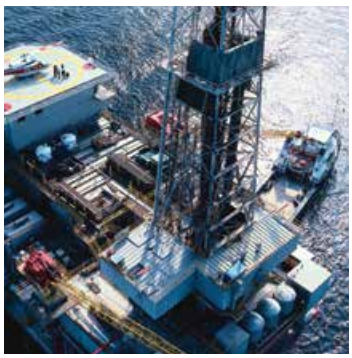
aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding



Industrial Hydraulics

Innovative Products and System Solutions

ENGINEERING YOUR SUCCESS.

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Parker Hannifin Corporation

A global Fortune 300 company with customers in 49 countries, Parker Hannifin is the world's leading supplier of hydraulic, pneumatic, and electro-mechanical 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 USD 13 billion in sales
- 312 plants worldwide
- 13,000 distributors / MRO Outlets
- 465,000 customers
- Serving 1,100 distinct markets
- Listed as PH on the New York Stock Exchange

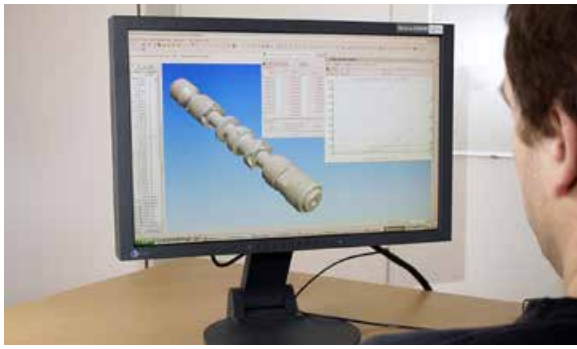
The Parker Brand Promise

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
hydraulics
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 any 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 13,000 distributors that can provide Parker products and services nearly anywhere, anytime.

Hydraulic Technology Centres

A Parker Hydraulic Technology Centre (HTC) distributor is your local one stop shop for all your industrial hydraulic needs. These centres are staffed with specialists who can provide engineering assistance, technical help, and full systems service for all your industrial hydraulic requirements. HTCs were introduced by Parker in order to meet the changing needs of industrial customers, while also increasing the level of service. Parker's HTC's are selected because they have made the commitment to provide exceptional customer service and complete industrial hydraulic system solutions. Additionally, they carry the largest inventory of hydraulic components to ensure fast delivery and less down time. A Parker HTC can provide assistance with rapid equipment development, prototype verification, and the immediate, yet smooth integration of state-of-the-art hydraulic and electronic systems.

At Parker Technology Centres you will find: advanced design and technology, local and worldwide inventory, a staff of application system engineers, and industry leading technical support and training.

To fulfill all your industrial needs and to locate your nearest Parker HTC, call our European Product Information Centre free on phone: 00800 27 27 53 74 if you are calling from Austria, Belgium, France, Germany, the UK, Eire or Switzerland. From other countries please call +44 1442 358 429 if you wish an English speaking service, +44 1442 358 428 for a German speaking service and +44 1442 358 427 for a French speaking service.

Parker's Value Proposition

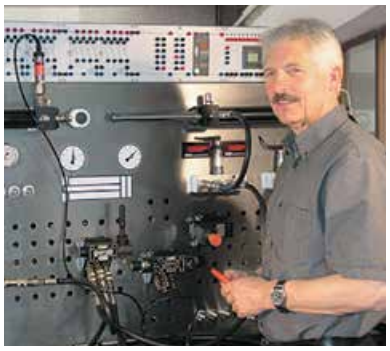
Industrial Systems Centres

Parker has dedicated hydraulic and fluid connector application engineers who are motion control experts. These people will assist the OEM customer in the analysis and evaluation of any motion control system. Using a methodology of 'Analyze/ Improve/Maximize', Parker will redesign an existing system to improve machine performance while maximizing efficiency and return on investment.

Analyze.Improve.Maximize.
TAKE A.I.M.

Parker Hannifin strongly believes that value added programs are just as important to our customers as breadth of line and system solutions. In addition to assured product quality, Parker provides engineering assistance, electronic ordering, customer training, on-time delivery, extensive product information, and consolidated shipments. Parker's Premier Customer Service leads the industry in response; our employees are empowered to do whatever it takes to meet or exceed customer expectations.

Parker's extensive breadth of product line allows us to provide unlimited solution possibilities. Our worldwide network quickly delivers your solution, even those built to order.
Whether you need a sub-system, sub-assembly, an entire system or even just components, Parker can deliver. For all your system requirements, look to the industry's most trusted name to be your single source hydraulics supplier.



Parker's Value Proposition

Training

Parker is recognized as the industry leader in the development and presentation of technical training for hydraulic and pneumatic technology. We offer complete and comprehensive texts, along with hands-on classroom opportunities to our employees, distributors, and customers. This includes web based training, on site training, and classroom training at various Parker locations. Our focus is on the practical approach to training, stressing active participation by students to increase their confidence and understanding of motion control technology. Hundreds of colleges and universities have adopted the Parker generic textbooks as the foundation for motion and control courses offered at their institutions. Training support materials include textbooks, instructor guides, computer-based training CDs, lab manuals and trainer stands.

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 mobile hydraulics 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 mobile hydraulic components and systems are designed to deliver precise, reliable control in space-saving, weight-saving packages.

Accumulators

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

Air Oil Coolers

The LAC air oil cooler with single-phase or three-phase AC motor is optimised for use in the industrial sector. Together with a wide range of accessories, the LAC cooler is suitable for installation in most applications and environments. The maximum cooling capacity is 300 kW at ETD 40 °C. Choosing the right cooler requires precise system sizing. The most reliable way to size is with the aid of our calculation program. This program, together with precise evaluations from our experienced, skilled engineers, gives you the opportunity for more cooling per € invested.

Cylinders

Parker is a leading manufacturer of hydraulic cylinders for industrial equipment applications. Our cylinders keep on delivering the high performance you expect from Parker, over millions of trouble-free cycles. Parker cylinders have consistently proved to be the most reliable and cost-effective industrial cylinders on the market today.

Industrial Hydraulic Components

Filtration

Parker filtration products are designed 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, ParFit replacement elements and fluid analysis instruments.

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 available in a wide range of core-tube materials, reinforcement designs and outer covers. Our global distribution network and strategically located service centres ensure that you can get the products you need when and where you need them.

Hydraulic Manifold Blocks

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

Hydraulic Controls and Valves

We make hydraulic control 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.

Motors

Our full line of high and low speed motors provide power ranging up to 212,000 Nm of torque. A complete range of sizes is offered in gear, vane, gerotor and piston style operating configurations. Fixed and variable placement 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, catalogued hydraulic power units in the industry. We offer everything from 20 litres vertical to 625 litres overhead style platforms. Parker also offers custom power units that are designed and built to customer specifications; these units can be accessorized for almost any application, offering the convenience of one stop shopping in one quality unit. All Parker power units are backed by complete engineering support including control documentation for use on the shop floor. Additionally, most Parker catalogued 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 rotary actuators, with torque output to 68,000 Nm. In conjunction with a standard offering of rotary actuators, we work with customers on designs to meet specific application requirements. Rotary actuators provide constant high torque to perform a variety of actions, including upending, turning, rolling over, tilting, indexing, transferring, mixing, valve operating, tensioning and clamping. Applications include machine tool, packaging, marine, primary metals, rubber and plastics machinery and material handling.

Accumulators - Piston, Bladder and Diaphragm

A Series Piston Accumulators

- Over 20 standard capacities from 0.1 litres to 76 litres
- 50, 75, 100, 125, 150 and 200 mm nominal bore sizes
- 250 and 350 bar max. working pressures
- Piston speeds up to 4 m/s
- Flow rates up to 5,700 l/min
- Five lobe V - O ring piston seals in five standard seal compounds
- Accumulator and gas bottle configurations
- CE approved to new PED 97/23/EC
- Other approvals available

za 01

AP Series Piston Accumulators

- Over 20 standard capacities from 6 litres to 300 litres
- 180, 250 and 360 mm bore sizes
- 250 and 350 bar maximum working pressures
- High performance sealing systems for piston speeds up to 8 m/s
- Flow rates up to 45,000 l/min
- High flow ports for rapid cycling performance
- Accumulator and gas bottle configurations
- CE approved to new PED 97/23/EC
- Other approvals available

za 02

Bladder Accumulators EHV from 330 to 690 bar

- Standard capacities from 0,2 to 57 Litres
- From 330 to 690 bar
- Operating temperature : - 20 °C + 80 °C
- Shell material options include alloyed steel, stainless steel, aluminium, titanium, composites and other internal protections available.
- Various bladder materials available which are compatible with a range of fluids and temperatures.
- CE approved (Meet conformity assessment according to the PED).
- Other approvals available

za 03

Diaphragm Accumulators ELM from 140 to 350 bar

- 11 standard capacities from 0.075 to 3.5 Litres
- From 140 to 350 bar
- -20 °C / +80 °C for standard nitrile elastomers for models 0.075 ≥ 1.4 Litres
- -10 °C / +80 °C for standard nitrile elastomers for models ≥ 2 Litres
- -35 °C / +80 °C for hydrin elastomers
- Materials : carbon steel or stainless steel, nitrile or hydrin diaphragm (for other contructions: contact Parker).
- Meet conformity assessment according to the PED (For information about SELO and SELO + CE availablility: contact Parker)

za 07

Accumulator Charging Kit and Mounting Accessories

- Charging and gauging equipment
- Gauge adapters and assemblies
- Unloading valves
- Mounting clamps and base brackets
- U-Bolt mounting hardware
- Bust discs

za 01

Accumulators / Compact Hydraulics

Accumulator Safety Blocks

- Protects and isolates any type of accumulator
- Simplifies discharging for routine maintenance
- 350 bar maximum operating pressure
- Available in NG10, NG20 and NG32 series
- User-replaceable, cartridge-type relief valve
- Manually- or electrically-operated discharge valves

za 01

Piston Pumps

- Designed for open circuit systems
- Fixed displacement
- Clockwise, counter-clockwise, or bi-directional rotation
- Naturally aspirated to 5000 rpm
- Porting on sides or rear
- Operate efficiently on thin (1 cS) fluid
- Operating temperature: –40 °C to 150 °C

zo 03

Frame size H	450	600	750	900	1000	1200	1500	2000	2500
Displacement (cm^3/rev)	0.156	0.206	0.259	0.311	0.346	0.417	0.519	0.692	0.865
Max cont pressure (bar)	241	241	241	241	241	241	241	224	207
Max operating speed (rpm)	4400	4200	4000	3800	3800	3700	3700	3600	3500

Cartridge Pumps

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

zc 04

Displacement (cm^3/rev)	0.1 to 0.33
Max cont pressure (bar)	207
Max operating speed (rpm)	6000

Compact EHA

- Compact, free-standing actuator for high power density applications
- Provides a complete actuation system for space critical industrial, mobile and remote use
- Eliminates need for separate pump, tank, hoses, valves and actuator
- Max. force, extension - 21.3kN
- Max. force, retraction - 16.0kN
- Max. speed - 84mm/s (no load)
- Standard stroke lengths - 102 mm, 152 mm, 203 mm
- Mounting pin diameters - 6.4 mm, 9.5 mm, 12.7 mm
- Motor Options - 12V DC, 245W or 560W; 24V DC, 245W or 560W

zo 04

Coolers

Air/Oil Coolers

LAC – AC motor

- Cooling capacity up to 300 kW
- Single-phase or three-phase AC motor
- Compact and light weight
- Quiet fan and motor
- Low pressure drop
- High cooling capacity
- Service-friendly, easy to retrofit
- LAC-X for ATEX requirements
- LAC-M for marine environments
- For Power Units
- Lubrication Systems
- Marine Cranes
- Presses
- Wind Power

zco 01

LOC – circulation pump

- Cooling capacity up to 45 kW
- Integrated circulation pump
- Compact and light weight
- Quiet fan and motor
- Low pressure drop
- High cooling capacity
- Service-friendly, easy to retrofit
- For Power Units
- Lubrication Systems
- Marine Winches
- Presses
- Wind Power

zco 03

Water/Oil Coolers

PWO – Brazed

- Working pressure 15 bar @ +155 °C
- Maximum working temperature +225 °C
- Cooling capacity up to 500 kW
- Flow range up to 1600 l/min
- Light and compact
- Easy to install
- Cost efficient and environmentally friendly
- Wide range for many applications
- For Power Units
- Lubrication Systems
- Marine Cranes
- Presses
- Wind Power

zco 10

Coolers

Water/Oil Coolers

GWO – Gasketed

- Working pressure from 0-25 bar
- Working temperature from -30 °C to +180 °C
- Flow ranges from 0 to 4600 m3/h
- Efficient and compact
- Openable for mechanical cleaning
- Expandable for future capacity increases
- The gaskets limits the working temperature and does not suit all fluids
- For Power Units
- Lubrication Systems
- Marine Cranes
- Presses
- Wind Power

zco 09

SWO – Shell & Tube

- Working pressure standard 15 bar
- Working temperature up to +95 °C
- Flow range up to 900 l/min
- Cleaning without opening the hydraulic circuit
- Wide range
- Marine & Industrial series available
- The gaskets limits the working temperature and does not suit all fluids
- For Power Units
- Lubrication Systems
- Marine Cranes
- Presses
- Wind Power

zco 11

Cylinders

HMI/HMD

- Tie rod cylinder for heavy duty applications
- Maximum working pressure 210 bar
- Standard bore sizes 25 mm to 200 mm
- Available in any practicable stroke length
- Mounting styles and dimensions to ISO 6020/2 and DIN 24 554
- Up to three rod sizes per bore
- Piston rod diameters 12 mm to 140 mm
- Up to three male and three female rod end threads per bore, plus custom designs
- Up to 12 standard mounting styles
- Detachable gland for easy maintenance
- Parker profiled cushion for increased performance and productivity
- Wide range of mounting accessories
- Single and double rod designs
- Seal types to suit a wide variety of operating environments

zcy 05

2H

- Tie rod cylinder for heavy duty applications
- Maximum working pressure 210 bar
- Standard bore sizes 38.1mm to 304.8 mm
- Piston rod diameters 15.9 mm to 215.9 mm
- Rod ends: three standard choices, specials to order
- Available in any practicable stroke length
- 17 standard mounting styles
- Detachable gland for easy maintenance
- Parker profiled cushion for increased performance and productivity

zcy 02

3L

- Tie rod cylinder for medium duty applications
- Maximum working pressure 70 bar
- Standard bore sizes 25.4 mm to 203.2 mm
- Rod diameters 12.7 mm to 139.7 mm
- Available in any practicable stroke length
- Rod ends: three standard choices, specials to order
- 15 standard mounting styles
- Detachable gland for easy maintenance
- Parker profiled cushion for increased performance and productivity

zcy 01

HMIX

- Cylinders with integral feedback devices designed for use with servo and proportional valves in closed-loop applications
- Maximum working pressures up to 210 bar
- Bolt-on and integral manifolds available
- Full range of transducer types
- Wide range of stroke lengths available
- Simplifies machine design and reduces number of hydraulic lines
- Eliminates need for limit switches, deceleration valves, shock absorbers and mechanical linkages in many applications
- Integrally mounted valves eliminate assembly time and fittings
- Intrinsically safe and explosion proof designs available

zcy 04

Cylinders

Intellinder

- Integrated, fully protected electro-optical position sensor
- Rugged construction – uses the piston rod as the measuring scale
- Absolute position sensing delivers instantaneous response from startup
- Can be fitted with two or more sensors for multiple redundancy
- Minimal additional build length compared to standard cylinder
- Plug and play – supplied fully assembled and tested
- Maintenance-free design
- Integrated health monitoring avoids unplanned downtime
- Resolution – 0.03 mm
- Repeatability – 0.04 mm
- Long measured lengths – up to 2.4 metres as standard, longer strokes on request
- Rod diameters – 25 mm to 127 mm
- Ingression – connector, IP67 equivalent; sensor and lead IP68
- All standard pressure ratings

zcy09

MMA/MMB

- Maximum working pressures 250 bar (MMA) and 160 bar (MMB)
- Heavy duty, flanged 'mill' cylinders with bore sizes up to 320 mm
- Fatigue-free at rated pressure
- Mounting styles and dimensions to ISO 6022 (MMA) and ISO 6020/1 (MMB)
- Two rod sizes per bore
- Strokes available in any practical length
- Piston rod diameters up to 220 mm
- Detachable gland for easy maintenance
- Seal types to suit a wide variety of operating environments
- Parker profiled cushions for increased performance and productivity
- Wide range of options including feedback and position sensing

zcy 07, zcy 08

Custom Cylinders

- Bore sizes up to 500 mm
- Any practicable stroke length
- Working pressures up to 600 bar
- Welded, threaded head and tie rod designs
- Telescopic and single stage cylinders
- Single and double acting designs
- Various materials and coatings:
  - Stainless steel
  - Electroless nickel
  - Nitriding
  - Epoxy paint
- Options include:
  - Load holding valves
  - Electrohydraulic transducers
  - End of stroke cushions
  - Stop tubes
  - Position switches
  - Flow controls, flow fuses

Lightraulics® Composite Hydraulic Cylinders

- Working pressures up to 700 bar
- Bore sizes up to 250 mm
- Stroke length up to 3000 mm
- Roundline fully composite barrel or tie rod design
- Customized design versions possible
- Weight saving compared to standard steel cylinders up to 65 %
- Corrosion resistant
- Superior fatigue performance

zcy 10

Filtration

Total Product Offering

For Parker Filtration, our commitment to re-think, re-engineer and realign ourselves to fulfil the needs of our customers and their customers, is best demonstrated by our Total 'Global' Product Offering. In addition to the products highlighted here, a comprehensive catalogue is available. Many of the Filtration products are designed to ISO 14001 to meet Parker's global environmental commitment.

- Various mounting configurations
- High capacity/high efficiency quantumfiber™ media and environmentally friendly media options
- Visual and electrical indicators with several connector styles
- Tank mounted and in-tank models
- Integral indicator & breather options

Low Pressure

zf 01

Model	Max Flow Rate (l/min)	Max Pressure (bar)	Mounting Style
Suction Return	250	10	Tank Top
ETF Series	140	6	Tank Top
Tank Topper	650	10	Tank Top
IN-AGB	2400	10	Inside Tank
BGT-S	2400	10	Tank Top
Maxiflow	360	10	Spin-On
TTF	500	10	Tank Top
PT Series	400	10	Tank Top

Medium Pressure

- Various port options
- High capacity/high efficiency quantumfiber™ and iprotect, environmentally friendly media options
- Cartridge style by-pass valve
- Visual and electrical indicators with several connector styles

zf 02

Model	Max. Flow Rate (l/min)	Max Pressure (bar)	Mounting Style
GMF Series	660	70	Inline
45 Series	250	40	Inline

High Pressure

- Various mounting configuration
- High capacity/high efficiency quantumfiber™, iprotect, environmentally friendly media and iprotect® media options
- Visual and electrical indicators with several connector styles
- Flows up to 1,000 l/min at 414 bar

zf 03

Model	Max Flow Rate (l/min)	Max Pressure (bar)	Mounting Style
100 P Series	1000	414	Inline
8 Series	520	414	Inline
15P/30P Series	200	207	Inline
EPF iprotect®	700	450	Inline

Filtration

Portable Filtration Systems

- Provides flexibility for removing contaminants from hydraulic fluid
- Guardian hand-held portable filtration system with 15 l/min flow
- A range of trolley mounted portable filtration systems – 10MFP Series 38 l/min
- Choice of 5 portable purification systems with flow rates from 19 l/min to 113 l/min. Water, air and particulates removed from large systems with the PVS range

zf 04

Reservoir Equipment

- Metallic and non-metallic breathers and filler breathers
- Diffusers
- Fluid Level/temperature gauges
- Environmental air filters
- Spin-on breathers
- Suction strainers

zf 05

ParGel

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

zf 06

ParFit

- Extensive range of competitively priced Parker quality replacement filter elements for any filter brand
- Over 50,000 competitive inter-change listings help consolidate vendor base by allowing users to acquire all replacement elements from one source. Check out our online selector at www.parker.com/parfit
- Provides proven Parker performance in competitive filter housings

www.parker.com/hfde

Fluid Analysis

IcountOS

WiFi Option Available

The icountOS (Oil sampler) from Parker offfers users a compact, lightweight, robust and truly portable oil and fuel sampling and analysis solution that is both quick to use and accurate in its results. Utilising on-board, laser based, leading-edge technology, the IOS brings to all industries a truly innovative portable oil sampler as a remarkable, cost effective market solution to fluid management and contamination control.

- Fluid viscosity as high as 300cSt (usable range) will be able to pass through the detector at the proper flow rate
- WiFi option. 10m range utilizing 802.11n band width via an integral 150 Mbps router
- Reporting Standards ISO4406:1999, NAS1638 and RH% moisture sensor display in high intensity OLED format
- Data Storage up to 250,000 test points of information
- Compact, lightweight and robust, truly portable IOS makes field analysis simple, quick and easy
- Able to sample directly from a hydraulic reservoir, barrel and vehicle fuel tank or from a high pressure, online hydraulic system with the addition of a pressure reducing adaptor
- Completely self contained, with laser detection particle counter (icountPD), rechargeable battery and flow managment pump
- No special software needed. Embedded web page generator for data download onto any PC or laptop via a universal RJ45 connection interface
- Fast detection of the presence of contamination with a sampling period from 5 seconds to 999 seconds

zfa 03

Moisture Sensor Group

- Permanent inline moisture sensor for hydraulic and lubricating systems
- Compact real time solution for continuous water contamination monitoring
- MS150 – 10 bar max., reports the percentage relative humidity of the water
- MS200 – Programmable outputs for user flexibility
- MS300 – This failsafe model is programmable and ATEX approved, which means it is a fast, reliable and precise solution for detecting moisture in fluids, and it can be used in hazardous areas

zfa 02

ASIC 'Performer' Transducers & Transmitters

- One-piece body and diaphragm machining ensures long-term product stability
- All Stainless Steel construction
- 6 transducer pressure ratings, 0–5 V and 1–6 V outputs
- 6 transmitter pressure ratings – 2-wire 4–20 mA output
- Micro plug and M12 connector options

zfa 04

Fluid Analysis

Flow Meters and Monitors

A wide range of inline devices, for example flow meters, flow switches and test equipment for oil, water and air applications, flow monitors and precision monitors, flow transmitters, stainless steel flow meters for corrosive or chemical media, and flow-related products for challenging conditions.

zfa 05

SensoControl®

The handmeters and the complete test system of the SensoControl® product group are ideal for every application. They can be used for maintenance and repair in industrial applications and mobile hydraulic applications – monitoring the hydraulic parameters is always the first step in avoiding and preventing faults. Systematic troubleshooting is not possible without modern technical tools. To meet the needs of modern industrial hydraulics and the bewildering array of mobile hydraulics, we offer a range of different models.

zsc 01

Thermoplastic Hoses

Polyflex

High Pressure Hoses for Water Jetting

For low volumetric expansion and excellent flex-impulse life at pressures up to 400 MPa.

Applications: high pressure cleaning equipment, boiler tube cleaning, sewer jetting, water jet cutting. End fittings made from high performance safety critical materials. Assembling and testing with Polyflex assembly equipment.

Construction: thermoplastic with up to 2 braids of textile reinforcement and up to 8 braids of high tensile steel wires.
Size range: from 3 to 25 mm bore.
Working pressures: up to 400 MPa on 4.5 mm and 120 MPa on 25 mm
Temperature range: -10 °C to +70 °C.

zfc 01
Catalogue 4462

Polyflex Presto

Thermoplastic Tubing for Pneumatics

Thermoplastic single and multicore tubing bundles for most pneumatic applications. Tubing bundles containing up to 19 tubes for instrumentation, controls and system monitoring.

Materials: Polyethylene (PE), Polyurethane (TPU), Polyamide (PA).
Size range: 2 to 16 mm (1/8" to 1").
Temperature range: -40 °C to +80 °C.

zfc 02
Catalogue 5210

Polyflex/Parflex

Thermoplastic Hoses for Use in Hydraulic and Industrial Applications

For pressures up to 250 MPa.

Applications: low pressure to ultra high pressure hydraulics, pneumatics, surface finishes. PTFE hoses. Industrial gases, aggressive media and chemicals.

Construction: thermoplastic hoses with synthetic fibre/steel wire reinforcement.

Size range: from 5/64" to 1 1/4".
Temperature range: -57 °C to +250 °C.

zfc 03
Catalogue 4460

Thermoplastic Hoses and Tubes

Polyflex Products

For Beverage and Domestic Applications

Beverage industry: single line food quality tubing made of LDPE, PVC, PVDF, PA and EVA, PA and EVA. Multi layered co-extruded tubes, multicore bundles and fittings suitable for manufacturing and dispensing. Preformed tube for dispensing equipment, isolated Python bundles, various colours and striped designs. The smooth inner layer means outstanding cleaning properties, and the high flexibility guarantees easy installation.

zfc 04
Catalogue 4464

Polyflex Products

For Offshore Technologies

Single line hoses, bundles and supply hoses for onshore and offshore installations. Long length, high temperature, light weight hoses for subsea controls.

Materials: Polyamide (PA), Polyurethane (TPU), Aramid fibre, high performance steels and other specialised materials.

Construction: thermoplastics with 4 textile reinforcement braids and/or 6 spiral steel wire braids. Colour Guard function.

Size range: 3 to 75 mm bore (1/8" to 3").
Working pressure: 280 MPa on 5 mm (3/16") to 70 MPa on 75 mm (3").

Information on request

Parker Preformed Hose

Preformed Thermoplastic Products made of High Pressure Hose or Thermoplastic Tube

Combines the benefits of a custom-shaped steel tube and the flexibility of a hose. Thermoplastic hoses improve the productivity and quality of a system and help reduce costs. High pressure hoses up to 350 bar are easily preformed.

5CNG/5CNGA Hose

Hose for Gas Pipelines

Transport hose for natural gas and other gases. Stationary applications: refuelling hoses for gas filling stations, compressors, chemical plants and gas processing facilities. Mobile applications for cars, trucks and buses.

Inner layer: conductive polymer. Reinforcement: two or more braids of extremely tear-resistant synthetic fibres. Outer layer: polyurethane, perforated. Temperature range: -40 °C to +82 °C.

Hydraulic Fittings

EO-PSR, EO-2, EO2-FORM

EO-PSR

- Metallic sealed connection
- ISO 8434 cutting ring system

EO-2

- Soft seals
- ISO 8434 cutting ring connection

EO2-FORM

- ISO 8434 soft seal
- Pipe forming
- Pipe AD 6 - 42 mm
- Steel, stainless steel, brass
- NBR, FKM
- PN to 800 bar

zfc 05
Catalogue 4100-9
Catalogue 4131-1

EO-3

- With visual assembly status recognition
- For tube and hose applications

Parker O-Lok®

O-Ring Face Seal Fittings (ORFS)

Soft seal fittings provide leak-free connections for high pressure hydraulic systems. Excellent where reliability, versatility and ease of assembly are important factors. For rigid tubing and hoses.

Material: steel and stainless steel, brass on request.
Sizes: tube o.d. 6 to 50 mm (1/4" to 2").
Port threads: BSPP, metric ISO 6149 and DIN 3852, UNF, NPTF.
Nominal pressure PN: up to 630 bar.
Standards: ISO 8434-3, SAE J1453.

zfc 08
Catalogue 4100-9

Triple-Lok® Fittings

37° Flare Fittings

Triple-Lok® fittings are rated up to 500 bar nominal pressure with 4x design factor. Standards: ISO 8434-2, SAE J514. The robust adjustable port connections eliminates potential assembly errors. All fittings are with Cr(VI)-free surface and achieve a corrosion resistance of 120 hours to first white rust, exceeding industry standards. Triple-Lok fittings offer the broadest range of sizes and configurations of any fitting.

zfc 07
Catalogue 4100-9

Parflange® F37

For high pressure tube flange connections without welding.

Pneumatic Fittings

LF 3000 Push-In Fittings

Complete Range for Pneumatic Applications

Compact design
-20 °C - +80 °C at 20 bar
Hoses from 3 - 14 mm. Thread: metric BSPP, BSPT, NPT

zfc 09
Catalogue 0524

LF 3800/3900 Push-In Fittings

New 316L Stainless Steel Push-In Fittings for the Toughest Applications

Extremely resistant to chemical and mechanical influences
-20 °C to 120 °C at 30 bar
Wide range of products: 19 special shapes from nominal 4 mm to 12 mm, M5 BSPP and BSPT threads to ½ “
Fittings for permanent use in the food sector
(FKM seals FDA and 1935/2004/CE compliant)
Hygienic design

Prestomatic 2

Connector for Air Brakes

Reusable push-in fittings for air brake hoses made of polyamide.

Material: brass.
Size range: tube outer diameter from 6 to 16 mm
Threads: from M10x1.0 to M22x1.5, NPT, BSPT.
Working pressure: up to 25 bar.
Working temperature: -40 °C to +100 °C.

zfc 10
CD3530-2

Metrulok

Medium pressure brass tube fittings

Metrulok is a one-piece ready to use bite type fitting for use with either copper or plastic tubing. The cutting ring is held within the nut. Metrulok fittings are reusable.

Material: brass.
Size range: tube outer diameter from 4 to 22 mm
Threads: NPT, R and G 1/16” to 3/4”, metric M5 to M22.
Working pressure: copper tubing up to 180 bar, plastic tubing up to 39 bar. (depending on tube specification)
Working temperature: -60 °C to +190 °C.

zfc 11
Catalogue 0093

LF3400 Fittings and Cartridges

The design and technical specifications of the cartridges meet the standards required for a wide range of applications and environments: low and high temperature, mechanical resistance to aggressive media, paints, etc.
Tube diameter: 6 mm and 8 mm
Working temperature: -40 °C to +100 °C
Vacuum: 755 mm Hg (99% vacuum)

Quick Couplings

Low Pressure – Pneumatic Applications

Push-to-connect quick couplings meeting the requirements of the "European profile", ISO 6150-B or ISO 6150-C. Also available with improved flow characteristics, which allows their use with any type of pneumatic equipments. The range is completed with safety versions conforming to ISO 4414 standard, which is designed to prevent hose whip.

Material: brass, steel or polyamide.
Sizes: from 1/4" to 1/2"; DN 7,2 mm up to 10 mm.
Threads: BSPP, BSPT, hose barb and Parker Push-Lok.
Flow rates: up to 4160 l/min.
Rated pressure: up to 35 bar.

zfc 12
Catalogue CAT/3800-PNEU/UK

High Pressure

Quick couplings combining the advantages of high pressure capability with well proven designs: flush-faced poppet for reduced spillage, threaded types to connect under pressure, ball locking mechanism for ease and rapidity of use. Most of the series are interchangeable with similar designs.

Materials: steel and stainless steel.
Sizes: 1/4" and 3/8".
Threads: BSPP, NPTF, NPSF, UNF.
Rated pressure: up to 1500 bar.

zfc 13
Catalogue CAT/3800-HYD/UK

Medium Pressure – Industrial Hydraulic and Chemical

For each application, we have a solution: general purpose 60 series meeting ISO 7241-1-B standard, FEM series according to ISO 16028, with flat-faced poppet to protect work place and environment, FS series in stainless steel for use with corrosive fluids or ST series without valving for high flow and low pressure drop.

Materials: brass, steel and stainless steel.
Sizes: from 1/8" to 2 1/2".
Threads: BSPP, BSPT, NPT(F), NPSF, UN(F).
Rated pressure: up to 460 bar.

zfc 14
Catalogue CAT/3800-HYD/UK

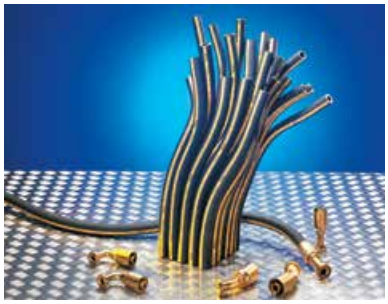
Where corrosion resistance is vital stainless steel is the perfect solution

Parker offers a complete range of 1 or 2 piece hose fittings for low, medium and high pressure hydraulic hoses - everything from one source and approved by well known international classification bodies.

Thanks to their resistance to corrosion and acids, all components in superior quality stainless steel grade 1.457 are suitable for tough environments.

Rubber Hoses

Multispiral *No-Skive* Hoses



Developments in the hydraulic market call for ever higher working pressures and flow volumes. Multispiral hoses therefore play an increasingly important role in machine design.

With its No-Skive technology, Parker is a global market leader, and meets these challenges by developing a comprehensive range of No-Skive multispiral hoses and fittings up to 42.0 MPa working pressure. In addition to excellent high-pressure performance, the following features are central:

- The No-Skive design means that no removal of the outer cover is required before crimping
- Specially designed sleeves and optimised compression forces guarantee a total grip system between the fitting and the hose
- The fittings are made of high quality, high tensile steel in the Parker monobloc nipple design, eliminating potential leakage risks

Low volumetric expansion at maximum pressure

- Wide-ranging media resistance
- The range of hoses is also available with a highly abrasion resistant TC or ST outer cover for a guaranteed long service life, for example the 372TC, a 3 wire braid compact hose with 4SP working pressures or the 372RH with a fire retardant outer layer. The 371LT is available for low temperature applications. This 3 wire braid compact hose is also designed for 4SP working pressures.

All multispiral hoses are also available with nitrile inner tubes, suitable for mineral oils and biodegradable oils.

Working pressures up to 445 bar.
Temperature range: -40 °C to +121 °C.
Dimensions: sizes -6 to -32.

zfc 15
Catalogue 4400

ParLock Multispiral Hose and Fittings - the High Performance Skive System

Some customers or applications require the use of multispiral hoses with internal/external skive type fittings. Parker offers ParLock hoses and fittings in order to meet the market demand. The Parlock system includes: A full range of ISO 3862-1 skive/interlock multispiral hoses (4SP to R15). This combination of hoses and fittings exceeds ISO and EN standards. Hoses and fittings from a single source – your guarantee of full compatibility. Field-tested, with proven reliability for:

– High flex-impulse applications
– High vibration applications

Construction: synthetic rubber tube and cover, 4-6 high tensile steel wire spirals.
Dimensions: sizes -6 to -32.
Working pressure: up to 44.5 MPa.
Temperature range: -40 °C to +100 °C.
Specifications: ISO 3862 EN 856 4SP/4SH / R12 / R13 / R15.

zfc 18
Catalogue 4400

Compact Spiral™

Unprecedented 35.0 and 42.0 MPa hose performance in a compact design.

Comapct Spiral hose delivers substantial performance and value for systems with high-pressure and high-impulse applications. These include large mobile equipment (off-highway, construction, forestry and mining), oil and gas applications and injection moulding equipment.

- **1/2 the bend radius of SAE 100R13/SAE 100R15**
- **1/3 less effort to bend**
- **Nearly 30 % smaller O. D.**
- **Tested to 2,000,000 cycles**
- **High abrasion resistance**
- **Constant pressure**
- **Simplified fitting selection with 77 series in Interlock No-Skive design**
- **25 % less hose weight**

Rubber Hoses

Parkrimp *Elite* Compact *No-Skive* Hoses

This advanced range of medium pressure hoses includes:

- **Elite compact hoses that exceed all EN requirements.**
- **No-Skive hoses meeting these standards: EN 853, SAE 100 R1AT, SAE 100 R2AT and SAE100 R16**

Parker's Elite compact hoses are a good choice whenever a small bending radius is required with high working pressures and outstanding media compatibility. The proven functionality of the Elite Compact hoses and compatible Parker 46 series fittings provides increased safety and reliability. The Elite product line includes one and two wire braided rubber hoses that meet or even exceed the requirements of the EN857 standard. Series 46 compact hoses and fittings are compatible with the Parkrimp family of crimpers, consisting of the KarryKrimp 1 or 2 and the Parkrimp 2, to create a complete system solution comprising No-Skive hose, No-Skive fittings and crimping tools with a worldwide warranty and guaranteed availability.

Construction: Abrasion and ozone resistant cover made of synthetic rubber, one or two braids of high tensile steel wire reinforcement and a nitrile (NBR) inner tube.
Dimensions: sizes -4 to -20.
Working pressure: up to 42.5 MPa.
Temperature range: -50 °C to +100 °C.

zfc 16
Catalogue 4400

SAE 100R5 Air Brakes/Cooling Systems and 2TE Hydraulic Hoses

These hoses are the ideal solution for air brake systems, diesel engine cooling systems and air conditioning units. Parker has a special range of fittings for these hose types (series 26), which is designed as a No-Skive system. Some of these hose types have a fire-resistant construction. The hose construction varies according to the working pressure, and consists of several braids of textile or steel wire, with synthetic rubber for inner and outer layers.

Working pressures up to 207 bar.
Temperature range: -50 °C to +150 °C.
Dimensions: sizes -4 to -32.

zfc 17
Catalogue 4400

Parkrimp Compact *No-Skive* Twin Hoses

This compact twin hose made of vulcanized rubber combines a highly abrasion resistant outer cover with extreme flexibility at a constant working pressure of 210 bar. These hoses are particularly suitable for extremely small bending radii, for example in forklifts, cranes or lifts.

Working pressures: up to 210 bar.
Temperature range: -40 °C to +80 °C.
Dimensions: sizes 4 to 10.
Low pressure push-to-fit hose system

zfc 20
Catalogue 4400

Rubber Hoses

Push-Lok Low Pressure the self-grip hose system

With its Push-Lok system, Parker is the leading supplier the self-grip system for low pressure applications. Push-Lok hoses and fittings are approved worldwide and are available with a variety of connectors (DIN, BSP, SAE, JIC and ORFS) made of brass, steel and stainless steel. The Push-Lok system consists of nine hose types for a wide range of possible uses. Many years of system development created three hose concepts:

- 6 rubber hoses
- 2 thermoplastic hoses
- 1 hybrid hose

The hoses are available in 8 colours, allowing the different fluids to be identified. Some features of the Push-Lok system:

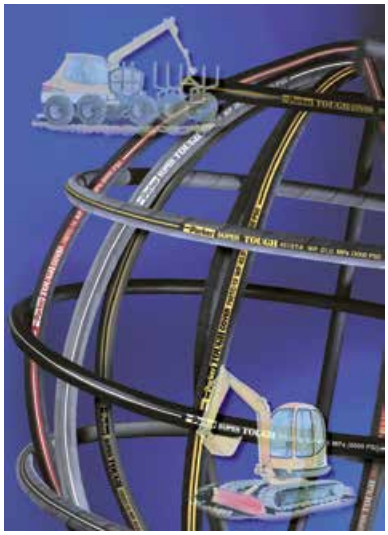
- Easy assembly without tools and clamps
- Low installation costs
- High reliability - safety factor 4
- Variety of hose types
- 8 different colours
- One fitting series for all hose types

These high quality hoses are the result of our customer-oriented development activities.

Working pressures up to 24 bar.
Temperature range: -40 °C to +150 °C.
Sizes -4 to -16.

zfc 16
Catalogue 4460

Parkrimp Compact *No-Skive* 'Tough Cover' and 'Super Tough' Cover Hoses



In applications where even higher abrasion resistance than the Parker Compact hoses already offer is required, the TC (Tough Cover) and the ST (Super Tough cover) hoses offer extreme abrasion resistance for extreme applications. Specifying a Parker hose with ST cover offers an abrasion resistance level 450 times greater than that of a standard rubber cover according to ISO 6945 metal to hose abrasion test results. The same test results prove Parker's TC cover to be 80 times more abrasion resistant than the standard rubber cover. These ultra high abrasion resistant hoses give increased service life, lower maintenance costs and can eliminate the need for costly hose protectors such as guards or sleeves. As with all Parker hoses the cover does not need to be removed before assembling the Parkrimp fittings.

Working pressure: up to 400 bar.
Temperature range: -40 °C to +100 °C.
Dimensions: size -4 to -16.

zfc 19, zfc 26
Catalogue 4400-UK

Industrial Hoses

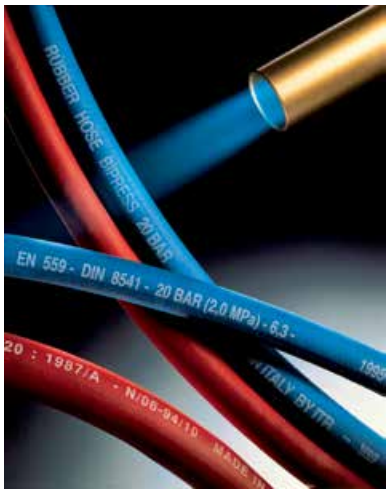
Hot Water and Steam Hoses

Hot water and steam hoses are manufactured with special rubber compounds formulated to resist the effect of steam ageing. Parker's steam hoses fulfil the latest international standards. Special textile and steel reinforcement provide high safety margins with high pressures and temperatures. The cover is resistant to abrasion, ageing and heat.

Size range: I.D.: from 7 to 120 mm.
Working pressure: 0.3 MPa to 1.8 MPa.

zfc 21
Catalogue 4401-UK

Gas Hoses



Largely used in domestic and industrial appliances or for transport of LPG, domestic, welding and non-combustible gases. Welding applications can be hazardous and safety is most important. Gas and welding hoses are manufactured according to the latest European standard EN ISO 3821. Where necessary Parker's gas hoses have been approved by qualified Organisations (such as IMQ, DVGW, ... etc.).

Size range: I.D.: from 4 to 51 mm.
Working pressure: 1.0 MPa to 2.5 MPa.

zfc 22
Catalogue 4401-UK

Acid and Chemical Hose

Hoses according to EN12115 standard, suitable for suction and delivery of a wide range of very highly aggressive chemicals such as most industrial acids, alkalis, oils, fuels and solvents. It can also be used as a flexible connections in paint plants. Suitable for suction and delivery of all foodstuff containing also animal or vegetable fats and oils, according to national and international norms. (refer to the Chemical Resistant Chart to determine compatibility with specific chemicals. For severe or special applications please ask our Technical Assistance).

Size range I.D.: from 19 to 100 mm
Working Pressure: 1.2 MPa to 1.6 MPa.

Industrial Hoses

Oil and Fuel Hoses

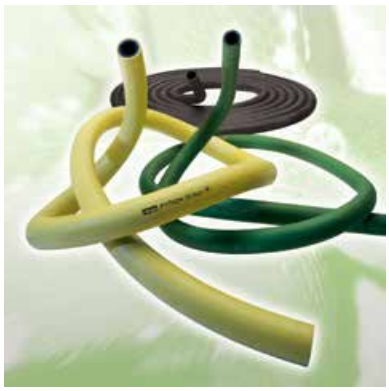
Hoses designed for suction and delivery of petroleum products, fuels and mineral oil, for hydraulic systems, loading and discharge of tankers and petrol pumps. Parker's oil and fuel hoses have a tube resistant to petroleum based fluids. To withstand suction some types of these hoses have a strong textile reinforcement and an embedded steel wire helix. The cover is made of an oil and weather-resistant rubber compound, to provide a good resistance to severe industrial use. Also available CERVINO hose for outdoor low temperature applications (-40 °C)

Parker's oil and fuel hoses fulfil the latest international standards (such as EN 1360, SAE J 30 R7, EN ISO 7840 A1, EN 12115, etc) and, where necessary, they have been approved by Bureau Veritas, RINA, Lloyd´s register, etc.

Size range: I.D.: from 5 to 150 mm.
Working pressure: 0.4 MPa to 2.0 MPa.

zfc 23
Catalogue 4401-UK

Multipurpose Hoses



Parker also manufactures a wide range of multipurpose hose for different applications, particularly versatile. For example PYTHON (for hot water, light chemicals) and OILPRESS (high quality hose, flame retardant) give the end users maximum quality assurance and control resulting in the Parker guarantee of product excellence.

Size range: I.D.: from 6 to 100 mm.
Working pressure: 1.0 MPa to 10.0 MPa.

zfc 24
Catalogue 4401-UK

PVC-PU Hoses

Parker can offer a wide range of PVC-PU hoses covering different applications: suction, water, agricultural spray, oil and fuel, foodstuff and cable protection. PU hoses have a high ageing and abrasion resistance, high flexibility and good stress resistance performance.

zfc 25
Catalogue 4401-UK

Tubes and Hoses

A Full Range of Tubes and Hoses for Various Applications

- Hoses made of nylon, polyurethane, polyethylene, and fluoropolymer
- Spirals, multitubes, weld spatter resistant, anti-static, twin tubes, PVC hoses with textile layer or with self fixing
- Packaging: Tubepack or roll
- Available in metric or inches
- Wide range of products in standard length, length markings

Motors - Fixed Displacement

Gear

PGM 500, 600

- Superior performance
- High efficiency
- Low noise operation at high operating pressures
- International mounts and connections
- Integrated valve capabilities
- Common inlet multiple pump configurations

zp 44

Frame size PGM 511	0060	0080	0100	0110	0140	0160	0190	0230	0270	0310	0330	
Displacement (cm^3/rev)	6	8	10	11	14	16	19	23	27	31	33	
Max cont pressure (bar)	250	250	250	250	250	250	250	225	190	165	155	
Max operating speed (rpm)	3500	3500	3500	3500	3500	3500	3250	2750	2350	2100	2000	
Input power (kW)	4.5	6.0	7.5	8.3	10.5	12.0	14.3	14.7	14.9	16.7	17.3	
Weight (kg)	3.40	3.47	3.55	3.57	3.71	3.79	3.91	4.06	4.21	4.37	4.45	

Frame size PGM 620	0160	0190	0210	0230	0260	0290	0330	0360	0410	0440	0460	0500	0520
Displacement (cm^3/rev)	16.0	19.0	21.0	23.0	26.0	29.0	33.0	36.0	41.0	44.0	46.0	50.0	52.0
Max cont pressure (bar)	275	275	275	275	275	275	275	250	220	210	210	210	210
Max operating speed [rpm]	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3000	3000
Weight (kg)	12.0	12.1	12.1	12.2	12.3	12.6	12.7	12.8	13.0	13.1	13.2	13.3	13.4

Frame size PGM 640	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800	
Displacement (cm^3/rev)	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	
Max cont pressure (bar)	310	310	310	310	310	310	290	265	245	225	210	
Max operating speed [rpm	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	
Weight (kg)	21.0	21.0	22.0	22.0	23.0	23.0	24.0	24.0	25.0	25.0	25.0	

Motors - Fixed Displacement

Vane

DENISON®

Single

- High volumetric efficiency
- High starting torque efficiency
- Low torque ripple at low speed
- Interchangeable rotating groups
- Reversible rotation
- Wide speed range

zvp 01

Frame size M3B	009	012	018	027	036
Displacement (cm^3/rev)	9.2	12.3	18.5	27.8	37.1
Max cont pressure (bar)	175	210	210	210	210
Max operating speed[1] (rpm)	3000	3000	3000	3000	3000
Output torque[2] (Nm)	4.3	5.8	10.0	16.3	21.1
Output power[2] (kW)	19.7	26.7	46.6	77.4	102.0
Weight (kg)	8.0	8.0	8.0	8.0	8.0

Frame size M4C	024	027	031	043	055	067	075
Displacement (cm^3/rev)	24.4	28.2	34.5	46.5	58.8	71.1	80.1
Max cont pressure (bar)	230	230	230	230	210	210	175
Max operating speed[1] (rpm)	2500	2500	2500	2500	2500	2500	2500
Output torque[2] (Nm)	60.5	70.0	86.8	120.0	149.0	170.0	198.0
Output power[2] (kW)	12.7	14.7	18.0	25.1	31.2	35.6	41.5
Weight (kg)	15.4	15.4	15.4	15.4	15.4	15.4	15.4

Frame size M4D	062	074	088	102	113	128	138
Displacement (cm^3/rev)	65.1	76.8	91.1	105.5	116.7	132.4	144.4
Max cont pressure (bar)	230	230	230	210	210	190	175
Max operating speed[1] (rpm)	2500	2500	2500	2500	2500	2500	2500
Output torque[2] Nm)	165.0	200.0	236.0	264.0	300.0	340.0	372.0
Output power[2] (kW)	34.6	41.9	49.4	55.3	62.8	71.2	77.9
Weight (kg)	27.0	27.0	27.0	27.0	27.0	27.0	27.0

Frame size M4E	153	185	214
Displacement (cm^3/rev)	158.5	191.6	222.0
Max cont pressure (bar)	190	180	175
Max operating speed[1] (rpm)	2500	2500	2500
Output torque[2] (Nm)	398	484	567
Output power[2] (kW)	83.4	101.4	118.8
Weight (kg)	45.0	45.0	45.0

Frame size M5A	006	010	012	016	018	023	025
Displacement (cm^3/rev)	6.3	10.0	12.5	16.0	18.0	23.0	25.0
Max cont pressure (bar)	280	280	280	280	280	280	280
Max operating speed[1] (rpm)	5000	5000	3800	3800	3300	3000	3000
Output torque[2] (Nm)	26.1	43.7	55.7	72.4	81.2	98.4	107.4
Output power[2] (kW)	5.5	9.2	11.7	15.2	17.0	20.4	22.5
Weight (kg)	12.2	12.2	12.2	12.2	12.2	12.2	12.2

Frame size M5B*	012	018	023	028	036	045
Displacement (cm^3/rev)	12.0	18.0	23.0	28.0	36.0	45.0
Max cont pressure (bar)	290	290	290	290	290	260
Max operating speed[1] (rpm)	4000	4000	3000	2500	2500	2500
Output torque[2] (Nm)	50.6	81.2	117.1	132.1	172.8	190.0
Output power[2] (kW)	10.6	17.0	24.5	27.7	36.2	39.8
Weight (kg)	18.5	18.5	18.5	18.5	18.5	18.5

1) Max. shaft speed at max. pressure, continuous
2) Output at 2000 rpm, 24 cSt & M5B* at 320 bar, 045 at 280 bar, M3B & M4* at 175 bar, M5A at 300 bar, 023 & 025 at 280 bar

Double

- 49 possible displacement combinations (see above M4C & M4D data)
- Three different possible speeds for each combination
- Three different possible torques for each combination
- Bi-rotational technology
- Low noise
- Low ripple torque

Parker

Motors - Fixed Displacement

Gerotor

- High volumetric efficiency
- Full flow spline cooling
- High pressure shaft seal / no drainline
- High flow shaft seal cooling
- High starting torque
- High side load capacity
- Long life
- Balanced performance in both directions of rotation (TE)
- Very compact design (TL)

TE

zm 03

TF

zm 05

TG

zm 06

TH

zm 07

TL

Frame size TE	0036	0045	0050	0065	0080	0100	0130	0165	0195
Displacement (cm^3/rev)	36	41	49	65	82	98	130	163	195
Max cont pressure (bar))	140	140	140	140	140	140	140	140	140
Max operating speed (rpm)	1141	1024	1020	877	695	582	438	348	292
Max cont output torque (Nm)	55	71	90	125	160	190	255	310	390
Weight (kg)	6.7	6.8	6.9	7.0	7.1	7.2	7.6	7.8	8.1

Frame size TE	0230	0260	0295	0330	0365	0390
Displacement (cm^3/rev)	228	260	293	328	370	392
Max cont pressure (bar)	120	110	100	100	95	85
Max operating speed (rpm)	328	287	256	228	203	191
Max cont output torque (Nm)	380	400	428	443	467	445
Weight (kg)	8.3	8.6	8.8	9.1	9.4	9.6

Frame size TF	0080	0100	0130	0140	0170	0195	0240	0280	0360	0405	0475
Displacement (cm^3/rev)	81	100	128	141	169	197	238	280	364	405	477
Max cont pressure (bar)	207	155	138	138	138	138	138	138	130	128	113
Max operating speed (rpm)	693	749	583	530	444	381	394	334	258	231	195
Max cont output torque (Nm)	220	195	230	255	315	365	425	510	595	655	680
Weight (kg)	14.0	14.0	14.2	14.3	14.6	14.9	15.3	15.6	16.3	17.0	17.5

Frame size TL	0140	0170	0195	0240	0280	0310	0360
Displacement (cm^3/rev)	140	169	195	238	280	310	364
Max cont pressure (bar)	190	190	190	190	190	190	172
Max operating speed (rpm)	613	512	484	399	335	310	255
Max cont output torque (Nm)	364	449	511	620	730	847	890
Weight (kg)	10.9	11.1	11.4	11.8	12.2	12.4	12.9

Frame size TG	0140	0170	0195	0240	0280	0310	0335	0405	0475	0530	0625	0785	0960
Displacement (cm^3/rev)	141	169	195	238	280	310	337	405	477	528	623	786	959
Max cont pressure (bar)	207	207	207	207	207	207	207	172	138	138	121	103	69
Max operating speed (rpm)	660	554	477	393	334	303	277	232	237	213	182	143	118
Max cont output torque (Nm)	390	475	555	675	795	924	965	940	885	980	985	1045	775
Weight (kg)	14.6	14.8	15.1	15.5	15.9	16.1	16.3	16.9	17.5	18.3	19.0	20.5	22.2

Frame size TH	0140	0170	0195	0240	0280	0310	0335	0405	0475	0530	0625	0785	0960
Displacement (cm^3/rev)	141	169	195	238	280	310	337	405	477	528	623	786	959
Max cont pressure (bar)	207	207	207	207	207	207	207	172	138	138	121	103	69
Max operating speed (rpm)	660	554	477	393	334	303	277	232	237	213	182	143	118
Max cont output torque (Nm)	390	475	555	675	795	924	965	940	885	980	985	1045	775
Weight (kg)	16.9	17.2	17.4	17.8	18.2	18.4	18.6	19.2	19.8	20.6	21.3	22.9	24.5

Motors - Fixed Displacement

Gerotor

TK

- High volumetric efficiency
- Flow through internal spline and shaft seal cooling
- High pressure shaft seal / no drainline
- High starting torque
- High side load capacity
- Long life

zm 08

Frame size TK	0250	0315	0400	0500	0630	0800	1000
Displacement (cm^3/rev)	250	315	400	500	630	800	1000
Max cont pressure (bar)	241	241	207	207	207	190	172
Max operating speed (rpm)	523	413	373	298	237	276	218
Max cont output torque (Nm)	814	1029	1153	1439	1617	1916	2413
Weight (kg)	30.8	31.4	32.3	33.2	34.5	36.0	37.9

Axial Piston

F11

- Very high operating speeds and fast accelerations
- Anti cavitation valve available
- Pressures up to 420 bar
- High Overall Efficiency (low losses)
- Accept high external shaft loads
- Good resistance to vibrations and temperature shocks
- Proven reliability
- Easy to service
- CETOP, ISO and SAE versions available

zp 21

Frame size F11	05	06	10	12	14	19
Displacement (cm^3/rev)	4.9	6.0	9.8	12.5	14.3	19.0
Max cont pressure (bar)	350	350	350	350	350	350
Max operating speed (rpm)	12800	10200	10200	9400	9000	8100
Output torque at 100 bar (Nm)	7.8	9.5	15.6	19.8	22.7	30.2
Weight (kg)	5	7.5	7.5	8.2	8.3	11

F12

- Very high operating speeds and fast accelerations
- Pressures up to 480 bar
- High starting torque
- Very high power capability
- High overall efficiency
- Small envelope size
- Accessory valves available
- ISO, SAE and cartridge versions available
- Proven reliability
- Easy to service

zp 21

Frame size F12	30	40	60	80	90	110	125	150	250
Displacement (cm^3/rev)	30.0	40.0	59.8	80.4	93.0	110.1	125	150.0	242.0
Max cont pressure (bar)	420	420	420	420	350	420	420	350	350
Max operating speed (rpm)	6700	6100	5300	4800	4600	4400	4200	3200	2700
Output torque at 100 bar (Nm)	47.6	63.5	94.9	128	148	175	198	238	384
Weight (kg)	12	16,5	21	26	26	36	36	70	77

Motors - Fixed Displacement

Radial Piston

CALZONI®

MR/MRE

MRT/MRTE/MRTF/MRTA

- High starting torque: from 90 % to 95 % of theoretical
- High control at very low speed
- High volumetric efficiency: up to 98 %
- Low noise
- Resistance to thermal shocks
- Reversibility
- Long bearing life
- Speed accessories, brakes....

zm 30

Frame size MR/E*	33	57	73	93	110	125	160	190	200	250	300
Displacement (cm^3/rev)	32.1	56.4	72.6	92.6	109.0	124.7	159.7	191.6	199.2	250.9	304.4
(in^3/rev)	2.0	3.4	4.4	5.7	6.7	7.6	9.8	11.7	12.2	15.3	18.6
Max pressure (bar)	300	300	300	300	300	300	300	300	300	300	300
(psi)	4350	4350	4350	4350	4350		4350	4350	4350	4350	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)	332.4	349.5	451.6	497.9	607.9	706.9	804.2	1125.8	1369.5	1598.4	1809.6
(in^3/rev)	20.1	21.3	27.6	30.4	37.1	43.1	49.1	68.7	83.6	97.5	110.4
Max pressure (bar)	250	300	300	250	300	300	250	300	250	300	300
(psi)	3626	4350	4350	3626	4350	4350	3626	4350	3626	4350	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)	2091.2	2393.1	2792.0	3103.7	3636.8	4502.7	5401.2	6460.5	6967.2	8226.4
(in^3/rev)	127.6	139.9	170.4	189.4	221.9	274.8	329.6	394.2	408.7	502
Max pressure (bar)	250	300	300	250	300	300	250	300	300	250
(psi)	3626	4350	4350	3626	4350	4350	3626	4350	4350	3626
Max speed (RPM)	250	220	215	215	180	170	160	130	130	120

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

Frame size MRT/F*/E**/A***	14000	15200*	16400**	17000	17500***	18000*	19500	20000**
Displacement (cm^3/rev)	13935	15194	16453	16759	17488	18025	19508	19788
Max cont pressure (bar)	250	250	250	250	230	210	250	210
Max speed (RPM)	105	95	85	70	70	65	60	60

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

Parker

Motors - Variable Displacement

Axial Piston

V12

- Very high operating speeds
- Displacement ratio 5:1
- Pressures up to 480 bar
- Very high power capability
- High starting torque
- Low weight
- High overall efficiency
- Axial or side ports
- Controls available for most needs
- ISO, SAE and cartridge versions

zm 21

Frame size V12	60	80
Displacement max at 35° (cm³/rev)	60	80
Displacement min at 6.5° (cm³/rev)	12	16
Max cont pressure (bar)	420	420
Max operating speed (rpm)	7000	6250
Corner power cont (kW)	235	280
Weight (kg)	28	33

V14

- Very high operating speeds
- Displacement ratio 5:1
- Pressures up to 480 bar
- Very high power capability
- Good control caracteristics
- Smooth operation also at creep speed
- High overall and starting torque efficiency
- Compact design
- Low noise level
- ISO, SAE and cartridge versions

zm 20

Frame size V14	110	160
Displacement max at 35° (cm³/rev)	110	160
Displacement min at 6.5° (cm³/rev)	22	32
Max cont pressure (bar)	420	420
Max operating speed (rpm)	5700	5000
Corner power cont (kW)	440	560
Weight (kg)	54	68

Radial Piston

CALZONI®

MRV/MRVE

MRD/MRDE

- Variable displacement motor
- Customizable displacements
- High starting torque: from 90 % to 95 % of theoretical
- High control at very low speed
- High volumetric efficiency: up to 98 %
- Low noise
- Resistance to thermal shocks
- Reversibility
- Long bearing life
- Speed accessories, brakes….

zm 30

Frame size MRV/E* MRD/E*	300	330*	450 450	500*	700 700	800* 800*	1100 1100	1400* 1400*
Min Displacement (cm³/rev)	152.1	166.2	225.8	248.9	237.6	270.2	381.3	463.9
Max Displacement (cm³/rev	304.1	332.4	451.6	497.9	706.9	804.2	1125.8	1369.5
Max cont pressure (bar)	250	210	250	210	250	210	250	210
Speed range with flushing (giri/min)	1-1000	1-1000	1-850	1-800	1-750	1-750	0.5-600	0.5-550

Frame size MRV/E* MRD/E*	1800 1800	2100* 2100*	2800 2800	3100* 3100*	4500 4500	5400* 5400*	7000 7000	8200 8200
Min Displacement (cm³/rev)	603.2	697.0	930.7	1034.6	1497.8	1800.4	2322.4	2742.1
Max Displacement (cm³/rev	1809.6	2091.2	2792.0	3103.7	4502.7	5401.2	6967.2	8226.4
Max cont pressure (bar)	250	210	250	210	250	210	250	210
Speed range with flushing (giri/min)	0.5-450	0.5-420	0.5-320	0.5-300	0.5-280	0.5-250	.05-210	.05-200

Power Units

Power Units

M-Pak, Low Noise L-Pak

- Ideal for stationary complex hydraulic control systems: machine tools, assembly stations, handling systems, small presses, etc
- New low-noise series L-Pak
- 1 pump, high volume flows: series M-Pak max. 138 l/min, 300 bar, series L-Pak max. 270 l/min, 350 bar
- Standard scope of delivery: Tank, e-motor, pump, bell housing, return filter, contamination gauge, level switch, valve stack, accumulator
- Stackable blocks, easy to extend with additional control elements for specific use
- Standard and tailorised models, plug-and-play, ready for use
- Compatible BUS connections of series L-Pak
- Prefabricated components: fast delivery, low price

zu 01, zu 02

Series	Design	Pressure (bar)	Pump	Max Flow (l/min)	Tank (l)	Motor (kW)
M-Pak	Vertical	210	(gear pump)	12	30 - 70	0.25 - 7.5
M-Pak	Vertical	315	(internal gear pump)	11	30 - 250	0.55 - 15
M-Pak	Vertical	210	(gear pump)	40	70 - 250	0.55 - 15
M-Pak	Horizontal	140	(vane pump)	35	100 - 250	0.55 - 15
M-Pak	Horizontal	350	(piston pump)	138	100 - 630	7.5 - 30
Individual	Customized	350		1000	≤10000+H128	≤160

Series	Pressure (bar)	Sound dB(A)	Pump	Max. Flow (l/min)	Tank (l)	Motor (kW)
L-Pak	100 350	65 72	PVplus	16 270	250 1000	max. 55

Fluid Power Systems

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. Units are available in a wide variety of configurations. The reversing option enables you to eliminate external directional control valves.

zo 01, zo 02

Series	Operating (bar)	Max Flow (l/min)	Tank (l)	Motor (kW)	
108	241	3	0.5–5.7	0.25	
165	241	5.4	0.4-5.6	0.75	
550	207	11	1.9–19	0.37–1.5	

Pumps - Fixed Displacement

Gear

PGP 500, 600

- Superior performance
- High efficiency
- Low noise operation at high operating pressures
- International mounts and connections
- Integrated valve capabilities
- Common inlet multiple pump configurations

zp 44

Frame size PGP 502	0008	0012	0016	0021	0025	0033	0036	0043	0048	0058	0062	0079
Displacement (cm^3/rev)	0.8	1.2	1.6	2.1	2.5	3.3	3.6	4.3	4.8	5.8	6.2	7.9
Max cont pressure (bar)	275	275	275	275	275	275	250	210	160	160	150	120
Max operating speed (rpm)	4000	4000	4000	4000	4000	4000	4000	3500	3000	3000	3000	2500
Weight (kg)	1.1	1.1	1.1	1.1	1.2	1.2	1.2	1.3	1.4	1.4	1.5	1.6

Frame size PGP 505	0030	0040	0060	0080	0100	0120
Displacement (cm^3/rev)	3	4	6	8	10	12
Max cont pressure (bar)	275	275	275	275	250	220
Max operating speed (rpm)	4000	4000	3600	3000	2800	2400
Input power (kW)	2.3	3.0	4.5	6.0	6.9	7.5
Weight (kg)	2.22	2.27	2.38	2.48	2.58	2.68

Frame size PGP 511	0060	0080	0100	0110	0140	0160	0190	0230	0270	0310	0330
Displacement (cm^3/rev)	6	8	10	11	14	16	19	23	27	31	33
Max cont pressure (bar)	250	250	250	250	250	250	250	225	190	165	155
Max operating speed (rpm)	3500	3500	3500	3500	3500	3500	3250	2750	2350	2100	2000
Input power (kW)	4.5	6.0	7.5	8.3	10.5	12.0	14.3	14.7	14.9	16.7	17.3
Weight (kg)	3.40	3.47	3.55	3.57	3.71	3.79	3.91	4.06	4.21	4.37	4.45

Frame size PGP 517	0140	0160	0190	0230	0250	0280	0330	0380	0440	0520	0700
Displacement (cm^3/rev)	14	16	19	23	25	28	33	38	44	52	70
Max cont pressure (bar)	250	250	250	250	250	250	250	250	220	200	160
Max operating speed (rpm)	3400	3400	3300	3300	3100	3100	3000	3000	2800	2700	2400
Input power (kW)	9.6	11.0	13.1	15.8	17.2	19.3	22.7	26.1	27.0	28.6	31.2
Weight (kg)	7.92	8.00	8.12	8.29	8.37	8.50	8.70	8.91	9.16	9.49	10.24

Frame size PGP 620	0160	0190	0210	0230	0260	0290	0330	0360	0410	0440	0460	0500	0520
Displacement (cm^3/rev)	16.0	19.0	21.0	23.0	26.0	29.0	33.0	36.0	41.0	44.0	46.0	50.0	52.0
Max cont pressure (bar)	275	275	275	275	275	275	275	250	220	210	210	210	210
Max operating speed [rpm]	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3500	3000	3000
Weight (kg)	12.0	12.1	12.1	12.2	12.3	12.6	12.7	12.8	13.0	13.1	13.2	13.3	13.4

Frame size PGP 640	0300	0350	0400	0450	0500	0550	0600	0650	0700	0750	0800
Displacement (cm^3/rev)	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0
Max cont pressure (bar)	310	310	310	310	310	310	290	265	245	225	210
Max operating speed [rpm	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000	3000
Weight (kg)	21.0	21.0	22.0	22.0	23.0	23.0	24.0	24.0	25.0	25.0	25.0

Pumps - Fixed Displacement

Vane - SAE

DENISON®

Single

- 320 bar max pressure for T7B, 300 bar for T7AS* & T7D, 275 bar for T6C & 240 bar for T7E
- Silent technology even under high pressure
- Wide range of displacements
- User friendly = easy conversions & evolutions
- Wide number of shafts available (SAE & ISO)
- Rear drive train options available (SAE A, SAE B or SAE C)

zvp 01

Frame size T7AS*	B06	B10	B11	B13	B17	B20	B22	B25	B26	B28	B30	B32	B34	B36	B40
Displacement (cm^3/rev)	5.8	9.8	11.0	12.8	17.2	19.8	22.5	24.9	26.0	28.0	30.0	31.8	34.0	36.0	40.0
Max cont pressure (bar)	275	275	275	275	275	275	275	240	275	275	275	275	240	240	240
Max int pressure (bar)	300	300	300	300	300	300	300	275	300	300	300	300	280	280	280
Max operating speed[1] (rpm)	3600	3600	3600	3600	3600	3600	3600	3000	3600	3600	3600	3600	3000	3000	3000
Input power[2] (kW)	6.0	9.0	9.9	11.3	14.6	16.5	18.6	20.4	20.6	22.1	23.6	25.0	26.6	28.1	31.1
Weight (kg)	9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5	11.3	11.3	11.3	11.3	11.3	11.3	11.3

Frame size TB	003	004	005	006	008	009	011	012
Displacement (cm^3/rev)	8.8	12.8	16.0	20.7	26.1	31.5	35.6	39.7
Max cont pressure (bar)	175	175	175	175	175	175	175	175
Max int pressure (bar)	175	190	190	190	190	190	190	190
Max operating speed[1] (rpm)	3500	3500	3400	3400	3300	3300	3200	3200
Input power[2] (kW)	3.3	5.8	7.2	9.2	11.5	13.9	15.7	17.5
Weight (kg)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0

Frame size T7B	B02	B03	B04	B05	B06	B07	B08	B09	B10	B11	B12	B14	B15
Displacement (cm^3/rev)	5.8	9.8	12.8	15.9	19.8	22.5	24.9	28.0	21.8	35.0	41.0	45.0	50.0
Max cont pressure (bar)	290	290	290	290	290	290	290	290	290	275	275	275	240
Max int pressure (bar)	320	320	320	320	320	320	320	320	320	300	300	300	280
Max operating speed[1] (rpm)	3600	3600	3600	3600	3600	3600	3600	3600	3600	3000	3000	3000	3000
Input power[2] (kW)	5.4	8.6	11.0	13.5	16.6	18.8	20.7	23.2	26.2	27.0[4]	31.5[4]	34.5[4]	35.7[9]
Weight (kg)	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0	23.0

Frame size T6C	003	005	006	008	010	012	014	017	020	022	025	028	031
Displacement (cm^3/rev)	10.8	17.2	21.3	26.4	34.1	37.1	46.0	58.3	63.8	70.3	79.3	88.8	100.0
Max cont pressure (bar)	240	240	240	240	240	240	240	240	240	240	240	160	160
Max int pressure (bar)	275	275	275	275	275	275	275	275	275	275	275	210	210
Max operating speed[1] (rpm)	2800	2800	2800	2800	2800	2800	2800	2800	2800	2800	2500	2500	2500
Input power[2] (kW)	5.3[4]	12.2	14.7	17.7	22.3	24.1	29.5	36.9	40.2	44.1	49.5	48.5[6]	54.4[6]
Weight (kg)	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7	15.7

Frame size T7D	B14	B17	B20	B22	B24	B28	B31	B35	B38	B42	B45	B50
Displacement (cm^3/rev)	44.0	55.0	66.0	70.3	79.5	89.7	98.3	111.0	120.3	136.0	145.7	158.0
Max cont pressure (bar)	250	250	250	250	250	250	250	250	250	230	210	160
Max int pressure (bar)	300	300	300	300	300	300	300	280	280	260	260	210
Max operating speed[1] (rpm)	3000	3000	3000	3000	3000	3000	3000	2800	2800	2500	2200	2200
Input power[2] (kW)	34.2	42.4	50.7	53.9	62.0	68.7	75.6	80.5[9]	85.6[9]	90.5[8]	89.5[7]	85.0[6]
Weight (kg)	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0	26.0

Frame size T7E	042	045	050	052	054	057	062	066	072	085
Displacement (cm^3/rev)	132.3	142.4	158.5	164.8	171.0	183.3	196.7	213.3	227.1	268.7
Max cont pressure (bar)	210	210	210	210	210	210	210	210	210	75
Max int pressure (bar)	240	240	240	240	240	240	240	240	240	90
Max operating speed[1] (rpm)	2200	2200	2200	2200	2200	2200	2200	2200	2200	2000
Input power[2] (kW)	82.6	88.7	98.3	102.1	105.8	113.2	121.3	131.2	139.5	65.8[10]
Weight (kg)	43.3	43.3	43.3	43.3	43.3	43.3	43.3	43.3	43.3	43.3

1) Shaft speed for petroleum based fluids. For higher speeds, please contact Parker
2) 1500 rpm, TB at 175 bar, T7B at 320 bar, T7AS* & T7D at 300 bar & T6C & T7E at 240 bar
3) 275 bar max 4) 300 bar max 5) 140 bar max 6) 210 bar max 7) 240 bar max 8) 260 bar max 9) 280 bar max 10) 90 bar max

- CE pumps: for variable speed applications = Highly dynamic systems driven by brushless motors
- T7AS and ASW: E06 to E40
- T7B: E03 to E15
- T7D: E14 to E42

Parker

Pumps - Fixed Displacement

Vane – SAE

DENISON®

Double

- Very low noise
- SAE or ISO standards
- One piece shaft (no internal torque limitations)
- Single inlet
- 32 porting orientations available, 16 different double pump frames
- 1443 displacement possibility (from 5.8 to 268.7 cm³/rev) with a max displacement of 537.4 cm³/rev
- Displacement combinations with above T7B – T6C – T7D & T7E
- High power to weight ratio
- Wide range of options available = different shafts, threads, pilots

Triple

- Very low noise
- Single commom inlet
- 128 porting orientations available
- 15260 displacement combinations (from 5.8 to 268.7 cm³/rev) with a max displacement of 638 cm3/rev
- One piece shaft (no internal torque limitation)
- High power to weight ratio
- 15 different triple pump frames available

zvp 01

Axial Piston

F11

- Pressures up to 420 bar
- High overall efficiency (low losses)
- Accept high external shaft loads
- Good resistance to vibrations and temperature shocks
- Proven reliability
- Easy to service
- CETOP, ISO and SAE versions available

zp 21

Frame size F11	05	10	12	14	19
Displacement (cm³/rev)	4.9	9.8	12.5	14.3	19.0
Max cont pressure (bar)	350	350	350	350	350
Max operating speed (rpm)	4600	4200	4000	3900	3500
Weight (kg)	5	7.5	8.2	8.3	11

F12

- Pressures up to 480 bar
- Very high power capability
- High overall efficiency
- Small envelope size
- ISO, SAE and cartridge versions available
- Proven reliability
- Easy to service

zp 21

Frame size F12	30	40	60	80	90	110	125	150	250
Displacement (cm³/rev)	30.0	40.0	59.8	80.4	93.0	110.1	125	150.0	242.0
Max cont pressure (bar)	420	420	420	420	350	420	420	350	350
Max operating speed (rpm)	3150	2870	2500	2300	2300	2200	2100	1700	1500
Weight (kg)	12	16.5	21	26	26	36	36	70	77

Pumps - Variable Displacement

Axial Piston & Fixed Vane Combination

DENISON®

Double & Triple

- Variable piston & vane pump combination
- Wide range of displacements:
- – Variable piston unit of 42 cm³/rev (SAE B) or 62 cm³/rev (SAE C)
  – Vane unit from 6 cm³/rev to 158 cm³/rev
- One inlet, one shaft (no internal torque limitations)
- Pressure controls (standard, ventable & ventable by electronic valve, load sensing)
- Very compact unit
- Splined & keyed shafts available
- 10 frame size available

zvp 01

Axial Piston

PD

- Compact overall package size for easy installation
- wide range of hydromechanic and electronic control solutions
- open loop 100% overcenter available (60cc and above) for pump controled actuation
- Quiet operation (9 piston design, ripple chamber)
- SAE and metric mounting features
- High flexibility by various thru drive options
- Service friendly

zp 04

Frame size PD	018	028	045	060	075	100	140
Displacement (cm³/rev)	18	28	45	60	75	100	140
Max cont pressure (bar)	280	280	280	280	280	280	280
Max operating speed (rpm)	3300	3200	2800	2500	2400	2100	2100
Weight (kg)	14	18	24	30	31	53	67

PV

- High strength cast iron housing
- Modular controls concepts
- Large servo pistons for fast response
- Thru-drive for 100 % nominal torque
- 9 piston design
- Multiple pressure control
- SAE and metric mounting features
- Reduced flow and pressure ripple
- Service-friendly

zp 14

Frame size PV	16	20	23	28	32	40	46	63	80	92	140	180	270	360
Displacement (cm³/rev)	16	20	23	28	32	40	46	63	80	92	140	180	270	360
Max cont pressure (bar)	350	350	350	350	350	350	350	350	350	350	350	350	350	420
Max operating speed (rpm)	3000	3000	3000	3000	2800	2800	2800	2800	2500	2300	2400	2200	1800	1750
Input power (kW)	15.5	19.5	22.5	24.5	31	39	45	61.5	78	89.5	136	175	263	350
Weight (kg)	19	19	19	19	30	30	30	60	60	60	90	90	172	180

Parker

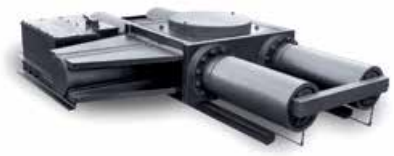
Rotary Actuators

HTR Series

- Rack and pinion rotary actuators for heavy-duty service
- Operating pressures up to 210 bar
- Standard rotations: 90°, 180°, 360°
- Custom rotations up to 5+ revolutions
- Output torque at 210 bar: up to 68,000 Nm
- Rugged cast iron housing with a range of mounting options
- Tapered roller bearings support high external and thrust loads
- Chrome alloy steel gears for strength
- Keyed and splined shaft options
- Optional seals, cushions, stroke adjusters, flow controls and position sensors

zr 01

Custom Engineered Products



Mega-torque units to 7,000,000 Nm
Dimensions: 4.25 x 5.5 x 1.25 m

High durability features provide 99 % reliability in 10 million cycles. Actuators can be custom designed to integrate as part of machine 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 arrangements
- Units with minimal backlash, combined linear and rotational motion functions
- Total system solutions integrate position feedback with control valve packages
- Special materials include titanium, stainless steels and bronzes
- Compliance to customer specs and agency certifications
- Special environments/applications: robotic, submerged, clean room, medical, PC chips

zr 01

Hydraulic Valves

Directional Control Valves

- 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
- 8 Watt for D1 available
- Several solenoid connections available

zv 01

Valve Series	D1	D3	D31	D41	D81	D111
Maximum flow* (l/min)	80	150	150	300	700	2000
Max operating pressure (bar)	350	350	350	350	350	350
Valve size (CETOP)	03	05	05	07	08	10
(NG)	06	10	10	16	25	32

*Depending on spool

Sandwich Valves – Manapak

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

zv 02

Valve Size (CETOP)	03	05	07	08
Check	X	X	X	X
Pilot operated check	X	X	X	X
Flow control	X	X	X	X
Direct op. pressure reducing	X	X		
Pilot op. pressure reducing		X	X	X
Pressure relief	X	X	X	X
Counter balance	X	X		

Hydraulic Valves

Pressure Valves

- Manifold, inline, SAE flange or DIN cartridge
- 350 bar operating pressure
- Functions include relief, pressure reducing and sequence, and unloading

zv 04

Colorflow Valves

- Inline mounted flow, check, needle, gauge isolator and snubber valves
- Flow controls available in pressure compensated models
- Sizes 1/4” to 2”
- Choice of NPTF, SAE, BSPP and ISO 6149 metric ports
- Maximum operating pressures up to 350 bar
- Flows up to 250 l/min
- Steel bodies; some models also available with brass or stainless steel

zv 06

Hydraulic Valves

Proportional Control Valves

- Maximum operating pressures to 350 bar
- On-board and remote electronics available
- Zero lap servo spools offered for closed loop applications
- Explosion proof models available (ATEX CE Ex II 2 G)


zv 10


zv 14


zv 15

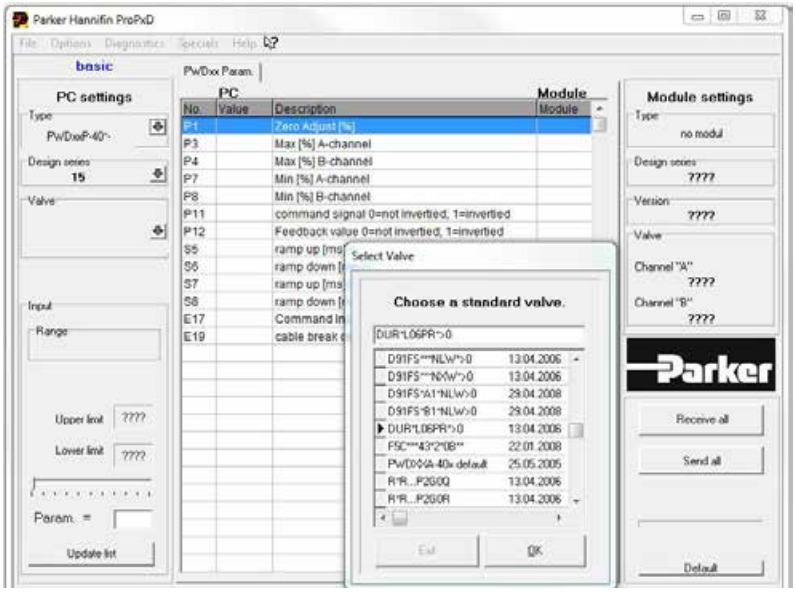
Proportional Directional Control	Series	Direct Operated		Pilot Operated				Spool Feedback	Integrated Electronics
Size: NG		06	10	10	16	25	32		
Size: ISO/CETOP		03	05	05	07	08	10		
Std. performance	D*FB	X	X						optional
	D*FB CANopen	X	X						optional
	D*1FB			X	X	X			optional
	D1FV	X							optional
High reproducibility	D*1FC			X	X	X	X	X	X
VCD performance / Servo performance	D1FP	X						X	X
	D3FP		X					X	X
	D30FP			X				X	X
	D*1FP			X	X	X	X	X	X
	D*1FE			X	X	X	X	X	X

Proportional Directional Control	Series	Direct Operated	Pilot Operated				Integrated Electronics
Size: NG		06	06	10	25	32	
Size: ISO/CETOP		03	03	05	08	10	
Proportional relief	RE06*T	X					X
	RE06*W	X					
	R4V/R6V OBE			X	X	X	X
	R4V/R6V			X	X	X	
	VBY*K		X	X			
Proportional reducing	R4R			X	X	X	X
	R4R P2			X	X	X	
3-Way proportional reducing	VMY		X	X			X

DIN Cartridge Proportional Control	Series	Pilot Operated									Spool Feedback	Integrated Electronics
Size: NG		16	25	32	40	50	63	80	100	125		
Std. performance	TDA	X	X	X	X	X	X	X	X			
Standard performance	TEA			X	X	X	X	X	X			
2-way standard performance	TDW		X	X	X	X	X	X	X	X		
2-way servo performance	TDP		X	X	X	X	X	X	X	X	X	X
2-way servo performance	TEP		X	X	X	X	X	X	X	X	X	X
3-way servo performance	TPQ		X	X	X	X	X	X			X	X

Electronics

Electronics



Full range of digital and analogue drivers and controllers.
Drivers providing ramps, setpoints command signals, deadband compensation and auxiliary functions:

- Up to 4 axis in synchronous operation; encoder or magnetostrictive feedback (NC100)
- Power supplies for a variety of valve applications
- Snap-on electronics
- Software (www.parker.com/euro_hcd)


zv 12


zv 13

DIN Cartridge Valves

DIN Cartridge Valves

- Available in sizes 16 mm, 25 mm, 32 mm, 40 mm, 50 mm, 63 mm, 80 mm, 100 mm
- Nominal flows up to 8,000 l/min (Δp 5 bar)
- Maximum operating pressures up to 350 bar
- Proportional throttle, relief and pressure controls
- Complete selection of pressure controls
- Variety of direct and pilot operated checks

Auxiliary Valves

The pressure reducing valve is of three-way design.

- Compact
- Easy to adjust
- Factory set and sealed

The sequence valve is designed to open or close a hydraulic pilot signal when it reaches a predetermined pressure level.

- Compact
- Several pressure ranges available
- Can be factory set and sealed

The shuttle valve enables two signal flows in a hydraulic system to be directed alternately into a common service line. The flow with the highest pressure takes priority.

- Small dimensions
- Rapid switching
- Negative overlapping
- Reacts on very small flows
- Minimal leakage

Directly controlled pressure-relief valves with anti-cavitation function. The valves have good pressure characteristics together with very short reaction times.

- Compact
- Tight
- Reliable
- Not sensitive to contamination

Valve Type	Max Working Pressure (bar)	Max Setting Pressure (bar)	Flow Capacity (l/min)	
Subplate/relief valves	345	345	57	
Hi-lo unloading valves	379	345	57	
Accumulator bleed-down valves	241	-	Inlet: 75 accum-tank: 226	
Reducing valves	345	345	113	
Sequence valves	345	345	57	
Hose-rupture valves	207	-	249	
Pressure relief valves	500	25-500	0-350	

Threaded Cartridge Valves

Directional Control Valves

zv 40
HY15-3502/USA/EU

Valve Type	Max Working Pressure (bar)	Flow Capacity (l/min)	
Manual valves	241	49	
Manual three-way valves	241	23	
Manual four-way valves	241	8	
Pilot operated valves	241	38	
Solenoid, poppet-type, two-way valves	345	264	
Solenoid, poppet-type, bi-directional valves	345	19	
Solenoid, spool-type, two-way valves	345	75	
Solenoid, spool-type, three-way valves	345	64	
Solenoid, spool-type, four-way valves	345	30	
Double solenoid, spool-type, four-way valves	345	23	

Proportional Control Valves

zv 41

Valve Type	Max Working Pressure (bar)	Flow Capacity (l/min)	
Solenoid operated, two-way NC or NO proportional flow control valves	207	226	
Solenoid operated, two-way NO, proportional pressure control valves	207	151	
Solenoid operated, two-way NC throttle valves	207	19	
Solenoid operated, proportional pressure reducing valves	207	38	
Solenoid operated, three-way, proportional pressure control valves	207	11	

Threaded Cartridge Valves

Load Holding Valves


zv 42

Valve Type	Max Working Pressure (bar)	Flow Capacity (l/min)	
Counterbalance valves	345	0–754	
Check valves	345	0–377	
Soft seat check valves	207	0–57	
Vent-to-open check valves	241	0–226	
Pilot-to-close check valves	241	0–151	
Single pilot operated check valves	207	0–189	
Double pilot operated check valves	207	0–189	
Shuttle valves	241	0–23	

Pressure Control Valves


zv 43

Valve Type	Max Working Pressure (bar)	Max Setting Pressure (bar)	Flow Capacity (l/min)	
Direct acting relief valves	345	345	0–151	
Cross-over relief valves	241	241	0–75	
Dual relief with anti-cavitation checks	345	345	0–60	
Pilot operated relief valves	345	345	0–377	
Pressure sensing valves	345		0–189	
Reducing/relieving valves	345	345	0–151	
Direct acting pressure reducing valves	345	345	0–57	
Pressure reducing valves	345	345	0–57	
Pressure reducing spools	345		0–189	
Sequence valves	345	345	0–151	
Unloading relief valves	241	207	0–6	
Logic elements	248	248	0–189	
Thermal relief	248	248	0–30	

Volume Control Valves


zv 44

Valve Type	Max Working Pressure (bar)	Max Flow Setting (l/min)	Flow Capacity (l/min)	
Needle valves	241		0–189	
Rotary adjust needle valves	241		0–57	
Flow divider/combiner valves	207		0–45	
Pilot control flow control valves	207		0–57	
Flow control valves	241		0–45	
Restrictive-type, pressure compensated valves	241		0–151	
Priority-type, pressure compensated valves	241	0–38	0–57	
Restrictive-type, pressure compensated flow regulator valves	241		0–57	
Priority-type, pressure compensated flow regulator valves	241	0–34	0–57	
Priority-type, pressure compensated flow regulator with relief	241	0–34	0–57	
Velocity fuses	207		0–30	

Safety blocks for presses


zv 45

Size	06	10	16	25	32	63	80	
Flow (l/min)	40	70	230	450	1000	2000	3500	
Working pressure (bar)	350	350	350	350	350	350	350	

Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 00800 27 27 5374

Aerospace

Key Markets

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

Key Products

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

Climate Control

Key Markets

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

Key Products

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

Electromechanical

Key Markets

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

Key Products

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

Filtration

Key Markets

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

Key Products

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

Fluid & Gas Handling

Key Markets

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

Key Products

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

Hydraulics

Key Markets

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

Key Products

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

Pneumatics

Key Markets

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

Key Products

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

Process Control

Key Markets

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

Key Products

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

Sealing & Shielding

Key Markets

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

Key Products

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

ENGINEERING YOUR SUCCESS.

Notes

Notes

Notes

DVD Information

System Requirements

To view the DVD, the following are required:

- Pentium®-class processor
- Win® XP, SP3
- 128 MB of RAM (512 MB recommended)

Acrobat Reader

Catalogue files are viewed using a customized document viewer based on Adobe Acrobat Reader. If you have an earlier version than Acrobat Reader 9.0 installed on your PC, you will be given the option to install Acrobat Reader 9.0 from the DVD.

To View the DVD

The document viewer application will launch, and the opening page will appear on your monitor. If the application does not start when you have inserted the disc, right-click on the DVD icon in the Explorer view and select Explore. Double click on start.bat and the application will launch.

Using the DVD search codes provided in this catalogue will take you directly to the section for that product or to a page to select different languages of that product.

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DVD Catalogue

WARNING — USER RESPONSIBILITY

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

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

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

- To the extent that Parker or its subsidiaries or authorized distributors provide component or system options based upon data or specifications provided by the user, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the components or systems.

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Please contact your Parker representation for a detailed ‘Offer of Sale’.

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