	Spin-on
KLS/KLT	452 (120)	10.3 (150)	Tank top return line
PT	190 (50)	10.3 (150)	Tank top
RF7	1131 (300)	10.3 (150)	Tank top
Moduflow	452 (120)	13.8 (200)	In-line, L-style
BGTS	2400 (640)	10.3 (150)	Return In-tank

Medium Pressure

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 Liters/Min (GPM)	Max Pressure Bar (PSI)	Mounting Style
15CN	94 (25)	69 (1000)	In-line
40CN	302 (80)	69 (1000)	In-line
80CN	452 (120)	69 (1000)	In-line
MPDH	581 (150)	207 (3000)	Duplex
IL8	1609 (425)	34.5 (500)	In-line, Duplex

High Pressure

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 15/30P Series)
- Reverse flow option (50PR Series) for HST circuits

Model	Max Flow Liters/Min (GPM)	Max Pressure Bar (PSI)	Mounting Style
15P	75 (20)	207 (3000)	In-line, manifold
30P	170 (45)	207 (3000)	In-line, manifold
30PD	94 (25)	207 (3000)	In-line, duplex
50P	377 (100)	345 (5000)	In-line, bowl up
50PR	264 (70)	345 (5000)	In-line, reverse flow
18P	94 (25)	414 (6000)	In-line
28P	207 (55)	414 (6000)	In-line
38P	415 (110)	414 (6000)	In-line
272/372	455 (120)	414 (6000)	In-line, reverse flow
100P	1000 (265)	414 (6000)	In-line
ServoSaver	115 (30)	275 (4000)	Manifold, sandwich plate
12S	95 (25)	1380 (20000)	In-line

Filtration

Portable/Offline Systems

www.parker.com/hyd/guardian • www.parker.com/hyd/pvs • www.parker.com/hyd/filtercart

- Provide flexibility for removing contaminants from hydraulic fluid
- Guardian hand-held purification system with 4 GPM (15 LPM) flow
- Choice of five portable purification systems (PVS series) in 5, 10, 20, 30 and 45 GPM flow rates
- Choice of two filter carts:
  - 5 GPM flow (500 SUS max.) and ½ HP motor
  - 10 GPM flow (3000 SUS max.) and ¾ HP motor

Reservoir Accessories

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

Par Gel

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

Par-Fit Elements

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

Fluid Analysis

Laser CM (LCM)

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:

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

Par-Test

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

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, features include:

- **Simple LED's 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**

IQ200

www.parker.com/hyd/iq200

The IQ200 is specifically designed to provide continuous, on-line monitoring of the particulate contamination level of hydraulic and lubrication fluids. The small, compact IQ200 can connect to virtually any system to give the user real-time data from every 3 seconds to 24 hours. Features include:

- **Adjustable contamination level alarms**
- **Laser accuracy and repeatability**
- **Integral flow and calibration check**
- **ISO 4406-1999 reporting format (4, 6, 14 micron) and correlation to NAS 1638**
- **Data displayed instantly in chronological or graphic form**

Fluid Connectors Brass Products

For a complete review of Parker Brass Products, please reference Catalog 3501-E/USA.

Hi-Duty

www.parker.com/brassprod

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

Flow Controls

www.parker.com/brassprod

- Miniature design
- Unidirectional
- Direct mounting
- One-piece construction
- Positional
- Full flow in both directions

Prestolok

www.parker.com/brassprod

- Push-to-connect
- Time-saving
- One-piece fitting
- Ease of assembly
- Brass and composite bodies
- Full flow
- Swivels on all male pipe threaded shapes
- Sealant as standard

Manifolds

www.parker.com/brassprod

- Multiple connections
- Composite body
- Lightweight
- Push-to-connect ports
- Meets D.O.T. specifications

Compress-Align

www.parker.com/brassprod

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

Ball Valves

www.parker.com/brassprod

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

Fluid Connectors Thermoplastic Products

For a complete review of Parker Fluoropolymer Tubing Products, please reference Parker TexLoc Catalog 4150 and 4155.
For a complete review of Parker Metal Hose Products, please reference Parflex Metal Hose Catalog 4690-MH/US.

Thermoplastic Hydraulic Products

www.parker.com/parflex

- 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/parflex

- High temperature/high pressure hydraulic applications
- Corrosive environments and/or media
- Metal lined hoses
- Specialty hoses for food/ beverage and pharmaceutical
- Sizes: .250" up to 4"

Ultra High Pressure and Energy Products

www.parker.com/parflex

- Hydraulics up to 55,000 PSI
- Water blast products
- Adapters, fittings and valves
- Umbilicals for subsea applications
- Multitube™ bundled products for energy and processing markets

Fluoropolymer Tubing Products

www.parker.com/parflex

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 and Transportation Products

www.parker.com/parflex

- Industrial pneumatics
  – Tubing and coils in polyethylene, nylon, polypropylene, polyurethane and clear vinyl
- Transportation products
  – Airbrake tubing, Airbrake coils, fuel tubing and harnesses

Fluid Connectors Tube Fittings

For a complete review of Parker Tube Fittings, please reference Catalog 4300/USA.

O-Ring Face Seal Fittings

www.parker.com/tfd

- 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

- 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

- 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

- 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

4-Bolt Flange Connections

www.parker.com/tfd

- 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

Pipe Fittings and Adapters

www.parker.com/tfd

- 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

Fluid Connectors Quick Couplings

For a complete review of Parker Quick Coupling Products, please reference Catalog 3800/USA.

Parker offers one of the most complete lines of couplings, check valves and hose swivels available to the industrial marketplace. These products are available in steel, brass and stainless steel for nearly every application. A wide variety of sealing and port options make them a very versatile choice.

General Purpose Quick Couplings

www.parker.com/quickcouplings

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

- **Sizes from ½" to 2½"**
- **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

www.parker.com/quickcouplings

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

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

Swivels

www.parker.com/quickcouplings

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

- **Sizes from ¼" to 2"**
- **Steel, stainless steel**
- **Pressures to 5000 PSI**
- **Inline and 90° (PS Series); 90° (S Series)**
- **Plating options available**

Diagnostic Nipples and Equipment

www.parker.com/quickcouplings

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.

Equipment:

- **ServiceJunior – measures pressure to 9600 PSI**
- **Serviceman – measures pressure temperature, RPM and flow**
- **Service Master - measures and stores pressure, temperature, RPM and flow**

Fluid Connectors Quick Couplings

Check Valves

www.parker.com/quickcouplings

CV

DT

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

- **Sizes from ¼" to 1¼"**
- **Pressures to 5000 PSI**
- **Crack pressures: 5–200 PSI**

Fluid Connectors Rubber Hose Products

For a complete review of Parker Rubber Hose products, please reference Catalog 4400/USA.

Nobody offers more hose and fittings in more variations than Parker. With more than 750 end configurations, our Chromium-6 Free coated steel and our brass and stainless fittings include: o-ring face seal, flare, straight thread, male pipe and metric designs in both crimp and field-attachable styles. All have been tested and approved to meet stringent worldwide standards such as SAE, ISO, and DIN.

Our high-quality hoses are a perfect compliment to our fittings, offering ¼-in. to 3-in. inner diameters in a variety of inner-tube, reinforcement, and cover combinations to meet your specific application requirements.

Low Pressure

www.parkerhose.com

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.

Medium Pressure

www.parkerhose.com

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.

High Pressure

www.parkerhose.com

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.

Motors Calzoni Radial Piston LSHT

The outstanding performance of this robust product is the result of our original, patented design. Used widely in the Injection molding, mining, off shore drilling, oil field, and marine 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/mr

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

Frame size MR/E*	33	57	73	93	110	125	160	190	200	250	300
Displacement (cm^3/rev) (in^3/rev)	32.1 2.0	56.4 3.4	72.6 4.4	92.6 5.7	109.0 6.7	124.7 7.6	159.7 9.8	191.6 11.7	199.2 12.2	250.9 15.3	304.4 18.6
Max pressure (Bar) (PSI)	300 4350	300 4350	300 4350	300 4350	300 4350	300 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^3/rev) (in^3/rev)	332.4 20.1	349.5 21.3	451.6 27.6	497.9 30.4	607.9 37.1	706.9 43.1	804.2 49.1	1125.8 68.7	1369.5 83.6	1598.4 97.5	1809.6 110.4
Max pressure (Bar) (PSI)	250 3626	300 4350	300 4350	250 3626	300 4350	300 4350	250 3626	300 4350	250 3626	300 4350	300 4350
Max speed (rpm)	750	640	600	600	520	500	450	330	280	260	250

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

Motors Calzoni Radial Piston LSHT

MRT-MRTE-MRTF Series-Fixed Displacement

www.parker.com/hyd/mrt

- 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^3/rev) (in^3/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^3/rev) (in^3/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/mrd-mrv

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

Frame size MRV/E* MRD/E*	300	330*	450 450	500*	700 700	800* 800*	1100 1100	1400* 1400*
Displacement (cm^3/rev) (in^3/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^3/rev) (in^3/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 • www.parker.com/hyd/700 • www.parker.com/hyd/716


700


110A


716

- **Single speed, wheel motor and two-speed styles**
- **Rugged, compact design**
- **Unique IGRT power element**
- **Integral selector valve on two-speed styles**
- **Maximum supply pressure 225 Bar (3250 PSI)**

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

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

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

Motors Low Speed High Torque

Torqmotor™ Small Frame

www.parker.com/hyd/tc • www.parker.com/hyd/tb • www.parker.com/hyd/te

TC TB/TE

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

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

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

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

Torqmotor™ TS Series

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

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

Motors Low Speed High Torque

Torqmotor™ Large Frame

www.parker.com/hyd/tf • www.parker.com/hyd/tg • www.parker.com/hyd/th • 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 (cm^3/rev) (in^3/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 (cm^3/rev) (in^3/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 (cm^3/rev) (in^3/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 (cm^3/rev) (in^3/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

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

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

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

M5 Fixed Displacement Motors

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

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

Motors High Speed

M2 Series

www.parker.com/hyd/m2

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

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

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

M4 Series

www.parker.com/hyd/m4

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

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

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

Power Units

Low-Profile V-Pak

www.parker.com/hyd/vpak • 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 ingression of contaminants**
- **SAE straight thread connections and ports used to prevent leaks**

Low-Profile V-Pak features:

- **Cleanout cover for easy access to reservoir**

D, H and V-Pak features:

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

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

Pumps Piston

PAVC Series

- High strength cast iron housing
- Built in supercharger
- High side load capacity
- Sealed shaft bearing option
- Two piece housing
- Cartridge controls
- Air bleed valve
- Thru-shaft option (PAVC100)
- Optional port location
- Full pressure rating on water glycol fluids
- Control drain may be filtered and/or cooled

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

PVP Series

- High strength cast iron housing
- Modular controls
- Fast response times
- Thru-shaft options
- Optional port location
- 9 and 11 piston design
- English and metric mounting features
- Low control pressures

Frame size PVP	-16	-23	-33	-41	-48
Displacement (cm^3/rev) (in^3/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	2600

Pumps Piston

PD Series

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

Frame size PD	-060	-075	-100	-140
Displacement (cm^3/rev) (in^3/rev)	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
Self priming speed @ 1 Bar inlet pressure	2400	2300	2100	2000

PVplus Series

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

Frame size PVplus	-16	-20	-23	-32	-40	-46	-63	-80	-92	-140	-180	-270
Displacement (cm^3/rev) (in^3/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

Premier Series

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

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

- 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

T6H Series Hybrid

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.

Frame size T6H*	20B	20C	29B	29C	29D	29DB
Displacement** (cm^3/rev) (in^3/rev)	5.7 - 92.9 .35 - 5.63	10.8 - 142.9 .66 - 8.70	5.7 - 111.9 .35 - 6.83	10.8 - 161.9 .66 - 9.88	47.5 - 219.9 2.90 - 13.42	53.2 - 269.9 3.25 - 16.47
Max pressure*** (Bar) (PSI)	240 3500	240 3500	200 3000	200 3000	200 3000	200 3000
Max speed*** (rpm)	2600	2600	2400	2400	2400	2400

*Complete model code required, see catalog on CD
**Piston pump at full displacement
***Lower for larger displacements, see catalog

Pumps Fixed Displacement Vane

T Series Single

- **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	7B	6C	7D/S	7E/S
Displacement* (cm^3/rev) (in^3/rev)	5.8-50 .35-3.1	10.8-100 .66-6.1	44-158 2.7-9.6	132.3-268.7 8.1-16.4
Max pressure** (Bar) (PSI)	320 4650	275 4000	300 4350	240 3500
Max speed** (rpm)	3600	2800	3000	2200

*Available range based on various combinations of displacements
**Lower for larger displacements. See catalog.

Pumps Fixed Displacement Vane

T Series Double

- Low noise
- SAE or ISO standards
- One piece shaft (no internal torque limitations)
- One inlet
- 32 porting orientations available
- Wide displacement possibility
- High power to weight ratio
- Wide range of options available - shafts, threads and pilots

Frame size T	7BB/S	6CC	67CB	7DB/S	67DC
Displacement* (cm^3/rev) (in^3/rev)	11.6-100 .7-6.2	21.6-200 1.3-12.2	16.6-150 1.0-9.2	49.8-208 3.0-12.7	54.8-258 3.3-15.7
Max pressure** (Bar) (PSI)	320 4650	275 4000	300 4350	300 4350	275 4000
Max speed (rpm)	2200	2200	2200	2200	2200

Frame size T	7DD/S	7EB/S	67EC	7ED/S	7EE/S
Displacement* (cm^3/rev) (in^3/rev)	88-316 5.4-19.2	138.1-318.7 8.4-19.5	143.1-368.7 8.8-22.5	176.3-426.7 10.8-26	264.6-537.4 16.2-32.8
Max pressure** (Bar) (PSI)	250 3630	300 4350	275 4000	250 3630	240 3500
Max speed (rpm)	2200	2200	2200	2200	2200

*Available range based on various combinations of displacements
**Lower for larger displacements. See catalog.

T Series Triple

- Low noise
- SAE or ISO standards
- One piece shaft (no internal torque limitations)
- One inlet
- 128 porting orientations available
- Many displacement combinations per stage
- High power to weight ratio
- Wide range of options available - shafts, threads and pilots

Frame size T	67DBB	67DCB	67DCC	7DDB/S	67DDCS	7EDB/S	67EDC/S
Displacement* (cm^3/rev) (in^3/rev)	55.6-258 3.4-15.8	60.6-308 3.7-18.8	65.6-358 4.0-21.8	93.8-366 5.7-22.3	98.8-416 6.0-25.3	182.1-476.7 11.1-29.1	187.1-526.7 11.4-32.1
Max pressure** (Bar) (PSI)	300 4350	300 4350	275 4000	300 4350	275 4000	300 4350	275 4000
Max speed (rpm)	2200	2200	2200	2200	2200	2200	2200

*Available range based on various combinations of displacements
**Lower for larger displacements. See catalog.

Pumps Fixed Displacement Vane

SDV Single

The SDV Series fixed displacement vane pumps are 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.

Frame size SDV10*	1*1	1*2	1*3	1*4	1*5	1*6	1.7
Displacement (cm^3/rev) (in^3/rev)	3.3 .20	6.6 .40	9.8 .60	13.1 .80	16.4 1.00	19.5 1.19	22.8 1.39
Max 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

*Complete model code required, see catalog on CD

Frame size SDV20*	1*6	1*7	1*8	1*9	1*11	1*12	1*13
Displacement (cm^3/rev) (in^3/rev)	19.5 1.19	22.8 1.39	26.5 1.62	29.7 1.81	36.4 2.22	39.0 2.38	42.4 2.59
Max 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

*Complete model code required, see catalog on CD

SDV Double

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

Frame size SDV2010*	1F7	1F8	1F9	1F11	1F12	1F13
Displacement** (cm^3/rev) (in^3/rev)	26.1 - 45.6 1.6 - 2.78	29.8 - 49.3 1.81 - 3.00	33.0 - 52.5 2.02 - 3.20	39.7 - 59.2 2.42 - 3.61	42.3 - 61.8 2.58 - 3.77	45.7 - 65.2 2.80 - 4.00
Max pressure (Bar) (PSI)	175 2500	175 2500	175 2500	175 2500	150 2200	150 2200
Max speed (rpm)	1800	1800	1800	1800	1800	1800

*Complete model code required, see catalog on CD
**Based on combinations with SDV10 sizes

Frame size SDV2020*	1F7	1F8	1F9	1F11	1F12	1F13
Displacement** (cm^3/rev) (in^3/rev)	42.3 - 65.2 2.58 - 4.00	46.0 - 68.9 2.80 - 4.20	49.2 - 72.1 3.00 - 4.00	55.9 - 78.8 3.41 - 4.81	58.5 - 81.4 3.57 - 4.96	61.9 - 84.8 3.87 - 5.15
Max pressure (Bar) (PSI)	175 2500	175 2500	175 2500	175 2500	150 2200	150 2200
Max speed (rpm)	1800	1800	1800	1800	1800	1800

*Complete model code required, see catalog on CD
**Based on combinations with SDV10 sizes

Pumps/Motors Gear

PGP 500 Series

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**
- **Certain models are available through the Rapid Response Program (RRP)**

Frame size PGP505	-2	-3	-4	-5	-6	-7	-8	-9	-10	-11	-12
Displacement (cm^3/rev) (in^3/rev)	2 .12	3 .18	4 .24	5 .31	6 .37	7 .43	8 .49	9 .55	10 .61	11 .67	12 .73
Max 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 (rpm)	4000	4000	4000	4000	3600	3300	3000	2900	2800	2400	2400

Frame size PGP511	-6	-7	-8	-10	-11	-14	-16	-18	-19	-21	-23	-27	-28	-31
Displacement (cm^3/rev) (in^3/rev)	6 .37	7 .43	8 .49	10 .61	11 .67	14 .85	16 .98	18 1.10	19 1.16	21 1.28	23 1.40	27 1.65	28 1.71	31 1.89
Max continuous pressure (Bar) (PSI)	250 3500	250 3500	250 3500	250 3500	250 3500	250 3500	250 3400	250 3400	250 3250	235 3000	225 2750	190 2350	185 2300	165 2100
Max speed at (rpm)	4000	4000	4000	3600	3600	3300	3000	3000	3000	2800	2800	2400	2300	2300

Please see the CD for more information on the Rapid Response Program (RRP).

Pumps/Motors Gear

PGP300 Series

www.parker.com/hyd/pgp300

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

Frame size PGP315/PGM315	-05	-06	-07	-08	-10	-11	-12	-13	-15	-16	-17	-18	-20
Displacement (cm^3/rev) (in^3/rev)	10.2 .620	12.7 .775	15.2 .930	17.8 1.09	20.3 1.24	22.9 1.40	25.9 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^3/rev) (in^3/rev)	16.1 .985	24.2 1.47	32.3 1.97	40.4 2.46	48.4 2.95	56.5 3.44	64.6 3.94
Max continuous pressure (Bar) (PSI)	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^3/rev) (in^3/rev)	20.9 1.28	31.3 1.91	41.8 2.55	52.2 3.19	62.7 3.82	73.1 4.46	83.6 5.10	94.0 5.73	104.5 6.38
Max continuous pressure (Bar) (PSI)	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^3/rev) (in^3/rev)	44.3 2.70	59.0 3.60	73.8 4.50	88.5 5.40	103.3 6.30	118.0 7.20	132.8 8.10	147.5 9.00
Max continuous pressure (Bar) (PSI)	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

Pumps/Motors Gear

HP7 Series

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^3/rev) (in^3/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

- 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^3/rev) (in^3/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	268.4 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

- 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 triple configurations
- Integral priority valve available
- Electric clutches available
- Certain models are available through the Rapid Response Program

Frame size P16	-45	-65	-85	-100	-115	-150	-180	-200
Displacement (cm^3/rev) (in^3/rev)	14.4 .88	20.8 1.27	27.3 1.66	32.1 1.96	36.7 2.24	48.1 2.93	57.5 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

Please see the CD for more information on the Rapid Response Program (RRP).

Rotary Actuators

HTR Series

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

M (Mill) Series

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

Contact the factory, many other sizes available

LTR Series

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

Rotary Actuators

HRN Series

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^3/rad (in^3/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

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

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

Custom Engineered Products

www.parker.com/customactuators

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 • 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**

Valve Size	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

Manapak Sandwich Valves

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
Type	Check	P.O. Check	Flow control	Direct operating pressure reducing	Pressure reducing	Pressure relief
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)
Max optional pressure: (Bar) (PSI)	345 5000	345 5000	345 5000	315 4560	345 5000	345 5000

Pressure Control Valves

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

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

Series/Function	R*M	R*R	RS*M	RS*R	PR*M	S*M	UR*M	US*M	VS	VM	VBY*A	VB
Relief	X	X	X	X					X	X		
Sequence						X					X	X
Pressure Reducer					X							
Unloader							X					
Max. Operating Pressure												
(Bar)	350	350	350	350	350	350	350	350	350	350	350	350
(PSI)	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000	5000
Maximum Flow												
NG06 LPM (GPM)									25 (6.7)	25 (6.7)	40 (10.7)	25 (6.7)
NG10 LPM (GPM)	150 (40)	250 (66.7)	150 (40)	250 (66.7)	150 (40)	150 (40)	150 (40)	150 (40)		60 (16)	160 (42.7)	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 (173.3)	650 (173.3)	650 (173.3)	650 (173.3)	650 (173.3)	650 (173.3)	650 (173.3)	650 (173.3)				

Valves Hydraulic

Flange Valves

- Available with Relief, Sequence, Pressure Reducing, and Check Functions
- Ideal for pump outlet ports, cylinder ports, manifolds, or any code 61/62 four bolt flange
- Extremely Precise pressure setting
- Leak free and cost effective flange mounting
- Fast response, high accuracy, and quiet, flutter-free control

Series	Ports	Max. Flow	Max Pressure SAE 61 Flange	Max Pressure SAE 62 Flange
C5V06	¾"	26.4 GPM	5000 PSI	6000 PSI
C5V08	1"	52.8 GPM	5000 PSI	6000 PSI
C5V10	1¼"	105.7 GPM	4000 PSI	6000 PSI
C5V12	1½"	198.1 GPM	3000 PSI	6000 PSI

Series	Ports	Max. Flow	Max. Inlet Pressure
R5*06	¾"	23.7 GPM	5000 PSI
R5*08	1"	79.3 GPM	5000 PSI
R5*10	1¼"	159.5 GPM	4000 PSI
R5*12	1½"	159.5 GPM	3000 PSI w/SAE 61 Flange, 5000 PSI w/SAE 62 Flange

Check Valves

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

Series	C	VCL	CP	LT, LTF	VLS	440, 450	480, 490	580, 590	J416A, J417A	AVF Pneu	AVF Hyd
Type	Check	Check	P.O.	Line Throttle	Velocity Fuse	High Press.	Soft Seat	Swing	Mini	Velocity Fuse	
Max flow range (LPM)	11-569	23-189	30-95		2-341				4-110	5-60	2-227
(GPM)	3-150	5-50	8-25		.5-90				1.20-29	SCFM	1.5 -60
Body material Brass	X						X			X	
Aluminum						X	X	X			
Steel	X	X	X	X	X	X					X
Stainless steel	X					X	X		X		
Port types/sizes: NPT	⅛" - 2"	¼" - 1¼"	⅜", ¾"	½", ¾"	⅜" - 1"	⅛" - 2"	⅛" - 2"	⅛" - 2"		¼" - ¾"	¼" - 1"
SAE	-4 thru -32			-8 thru -12	-6 thru -24	-4 thru -32	-4 thru -32	-4 thru -32	-4 thru -16		
BSPP	⅛" - 2"										
BSPT	⅛" - ¾"										
JIC		⅜" - 1¼"			⅜" - 1"	¼" - 2"	¼" - 2"	¼" - 2"	¼" - 1"		
Max operating press (Bar)	345	210	210	210	210	345	210	24	345	136	340
(PSI)	5000	3000	3000	3000	3000	5000	3000	350	5000	2000	5000

Valves Hydraulic

Exectrol Directional Control Valves

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	⅜"	¾"
Maximum flow (LPM) (GPM)	11.3 3	38 10	94 25	169 45		
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

- 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	⅛" - ¾"	⅛" - 1"	1¼" - 1½"	1¼" - 1½"	⅛" - ¼"	⅛" - 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

Valves Hydraulic

Ball Valves

www.parker.com/hyd/ball-low • www.parker.com/hyd/ball-high

- **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
High Pressure				
BVHP	2-Way	414 (6000)	¼" - 1"	Steel or Stainless Steel
BVAH	2-Way	414 (6000)	1¼" - 2"	Steel or Stainless Steel
BVHH	2-Way	689 (10,000)	½" - 2"	Steel or Stainless Steel
BV3H/BV4H	3 & 4-Way	414 (6000)	¼" - 2"	Steel or Stainless Steel
BVMM	2 & 3-Way	414 (6000)	¼" - 2"	Steel or Stainless Steel
Medium Pressure				
BV3D	3-Way (Diverter)	207 (3000)	¼" - 2"	Steel or Stainless Steel
BVAM	2-Way	138 (2000)	2½" - 4"	Steel
V500CS	2-Way	138 (2000)	¼" - 1"	Steel
V502SS	2-Way	138 (2000)	¼" - 2"	Stainless Steel
Low Pressure				
BVAL	2-Way (Suction)	28 (400)	¼" - 4"	Aluminum
V500P	2-Way	41 (600)	¼" - 2"	Brass
V590P	2-Way (Right Angle)	17 (250)	¼" - ½"	Brass

Valves Hydraulic

Flow Control Valves

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

Series	F	PC*K	PC*M	PC*MS	TPC	FG3PKC	N	MVI	MV	D
Type	Flow	PC flow	PC flow	PC flow	T & PC flow	T & PC flow	Needle	Cartridge Needle	Metering	Decelera-tion
Max flow (LPM) (GPM)	11 - 569 3 - 150	11 - 95 3 - 25	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
Body material Brass Steel Stainless Steel	 X X X	 X 	 X X	 X 	 X 	 X 	 X X X	 X 	 X X 	 X
Port types/sizes NPT SAE BSPP BSPT	 ⅛" - 2" -4 thru -32 ⅛" - 2" ⅛" - ¾"	 ¼" - ¾" -6 thru -12 	 ¼" - 1¼" -6 thru -16 	 	 ⅜", ¾" 	 	 ⅛" - 1¼" -4 thru -20 ¼" - ½"	 ¼" - ¾" 	 ⅛" - 1" -4 thru -16 ⅛" - 1" ¼" - ½"	 ⅜" - ¾"
Subplate				¼" - 1"		⅜"				⅜" - ¾"
Max operating pressure (Bar) (PSI)	 345 5000	 210 3000	 210 3000	 210 3000	 210 3000	 210 3000	 345 5000	 345 5000	 345 5000	 210 3000

Accessories and Plug Valves

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

Valves Hydraulic

DIN Slip-In Cartridge Valves

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**	**DSA**	**RE**	**DSD**	**DSM**	**DSF**
Normal sizes (NG)	16 -100	25 - 100	25 - 100	16 - 63	16 - 63	16 - 63	16 - 63	16 - 40
Max operating pressure (Bar) (PSI)	350 5075	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**	**C10**	**C111**	**C121**	**C13DCC**	**C18DCC**	**C18**
Function	2-pos, 2-way	With poppet monitor switch	With poppet stroke limiter	With pilot valve interface	Active cartridge with poppet monitor switch	Active cartridge with dampening poppet & monitor switch	Active cartridge with dampening poppet
Normal sizes (NG)	16 -100	16 - 63	16 -100	16 -100	25 - 63	25 - 63	25 - 63
Max operating pressure (LPM) (GPM)	7000 1852	4000 1058	7000 1852	7000 1852	4000 1058	4000 1058	
Max operating pressure (Bar) (PSI)	350 5075		350 5075	350 5075	350 5075	350 5075	

Valves Electrohydraulic

Proportional Directional Control Valves

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	TDA
Performance	Std.	Std.	Std.	High	Servo	Throttle
Mounting: NG10, ISO/CETOP 5	X	X		X	X	
NG16, ISO/CETOP 7	X	X	X	X	X	
NG25, ISO/CETOP 8	X	X	X	X	X	X
NG32, ISO/CETOP 10	X	X		X	X	
Spool feedback				X	X	
Integrated electronics		X	X		X	
Max operating pressure (Bar) (PSI)	345 5000	345 5000	345 5000	345 5000	345 5000	350 5075

Series	D1FB, D3FB	D1FC	D*FW	D*FT	D**FL	D*FX	D*FP	D*FH	D1FM	D3FM
Performance	Std.	Std.	Std.	Std.	Std.	High	Servo	Servo	Servo	Servo
Mounting: NG06, ISO/CETOP 3	X	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	X
Integrated electronics				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	315 4500

Valves Electrohydraulic

Proportional Pressure Control Valves

www.parker.com/hyd/fcv

- 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	PE*W	VBY*K	VMY	RE06*T	RE06M*W2	RE*T	RE*W	PC	PE	DWE	DWU
Type	Pilot Op. Reduc-ing	Pilot Op. Relief	Pilot Op. Reduc-ing	Direct Op. Relief	Direct Op. Relief	Pilot Op. Relief	Pilot Op. Relief	Pilot Op. Reducing	Pilot Op. Reducing	Pilot Op. Reducing	Pilot Op. Reducing
Mounting: NG06, ISO/CETOP 3		X	X	X	X						
NG10, ISO/CETOP 5	X	X	X			X	X	X	X	X	X
NG25, ISO/CETOP 8	X					X	X	X	X	X	X
NG32, ISO/CETOP 10	X							X	X	X	X
Check valve									X		X
Integrated electronics				X		X		X	X		
Max operating press. (Bar) (PSI)	350 5075	315 4500	315 4500	350 5075	350 5075	350 5075	350 5075	350 5075	350 5075	350 5075	350 5075

Servovalves

www.parker.com/hyd/servo • www.parker.com/hyd/se

- Robust and reliable industrial strength valves for motion control applications
- Explosion-proof and intrinsi-cally 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)

Electronics

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	

Threaded Cartridge Valves

Flow Control Valves

www.parker.com/hyd/tfcv

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 cavity sizes from 4–20
- Pressures to 345 Bar (5000 PSI)
- Flows up to 378 LPM (100 GPM)
- Steel and aluminum bodies
- New RESILON™ D-Ring Seal eliminates need for back-up rings; improves wear, extrusion and spiral failure resistance
- Spherical Poppet design assures accurate alignment and reduces leakage rating on many valves
- New crimp design eliminates adhesive between adapter and cage

Solenoid Valves

- 10 standard termination options (and many specials)
- Many DC and AC voltages available
- Waterproof coil options
- Optional manual overrides

Pressure Controls

- Zinc-coated (protection from salt spray)
- Knob and tamper-proof options
- Low profile design (fits in tight spaces)

Valve Type	Max Working Pressure Bar (PSI)	Max Flow Setting LPM (GPM)	Flow Capacity LPM (GPM)
Needle valves	420 (6000)	–	225 (60)
Flow divider/combiner valves	350 (5000)	–	350 (5000)
Pressure compensated flow control valves	420 (6000)	–	40 (10)
Pressure compensators	420 (6000)	–	40 (10)
Priority-type, pressure compensated valves	420 (6000)	90 (25)	90 (40)
Priority-type, pressure compensated flow regulator valves	380 (5500)	75 (20)	95 (25)

Threaded Cartridge Valves

Pressure Control Valves

www.parker.com/hyd/tpcv

Valve Type	Max Working Pressure Bar (PSI)	Max Setting Pressure Bar (PSI)	Flow Capacity LPM (GPM)
Direct acting relief valves	420 (6000)	420 (6000)	151 (40)
Cross-over relief valves	350 (5000)	350 (5000)	120 (32)
Pilot operated relief valves	420 (6000)	420 (6000)	400 (106)
Pressure sensing valves	350 (5000)	–	189 (50)
Reducing/relieving valves	350 (5000)	350 (5000)	151 (40)
Direct acting pressure reducing valves	350 (5000)	350 (5000)	57 (15)
Pressure reducing valves	350 (5000)	350 (5000)	150 (40)
Sequence valves	420 (6000)	420 (6000)	120 (32)
Unloading relief valves	420 (6000)	207 (3000)	3.75 (1)
Logic elements	420 (6000)	420 (6000)	303 (80)

Directional Control Valves

www.parker.com/hyd/tdcv

Valve Type	Max Working Pressure Bar (PSI)	Flow Capacity LPM (GPM)
Manual valves	350 (5000)	49 (13)
Manual three-way valves	350 (5000)	19 (5)
Manual four-way valves	350 (5000)	17 (5)
Directional control valves	420 (6000)	400 (105)
Solenoid, poppet-type, two-way valves	350 (5000)	285 (75)
Solenoid, poppet-type, bidirectional valves	350 (5000)	285 (75)
Solenoid, spool-type, two-way valves	350 (5000)	30 (8)
Solenoid, spool-type, three-way valves	350 (5000)	30 (8)
Solenoid, spool-type, four-way valves	350 (5000)	30 (8)
Double solenoid, spool-type, four-way valves	350 (5000)	42 (11)

Threaded Cartridge Valves

Proportional Control Valves

www.parker.com/hyd/tpcv

Valve Type	Max Working Pressure Bar (PSI)	Flow Capacity LPM (GPM)
Solenoid operated, two-way, NC proportional flow control valves	207 (3000)	226 (60)
Solenoid operated, two-way, NO proportional flow control valves	207 (3000)	53 (14)
Solenoid operated, proportional relief valves	350 (5000)	150 (40)
Solenoid operated, proportional pressure reducing valves	207 (3000)	38 (10)
Solenoid operated, three-way, proportional pressure control valves	350 (5000)	38 (10)

Load/Motor Controls

www.parker.com/hyd/tlmv

Valve Type	Max Working Pressure Bar (PSI)	Max Flow Capacity LPM (GPM)
Load/Motor control valves	350 (5000)	350 (90)

Check/Shuttle valves

www.parker.com/hyd/tcsv

Valve Type	Max Working Pressure Bar (PSI)	Max Flow Capacity LPM (GPM)
Check valves	420 (6000)	500 (132)
Single P.O. check valves	420 (6000)	340 (90)
Dual P.O. check valves	420 (6000)	340 (90)
Shuttle valves	420 (6000)	50 (13)

Cartpak

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**
- **Wide range of hydraulic control functions, including:**
  - **– Pressure relief, pressure reducing, pressure sequencing**
  - **– Directional control (two-way, three-way)**
  - **– Flow control**
  - **– Proportional flow control**
  - **– Proportional pressure control**

Integrated Hydraulic Circuits

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 components**
- **Fewer leakage points**
- **Less space required**
- **Simplified assembly and service instructions**
- **Complete system solution with optimized functions**

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

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

When you need finished integrated hydraulic circuits with extremely short lead times, the Parker Speed Shop is the place to go. 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 3D-CAD. 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 produces fully functional hydraulic integrated circuits. All prototypes are fully tested and documented before being released to production. In today's highly competitive market, speed and quality are critical for success.

Action Directory

Innovative Products and System Solutions

www.parker.com/hydraulics

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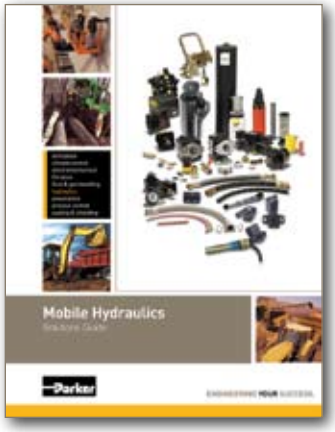

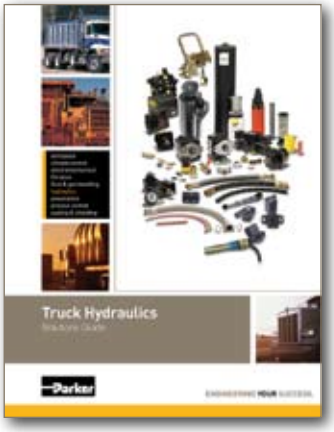

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FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

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CD Catalog

System Requirements

To view the CD, 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**

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 CD. 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 CD

The CD is self-loading. Just place it in your CD 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 CD.**
- **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.**

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 CD.* You must first enter your web browser information into the Acrobat preferences.

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