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

Mobile Hydraulics

Innovative Products and System Solutions

ENGINEERING YOUR SUCCESS.

Contents

Introduction

Product Range

Information

xx 00

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

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.

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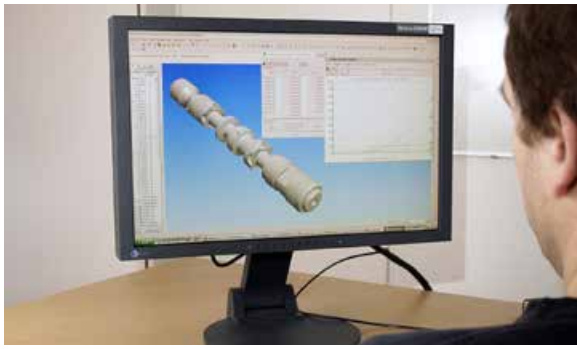
Let Parker become part of your design team. Whether you need to develop new products, redesign existing applications, or design completely new systems, Parker offers unparalleled engineering expertise.

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.



Global Mobile Systems

The Global Mobile Systems – supporting you all the way to success

Naturally, we want to provide you with the best possible value when using Parker components on the machines you build and sell. That's where our **Global Mobile Systems** comes in, to help develop and fine-tune the hydraulic systems for your machines. Our systems engineers have years of experience in advanced system design and will be your partners all the way, suggesting different system solutions until you are satisfied with the performance on your prototype machine.

Cost-reducing Product Improvement

Simply put, you just add a highly qualified Parker systems engineer to your project team, thereby taking advantage of all the knowledge and experience that we have built up during decades of providing total systems solutions to discerning clients world-wide. Our objectives are to help you utilize Parker components in a way that offers improved systems performance – and hence a more competitive product – at a reduced total cost.

Include one of our System Experts to participate in your product development team!

A Focused Organisation

The Global Mobile Systems works together with our Sales companies and Product Divisions on developing system proposals and solutions to match the customers needs – today as well as in the future. The focused organisation makes Parker the most competent partner when developing a new generation of machines.
The Product Divisions are focused on developing and producing competitive components. Parker's broad product range gives the Global Mobile Systems an unparalleled capability to optimise systems for our customers. Together with the support from local sales companies, we are well equipped to provide a truly **Premier Customer Service.**

Global Mobile Systems

System Proposals

Our long and solid experience is at your service when engineering your mobile hydraulics system. We will be your partner in matching Parker components into a superior hydraulic system, giving your machine optimal performance at a low total cost.

Training

Parker Global Mobile Systems gives regular open courses in basic hydraulics and electronics for mobile machines. When supplying total systems, we of course also offer specific training related to the system and the components included.

Documentation Assistance

When selecting Parker as your partner in mobile hydraulics systems development, our systems engineers will offer documentation on systems and components during the course of the project, in order to support your own development of service and spare parts documentation for the total system.

Commissioning

Our Systems Engineers will support you not only in engineering your mobile hydraulics system, but also when commissioning the prototype and developing the system performance to match the target specifications for your machine.

Function Development

Systems Engineering works continuously in close co-operation with Parker product divisions in developing the real life performance of our components even further, to meet and exceed future demands. At our dedicated Systems Engineering Centre, all components are subject to rigorous, realistic testing to provide you with well-proven high-performing solutions.

Products to Match the Applications

To be able to continue to be your systems partner in machine development, we are focusing our R&D resources on developing new and improved products that will add more and more value to your future machines.

Product Solutions

Product Solutions

Dedicated products and solutions for different applications. Our product offering for reach stacker applications is shown below, with similar products available for the applications opposite.

zb 01

CD file includes system solutions for applications pictured on page 7.

Product Solutions

Telehandler

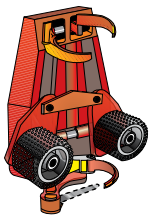
Drill Rig

Fork Lift

Dump Truck

Lorry Crane

Harvesting Head

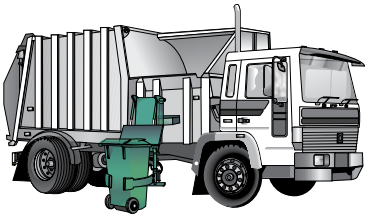


Forest Machine

Wheel Loader

Backhoe Loader

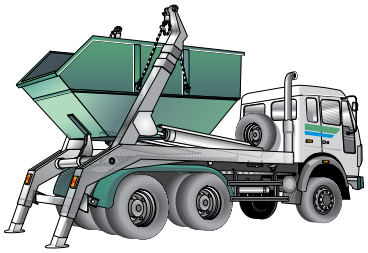
Refuse Collecting Vehicle - Side Loader



Front-End Loader

Rear-End Loader

Skip Loader



Hook Loader

Forest Crane

Value Added Programs

www.parker.com

Parker's extensive web site – www.parker.com – offers a wealth of product information and other resources. It is the industry's most comprehensive site and includes product information, downloadable catalogues, contact information, training materials, product selection software and live order capabilities. This user-friendly interface allows you to search by general product families, specific product type, division, or keywords.

Fluid Power Focus

Although Parker serves many industries including Aerospace, Construction, Mining, Turf, Automotive, Refrigeration, etc., we are still exclusively concentrated on controlling fluid motion and pressure. Since we are solely focused on fluid power, we clearly understand the needs of the mobile customer better than anyone.

Premier Customer Service

Parker's Premier Customer Service leads the industry in response. In addition to assured product quality, Parker provides engineering assistance, electronic ordering, consolidated shipments, on-time delivery, extensive product information, and customer training. Our employees are empowered to do whatever it takes to meet or exceed customer expectations.

Field Sales Team

Parker's highly trained mobile field sales force provides knowledgeable assistance in your product selection, working hand in hand with your local Parker distributor. These experts are strategically located throughout the country to work with you on product application issues.

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.

Technology Centres

Parker's MTC's and HTC's are selected because they have made the commitment to provide exceptional customer service and complete mobile hydraulic system solutions. Additionally, Parker Mobile Technology Centres carry the largest inventory of hydraulic components to insure fast delivery and less down time.

MTC Value and Services

A Parker Mobile Technology Centre (MTC) or Hydraulic Technology Centre (HTC) distributor is your local one stop shop for all your mobile needs. These centres are staffed with specialists who can provide engineering assistance, technical help, and full systems service for all your mobile hydraulic requirements. MTC's and HTC's were introduced by Parker in order to meet the changing needs of industrial customers, while increasing the level of services provided by a Parker distributor.

A Parker MTC (and 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 mobile needs and to locate your nearest Parker HTC/ MTC, call our European Product Information Centre free on phone: 00800 27 27 53 74 if you are calling from Austria, Belgium, France, Germany, United Kingdom, Eire, 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.

Mobile 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 air oil cooler with hydraulic motor is optimized for use in the mobile and industrial sector. Together with a wide range of accessories, the 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 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.

Electronics

With nearly three decades of worldwide Parker experience in advanced electronics and mobile hydraulics, we can provide simple or complex control systems to fit every need. Our most advanced IQAN product combines sturdy, well-tested hardware that meets or surpasses international standards with userfriendly, flexible software. Simple IQAN systems may be built from a large selection of components. More complex systems are made up of master/display units and expansion modules communicating on a CANbus.

Mobile Hydraulic Components

Filtration

Parker filtration products are designed to maximize the reliability of your hydraulic systems and components with positive protection against fluid contaminants. Our comprehensive line of pressure and return line filters enhances machine life, reduces maintenance and lowers costs. High, medium and low pressure filters are offered, as well as portable filter carts, 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 for complex circuits by selecting threaded cartridge valves from our wide range of products, and integrating them into a single manifold. We utilize 3D-CAD/CAM software, state-of-the-art HMC machining centres, and complete automated testing to maximize application performance.

Hydraulic Controls and Valves

We make hydraulic control valves for virtually every mobile equipment application from simple on/off functions to precise motion control. These include threaded cartridge valves, integrated hydraulic circuit blocks, bankable control valves, remote controls, mobile directional control valves, subplate mounted directional and proportional valves.

Hydrostatic Steering Units

Parker offers a full line of hydrostatic steering units for a wide range of off-road equipment applications. These rugged components are designed to withstand system contaminants and engineered to handle higher oil pressure and temperatures than competitive products. A choice of sizes is offered in open centre, closed centre and load sense configurations.

Mobile Cylinders and Rotary Actuators

Parker Hannifin is a leading manufacturer of hydraulic cylinders and rotary actuators for mobile equipment applications. Our products keep on delivering the high performance you expect from Parker, over millions of trouble free cycles. Parker cylinders have consistently proven to be the most reliable and cost-effective mobile cylinders on the market today. Our rotary actuators, with fully-enclosed mechanisms, constant torque in both directions and rugged bearings which eliminate the need for external support, reduce design, production and in-service costs.

Motors

Our full line of high and low speed motors provide power ranging up to 110.000 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.

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.

Accumulators - Piston, Bladder and Diaphragm

A & ACP Series Piston Accumulators

- Standard capacities from 0.08 to 76 litres
- 250 bar and 350 bar maximum operating pressures
- Bore diameters from 40 mm to 200 mm
- Seal compounds to suit all standard fluids and operating temperatures
- Threaded or high-strength crimped construction for long service life
- CE approved for use throughout Europe

za 01

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 and composites.
- Various bladder materials available which are compatible with a range of fluids and temperatures
- CE approved (Meet conformity assessment according to the PED)

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

za 01

Cylinders / Actuators

Multi-stage, Double-acting Telescopic with
Mechanical Plunger and Load Holding Valve

Parker offers single- or double-acting single stage and telescopic mobile cylinders. Custom cylinders can be built in batch sizes from one piece to hundreds. We work with our customers to develop specifications in a wide range of sizes, pressures and mounting styles. New Intellinder absolute position sensing is ideally suited for double rod steering cylinders, and is available with two or more sensors for multiple redundancy in safety-critical applications.

Multi-stage, Single-acting Telescopic

Telescopic Cylinders
- Bore sizes up to 500 mm diameter
- Any practicable stroke length
- Operating pressures up to 500 bar
- Seal compounds to suit all standard fluids
- A wide range of materials and coatings
  - stainless steel
  - electroless nickel
  - nitriding
  - chrome and double-chrome plating
- Options include
  - loadholding valves
  - electro-hydraulic transducers
  - position switches
  - end of stroke hydraulic damping
  - protective rod boots
  - flow controls
  - flow fuses

Single Stage Cylinder

Single Stage Cylinders
- Cyl. Bore: Ø 25-200 mm
- Pressure: 160 bar
- Max Stroke: 2800 mm

zc 01, zc 03

Intellinder

Intellinder
- Integrated, fully protected electro-optical position sensor
- Rugged construction – uses the piston rod as the measuring scale
- Maintenance-free design
- Resolution – 0.03 mm
- Repeatability – 0.04 mm
- Data input/output – J1939 CAN
- Ingression – connector, IP67 equivalent; sensor and lead IP68

zcy09

HTR Rotary Actuators

Rack and pinion rotary actuators deliver constant torque, in both directions. Parker offers single rack and double rack versions, with 'specials' to customer order.

- Output torques up to 68.000 Nm
- Standard rotations – 90°, 180°, 360°
- Specials up to five revolutions or more
- Up to 210 bar operating pressure

zc 02

Cylinders / Coolers

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

zcy10

Air/Oil Coolers

LHC – hydraulic motor

- Cooling capacity up to 300 kW
- Hydraulic motor up to 25.2 cm^3/rev
- Compact and light weight
- Quiet fan and motor
- Low pressure drop
- High cooling capacity
- Service-friendly and easy to retrofit
- LHC-X for ATEX requirements
- LHC-M for marine environments
- For Forestry Machines
- Mining Machines
- Crushing Machines
- Marine Cranes

zco 04

LDC – DC motor

- 12V or 24V DC motor
- Maximal cooling capacity 30 kW
- Can be fitted with Smart DC Drive
- Compact and light weight
- Quiet fan and motor
- Low pressure drop
- High cooling capacity
- Service-friendly, easy to retrofit
- For Truck cranes
- Body builders
- Mining Applications

zco 05

Compact Hydraulics - Oildyne

Series 108

- AC or DC motor
- 4 pump sizes – up to 3 l/min
- Single or bidirectional rotation
- Fixed relief valve
- Locking check valves available on all models
- Variety of hydraulic circuits
- Reservoirs from 0.45 to 5.5 litres
- 241 bar rating

zu 01

Series 165

- 0.75 kW, 12 VDC electric motor
- 3 pump sizes (0.52, 0.82 and 1.06 cm^3/rev)
- Variety of circuits
- Many reservoir choices
- Up to 240 bar operating pressure
- Soft seat load hold check valves
- Vertical or horizontal mounting

zu 06

Series 550

- Numerous motors to 1.5 kW
- 6 pump sizes – flows from 1 to 11.4 l/min
- Externally adjustable relief valve
- Variety of reservoirs
- Operating pressure to 210 bar
- NG6 pad or standard P and T ports

zs 02

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

Miniature Piston Pumps 5 Piston Design

- Pressures to 275 bar
- Displacements from 0.156 to 0.865 cc/rev
- Pumping Efficiencies to 90 %

zu 03

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

Flow Meters & Monitors

An extensive range of inline flow meters, flow switches and test equipment for oil, water and air applications. Inline flow indicators and precision monitors, flow transmitters, stainless steel flowmeters for corrosive or chemical media and flow products designed for arduous conditions.

zfa 05

Fluid Analysis / Brake and Steering

SensoControl

SensoControl handmeters and complete measuring systems are perfectly suited measuring tools for every application. Whether they are used in the industrial area, in mobile hydraulics, for service or repair: measuring and processing of hydraulic values is the basis of safe trouble shooting. The systematic search of errors with modern means is something the service engineer simply cannot do without. To meet the requirements in both modern industrial hydraulics and complex mobile hydraulics, we offer a range of different models.

zsc 01

Hydraulic Operated Power Brake

Pump package complete with accumulator charge valve and accumulator and a Single Brake Modulating Valve with pedal.

Within the Parker Hannifin product range we can offer components for a hydraulic operated power brake system. The brake system onboard a vehicle is vital for the safety of the vehicle. It is therefore important that the design of the vehicle and the design of the brake system are co-ordinated to give an optimal safety and good performance and that complements other modern cab ergonomics to reduce operator fatigue and give good machine feel. We are pleased to help you select the right components for a given application. Contact your local Parker Hannifin Office.

zs 01

Hydraguide™ Hydrostatic Steering Units

HGF

- Compact package size
- Steering dams for precise metering
- Removable upper column
- Full pressure shaft seal
- Internal relief valve
- Low noise option
- Manual emergency steering

zs 02

Frame size HGF	08	10	12	16	20	24
Displacement (cm^3/rev)	54.1	67.7	81.1	108.2	135.2	162.3
Max operating pressure (bar)	124	124	124	124	124	124
Flow (l/min)	30	30	30	30	30	30
Weight (kg)	4	4.1	4.2	4.4	4.7	4.8

Thermoplastic Hoses

Polyflex/Parflex

Thermoplastic Hoses for Hydraulic Applications

For pressures up to 700 bar. Single and multiple lines with permanently attached end fittings for self assembly with Polykrimp/Parkrimp systems.
Applications: low pressure to high pressure hydraulic, pneumatic and surface finishing, PTFE hoses.
Construction: thermoplastic hoses with synthetic fibre/steel wire reinforcement.

Size range: from 1/4" to 1.1/4".
Working pressure: 700 bar on 1/4" and 275 bar on 1.1/4".
Temperature range: -57 °C to +150 °C.

zfc 03
Catalogue 4460

Polyflex Products for mobile applications

Tubing for Pneumatics

- **Small bore hoses (sizes starting ID 2 mm) for easy installation and space saving in tight machine areas, e.g. lubrication, pilot, diagnostic**
- **PTFE hose for applications up to 250°C, e.g. turbo charger, compressor lines**
- **Hose for extendable booms, e.g. telehandler, man lifters, cranes**
- **Mast hoses for Fork Lift Trucks including cold store applications**
- **Change in lenght**
- **Extreme lightweight -> low weight by design**
- **Twin & multiple hoses -> compact and space saving solutions**

zfc 02
Catalogue 5210

8LPG Hose

Hose for Mobile Applications in Vehicles

LPG system for cars, buses and trucks with polymer outer layer, highly resistant to wear and abrasion and also resistant to weathering, UV and ozone.

Inner layer: polyamide. Reinforcement: one braid of extremely tear-resistant synthetic fibres.
Outer layer: polyamide. Temperature range: -25 °C to 125 °C

Fittings

Parker Universal Push to Connect

For tubes and hoses
Based on DIN 24° system and SAE O-Lok®
100% assured assembly
100% leak free
Can be disassembled with standard tools
Applications: steering hydraulics, hydraulic cab tilt systems, transmission oil cooling, etc.

Parflange® F37

For high pressure tube flange connections without welding.

Hydraulic Fittings

EO-PSR, EO-2, EO2-FORM

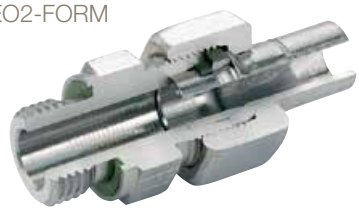
EO-PSR

- 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. 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. Standards: ISO 8434-2, SAE J514.

zfc 07
Catalogue 4100-9

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 size)
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

Agricultural Hydraulic

Quick couplings and multicoupler systems with ball locking mechanism designed to satisfy many applications such as hydraulic connection between toolings and tractors, forestry equipment, mowers and also road service vehicles. Most of the series meet the ISO 7241-1-A standard and are widely interchangeable. They are used by major manufacturers of tractors and agricultural equipment worldwide.

Material: steel.
Sizes: from 1/4" to 1".
Threads: BSPP, NPTF, UNF and metric.
Rated pressure: up to 250 bar.

zfc 12
Catalogue CAT/3800-HYD/UK

High Pressure

General purpose and screw-to-connect quick couplings for rock breakers, hydraulic hammers, excavators... They combine the advantages of high pressure up to 1500 bar with well proven designs.

Material: steel.
Sizes: from 3/8" to 1.1/2".
Threads: BSPP, NPTF, NPSF, UN(F), metric.
Rated pressure: up to 1500 bar.

zfc 13
Catalogue CAT/3800-HYD/UK

Diagnostic

Diagnostic couplings provide easily accessible test points for performance testing of hydraulic systems in plant or on mobile vehicles. This early detection contributes to equipment efficiency and long life. Parker PD & PDP series combine many advantages: ISO 15171-1 & SAE J1502 conformity for wide interchangeability, flat-faced poppet for reduced spillage, possibility to connect under pressure.

Material: steel.
Size: 1/8".
Threads: BSPP, NPTF, UNF and metric.
Rated pressure: up to 420 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.

Quick Couplings

Medium Pressure – TEMA Multi Line™

TEMA MULTI-LINE® coupling systems can be used for a wide variety of applications and open up huge potential in handling and efficiency. Developed by our Swedish design engineers, they have been tested under extreme conditions, for practical suitability in numerous applications. The systems are completely compliant with the high function, safety and durability demands of industrial users as well as being an efficient alternative to individual systems in the mobile hydraulics.
C-Line Compact for mobile hydraulics.
C-Line Standard for mobile hydraulics with up to four connections.
I-Line Industry for industrial mechanical engineering.

Max. pressure range: 350 bar.
Equipped with: Pressure eliminator and FlatFace couplings.
Connections: 3/8", 1/2" or 3/4".
C-Line multi plates are provided with protective cap and support plate as standard. Optional assembly brackets are available.

Catalogue CAT/3800-HYD/UK

Hydraulic Equipment

For each application, we have a solution: general purpose 60 series meeting ISO 7241-1-B standard, screw-to-connect 6100 series to connect under pressure, FEM series with flat-faced poppet to protect work place and environment.

Material: steel.
Sizes: from 3/8" to 1.1/2".
Threads: BSPP, NPTF, NPSF, UNF.
Rated pressure: up to 280 bar.

zfc 27
Catalogue CAT/3800-HYD/UK

Parflange® 50

The Parflange® 50 is an orbital 37° flaring and 180° flanging machine. By using the Parflange® process, it achieves an excellent sealing surface and a high-strength tube connection.

It represents a complete tube forming WorkCenter. For professional mass production of O-Lok® connections, the Parflange® 50 PRO can be ordered with an automatic sleeve feeder.

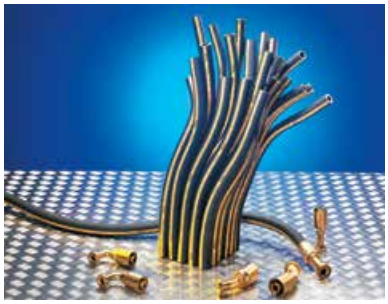
The Parflange® 50 BASIC is ideal workshop use and project work, the 50 PRO is ideal for professional mass production.

180° flanging of: O-Lok®
37° flaring of.: Triple-Lok®
Assembly method: Orbital flaring
Tube O.D.: 6–50 mm
Total cycle time: 15–20 sec.
Economic production quantity: max. 500 assemblies per day
Quantity with sleeve feeder: max. 1200 assemblies per day
Dimensions (L x W x H): 700 x 840 x 1035 mm.
Weight: 380 kg.
Power supply: 400 V, 3-phase, 50 hz, 4.5 KW.

zfc 28
Catalogue 4100-8

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.
Technical data: 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:

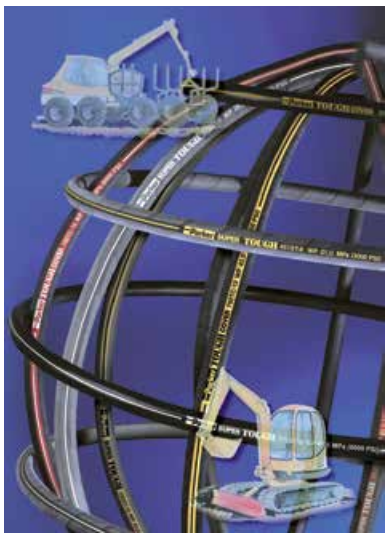
- Easy assembly without tools and clamps
- Low installation costs
- High reliability - safety factor 4
- Variety of hose types
- 8 different colours
- One fitting series for all hose types

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

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
- Balanced design
- 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

Vane

DENISON®

Fan – M5

- Heavy duty bearing
- High performance motor
- Integrated valves possible (anti cavitation check, proportional pressure relief valve, ...)
- Low noise motor
- Bi-rotational technology
- Low torque ripple
- Long lifetime
- Interchangeable rotating groups


zvp 01

Frame size M5AF	006	010	012	016	018	023	025	M5BF	012	018	023	028	036	045
Displacement (cm^3/rev)	6.3	10.0	12.5	16.0	18.0	23.0	25.0		12.0	18.0	23.0	28.0	36.0	45.0
Max cont pressure (bar)	300	300	300	300	300	280	280		290	290	290	290	290	260
Max operating speed[1] (rpm)	5000	5000	3800	3800	3300	3000	3000		4000	4000	3000	3000	3000	2500
Max output torque[2] (Nm)	26.1	43.7	55.7	71.4	81.2	-	-		50.6	81.2	117.1	132.1	172.8	-
Output power[2] (kW)	5.5	9.2	11.7	15.2	17.0	-	-		10.6	17.0	24.5	27.7	36.2	-
Weight (kg)	15.0	15.0	15.0	15.0	15.0	15.0	15.0		18.5	18.5	18.5	18.5	18.5	18.5

Frame size M5ASF	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
Max 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

1) Max shaft speed at max pressure

2) Output at 2000 rpm, 24 cSt & M5B* at 320 bar, 045 at 280 bar, M5AF at 300 bar

Gerotor

TE

- High volumetric efficiency
- Long life
- Full flow spline cooling
- High pressure shaft seal
- High flow shaft seal cooling
- High starting torque
- High side load capacity
- Balanced performance in both directions of rotation


zm 03

Frame size TE	0036	0045	0050	0065	0080	0100	0130	0165	0195	0230	0260	0295
Displacement (cm^3/rev)	36	41	49	65	82	98	130	163	195	228	260	293
Max cont pressure (bar)	140	140	140	140	140	140	140	140	140	120	110	100
Max operating speed (rpm)	1141	1024	1020	877	695	582	438	348	292	328	287	256
Max cont output torque (Nm)	55	71	90	125	160	190	255	310	390	380	400	428
Weight. code L and H (kg)	6.7	6.8	6.9	7.0	7.1	7.2	7.6	7.8	8.1	8.3	8.6	8.8

Frame size TE	0330	0365	0390
Displacement (cm^3/rev)	328	370	392
Max cont pressure (bar)	100	95	85
Max operating speed (rpm)	228	203	191
Max cont output torque (Nm)	443	467	445
Weight. code L and H (kg)	9.1	9.4	9.6

TF

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


zm 05

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 code H and V (kg)	14.0	14.0	14.2	14.3	14.6	14.9	15.3	15.6	16.3	17.0	17.5

Motors - Fixed Displacement

Gerotor

TG

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

zm 06

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 code H and V (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

BG

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

zm 04

Frame size BG	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
Brake holding capacity (Nm)	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000	1000
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

TH

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

zm 07

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 code B.X.L.A.Y. (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

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

Motors - Fixed Displacement

Axial Piston

F1

- Pressures up to 350 bar
- Positive synchronization with timing gear
- Shaft end and mounting flange meet the ISO standard for all sizes
- Very low weight
- High overall efficiency withstand high acceleration

zp 16

Frame size F1	25-M	41-M	51-M	61-M	81-M	101-M	121-M
Displacement (cm³/rev)	25.6	40.9	51.1	59.5	81.6	102.9	118.5
Max cont pressure (bar)	250	250	250	250	250	250	250
Max operating speed (rpm)	3000	2700	2400	2200	2000	1800	1700
Output torque at 200 bar (Nm)	81	130	162	189	259	327	376
Output power (kW)	20	27	31	34	41	48	51
Weight (kg)	8.5	8.5	8.5	8.5	12.5	12.5	12.5

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 (cm³/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 (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)	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

T12

- Designed specifically for track drives
- Very high operating speeds
- Pressures up to 480 bar
- Very high power capability
- High starting torque
- Low weight
- High overall efficiency
- Axial or side ports
- Two-position control
- Cartridge version available
- Service-friendly

zm 22

Frame size T12	60	80
Displacement max at 35° (cm^3/rev)	60	80
Displacement min at 10° (cm^3/rev)	18	24
Max continuous pressure (bar)	420	420
Max operating speed (rpm)	7000	6250
Corner power cont (kW)	235	280
Weight (kg)	26	30.5

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° (cm^3/rev)	60	80
Displacement min at 6.5° (cm^3/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

- Operating pressures up to 480 bar
- High speeds thanks to low weight pistons with laminated piston rings and a very compact design of the rotating parts
- High over all efficiency throughout the entire displacement range
- 9 pistons provide high start-up torque and smooth operation
- Wide displacement range – 5:1
- Small envelope size and high power-to-weight ratio
- Low noise levels due to the compact, sturdy design and smooth fluid passages
- Positive piston locking, strong synchronizing shaft, heavy-duty bearings and a small number of parts add up to a very robust motor with long service life and proven reliability

zm 20

Frame size V14	110	160
Displacement max at 35° (cm^3/rev)	110	160
Displacement min at 6.5° (cm^3/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

Motors - Variable Displacement

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 (cm^3/rev)	152.1	166.2	225.8	248.9	237.6	270.2	381.3	463.9
Max Displacement (cm^3/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 (cm^3/rev)	603.2	697.0	930.7	1034.6	1497.8	1800.4	2322.4	2742.1
Max Displacement (cm^3/rev	1809.6	2091.2	2792.0	3103.7	4502.7	5401.2	6967.2	8226.4
Max cont pressure (bar)	250	210	250	210	250	210	250	210
Speed range 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

Parker

Power Take-Off

Mechanical 6 & 8 Bolt Power Take-Offs

442

- Engineered to work with virtually all existing transmission applications
- Economical workhorse features a cast iron housing
- Tapered cone bearings for high torque rating and long service life
- Slip fit idler pin for easy interchange from one transmission to another
- Easy to set backlash
- Wide range of shift and output options

Series 442	A	B	C	F	H	L	Q	R	S	U	W	X
Standard Output Shaft Size	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"
Intermittent Torque Rating (Nm)	339	339	339	339	339	339	305	305	271	264	237	190
Power Rating for Intermittent Service: at 500 rpm of Output Shaft	18	18	18	18	18	18	16	16	14	14	12	10
at 1000 rpm of Output Shaft (kW)	36	36	36	36	36	36	32	32	28	28	25	20

489

- 442 Series family, but with an 8-bolt mounting flange
- No adapter plate needed
- Less installation time, less expense and less chance of leakage
- Wide range of shifters options and pump flanges

zpto 01

Series 489	A	C	F	H	L	Q	R	S	U	W	X
Standard Output Shaft Size	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"
Intermittent Torque Rating (Nm)	339	339	339	339	339	305	305	271	264	237	190
Power Rating for Intermittent Service: at 500 rpm of Output Shaft	18	18	18	18	18	16	16	14	14	12	10
at 1000 rpm of Output Shaft (kW)	36	36	36	36	36	32	32	28	28	25	20

823

- Robust design for high torque applications
- Lever shift standard
- Inspection cover for adjusting backlash
- Popular pump mounts available

Series 823	B	D	G	J	M	R	T
Standard Output Shaft Size	1½" 10T spline with 1410 flange						
Intermittent Torque Rating (Nm)	678	678	678	678	678	542	475
Power Rating for Intermittent Service: at 500 rpm of Output Shaft	36	36	36	36	36	28	25
at 1000 rpm of Output Shaft (kW)	71	71	71	71	71	57	50

880

- Wide coverage for tough applications
- Speed ratios for high and low speed applications
- Removable shift cover for adjusting backlash
- Dual-pump output for mounting a pump on each end of the PTO

Series 880	B	D	G	J	M	Q	R	T
Standard Output Shaft Size	1½" 10T spline with 1410 flange							
Intermittent Torque Rating (Nm)	678	678	678	678	678	610	542	475
Power Rating for Intermittent Service: at 500 rpm of Output Shaft	36	36	36	36	36	32	28	25
at 1000 rpm of Output Shaft (kW)	71	71	71	71	71	64	57	50

Power Take-Off

Power Shift 6 & 8 Bolt Power Take-Off's

236

- Optional Internal Self-Adjusting Shaft Brake
- Wide selection of input gears for virtually all currently produced transmissions
- Helical gears and optional pressure lubrication to extend PTO service life
- Inspection cover for adjusting backlash

Series 236	D, K & Q	U	
Standard Output Shaft Size	1¼"	1¼"	
Intermittent Torque Rating (Nm)	339	305	
Power Rating for Intermittent Service: at 500 rpm of Output Shaft	18	16	
at 1000 rpm of Output Shaft (kW)	36	32	

270/271

- Designed for automatic transmissions
- Electric-over-hydraulic shifting
- 271 offers low profile housing for avoiding clearance problems
- Pressure lubrication available for both units

Series 270/271	270[1] A, B, D & K	270[2] A, B, D & K	271[3] A, B, D & K	
Standard Output Shaft Size	1¼"	1¼"	1¼"	
Intermittent Torque Rating (Nm)	407	339	339	
Power Rating for Intermittent Service: at 500 rpm of Output Shaft	21	18	18	
at 1000 rpm of Output Shaft (kW)	43	36	36	

[1] With Pressure Lube [2] With Standard Lube [3] All Lube Types

852

- Designed for Heavy Duty applications
- Three speed ratios to choose from
- Pump flanges to fit most popular hydraulic pumps
- Pressure Lubrication standard

Series 852	B	G	J	
Standard Output Shaft Size	1½" 10T spline with 1410 flange			
Intermittent Torque Rating (Nm)	678	678	678	
Power Rating for Intermittent Service: at 500 rpm of Output Shaft	36	36	36	
at 1000 rpm of Output Shaft (kW)	71	71	71	

885

- Designed for Heavy Duty applications such as pneumatic blowers
- Rugged cast iron housing
- Four speed ratios to choose from
- Pressure Lubrication available

Series 885	B	G	J	M	
Standard Output Shaft Size	1½" 10T spline with 1410 flange				
Intermittent Torque Rating (Nm)	678	678	678	678	
Power Rating for Intermittent Service: at 500 rpm of Output Shaft	36	36	36	36	
at 1000 rpm of Output Shaft (kW)	71	71	71	71	

Power Take-Off

Power Shift 10 Bolt Power Take-Off's

280

- It will feature a single continuous duty torque rating. No more intermittent rating
- Torque capacity ratings have been increased
- Pump clearance issues have been improved with rotatable cast iron flanges
- New positive stop for Driveline outputs – Eliminates ability for shaft couplings to damage Oil Seals
- Wet Spline Pump Flange option provides 7 to 10 times greater shaft life
- Broader coverage of speed ranges expanding from 5 ratios to 9 ratios
- Lower and higher speed now available
- The pressure / lube hose will be included with the new 280 Series. No need to order separately
- Three option positions for the integrated solenoid valve. Plus a remote mounted option provides maximum clearance

Series 280	B	C	D	G	K	M	P	S	T
Standard Output Shaft Size	1-1/4" Round w/key								
Intermittent Torque Rating (Nm)	407	529	529	488	461	431	393	359	325
Power Rating for Intermittent Service: at 500 rpm of Output Shaft	29	37	37	34	32	30	28	25	23
at 1000 rpm of Output Shaft (kW)	43	58	56	51	48	45	41	38	34

* SuperTorque™

870

- Integral actuation valve simplifies plumbing and reduces installation time
- Compact housing height reduces clearance issues
- Remote mount valve solves installation interference problems
- Electronic Overspeed Control (E.O.C.) protects driven equipment
- Wet Spline pump flange extends P.T.O. and pump shaft life

Series 870	A	B	C	D	E	F	G	H	J
Standard Output Shaft Size	1½" Spline with 1410 flange								
Continuous Torque Rating (Nm)	908	854	800	746	658	583	515	481	454
Power Rating for Continuous Service: at 500 rpm of Output Shaft	48	45	42	39	35	31	27	25	24
at 1000 rpm of Output Shaft (kW)	95	90	84	78	69	61	54	51	48

890/892

- Moves the P.T.O. mounting flange to the rear of the transmission allowing larger pumps and in some cases it will eliminate the need for a drive shaft
- Wet Spline outputs extends shaft life and eliminates the need to disassemble to frequently grease the splines
- Require less space than current P.T.O.s. Will help clear frame rails etc.
- Torque ratings up to 670 Lbs. ft. allows the use of higher flow and pressure pumps

Series 890/892	A	B	C	D	E	F
Standard Output Shaft Size	1¼" 14T spline					
Continuous Torque Rating (Nm)	908	854	800	746	658	583
Power Rating for Continuous Service: at 500 rpm of Output Shaft	48	45	42	39	35	31
at 1000 rpm of Output Shaft (kW)	95	90	84	78	69	61

Power Take-Off

Constant Mesh 10 Bolt Power Take-Off's

267

- Constant Mesh (non-shiftable) PTO ideal for applications requiring continuous power
- Wet Spline Output options available
- Three speed ratios and ten output options
- SuperTorque™ gears available for 20% higher intermittent torque ratings
- No backlash to adjust

Series 267	B	G	S	SB*	SG*	SS*
Standard Output Shaft Size	1¼"	1¼"	1¼"	1¼"	1¼"	1¼"
Intermittent Torque Rating (Nm)	454	407	339	545	488	359
Power Rating for Intermittent Service: at 500 rpm of Output Shaft	24	21	18	29	26	19
at 1000 rpm of Output Shaft (kW)	48	43	36	57	51	38

* SuperTorque™

560V

- Wet Spline for Extended P.T.O. and Pump Shaft Life
- Single Continuous Duty Torque Rating
- Torque Rating of 335 Lbs. ft. (454 N.m.)
- Flow rates 3.4 to 31.7 GPM (12.9 119.9 LPM) at 1200 R.P.M.
- Pressure Ratings up to 3500 PSI (240 Bars)
- 12 or 24 Volt Electric Over Hydraulic Actuation
- Pressure and Suction Ports Rotatable for Best Clearance
- Weight 71 Lbs. No Pump Bracket Required
- Quiet Operation
- Patent Pending

Series 560V	03	05	06	09	10	12	14	17	20	22	25	28	31
Displacement ml/rec	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
Intermittent pressure (Bars)	275	275	275	275	275	275	275	275	275	275	275	210	210
Continous Pressure (Bars)	240	240	240	240	240	240	240	240	240	240	240	160	160
Maximum RPM	2800	2800	2800	2800	2800	2800	2800	2800	2800	2800	2500	2500	2500

897/899

- Moves the P.T.O. mounting flange to the rear of the transmission allowing larger pumps and in some cases it will eliminate the need for a drive shaft
- Require less space than current P.T.O.s. Will help clear frame rails etc.
- Torque ratings up to 908 N.m. allows the use of higher flow and pressure pumps
- Wet Spline outputs extends shaft life and eliminates the need to disassemble to frequently grease the splines

Series 897/899	A	B	C	D	E	F
Standard Output Shaft Size	1¼" 14T spline					
Continuous Torque Rating (Nm)	908	854	800	746	658	583
Power Rating for Continuous Service: at 500 rpm of Output Shaft	48	45	42	39	35	31
at 1000 rpm of Output Shaft (kW)	95	90	84	78	69	61

877

- Torque capacity up to 908 N.m.
- Compact housing height reduces clearance issues
- Wet Spline pump flange extends P.T.O. and pump shaft life

Series 877	A	B	C	D	E	F	G	H	J
Standard Output Shaft Size	1½" Spline with 1410 flange								
Continuous Torque Rating (Nm)	908	854	800	746	658	583	515	481	454
Power Rating for Continuous Service: at 500 rpm of Output Shaft	48	45	42	39	35	31	27	25	24
at 1000 rpm of Output Shaft (kW)	95	90	84	78	69	61	54	51	48

Power Take-Off

Split Shaft Power Take-Offs

912

- Three 8-Bolt openings that allow you to operate a variety of auxiliary equipment
- Wide variety of 6-Bolt, 8-Bolt, PowerShift and Reversible PTO's fit the 912 Series
- Air and Lever shift available

Series 912			
Standard Output Shaft Size	2 ¾" 10T Spline		
Max Thru Torque Capacity w/Diesel Engine: Automatic Transmission	13 000 lbs ft	17 625 Nm	
Manual Transmission	12 000 lbs ft	16 270 Nm	
Max Thru Torque Capacity w/Gas Engine: Automatic Transmission	16 000 lbs ft	21 693 Nm	
Manual Transmission	15 000 lbs ft	20 337 Nm	

941

- Smaller version of the 912 Series with three 6-bolt openings
- Designed for Class 3, 4, 5 and 6 trucks with automatic transmissions and no P.T.O. opening or trucks requiring additional P.T.O. openings
- Special Park Brake Applications available
- Several 6-Bolt and Reversible P.T.O.s will fit on the 941 Series

Series 941			
Standard Output Shaft Size	1 ½" 12T Spline		
Max Thru Torque Capacity w/Diesel Engine: Automatic Transmission	3100 lbs ft	4203 Nm	
Manual Transmission	2900 lbs ft	3932 Nm	
Max Thru Torque Capacity w/Gas Engine: Automatic Transmission	4200 lbs ft	5694 Nm	
Manual Transmission	3900 lbs ft	5288 Nm	

Rear Mount Power Take-Offs

511

- Rear mount design - requires less mounting space and simplifies installation
- Wet Spline outputs - Extend PTO and Pump Shaft Life. Eliminates the need to disassemble to grease the mating Pump and P.T.O. shafts
- Four direct mount pump options
- Four Shift Options
- No gear back lash to set - simplifying installation

zpto 01

Series 511	R	
Standard Output Shaft Size	4-Bolt DIN 5462	
Continuous Torque Rating (Nm)	800	
Power rating for Continuous Service At 500 rpm of the Output Shaft (kW)	42	
At 1000 rpm of the Output Shaft (kW)	84	

523

- Rear mount design - requires less mounting space and simplifies installation
- Wet Spline outputs - Extend PTO and Pump Shaft Life. Eliminates the need to disassemble to grease the mating Pump and P.T.O. shafts
- Four direct mount pump options
- Four Shift Options
- No gear back lash to set - simplifying installation

Series 523	T	V	
Standard Output Shaft Size	4-Bolt DIN 5462		
Continuous Torque Rating (Nm)	350	350	
Power rating for Continuous Service At 500 rpm of the Output Shaft (kW)	18	18	
At 1000 rpm of the Output Shaft (kW)	37	37	

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 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

Gear

GPA

- Low noise
- High efficiency
- Bi-rotational
- Compact design
- Low weight / Aluminium body
- Pressure and suction connection in the rear and on the side

zp 45

Frame Size GPA	008	012	016	019
Displacement (cm^3/rev)	8	12	16	19
Max cont pressure (bar)	250	250	250	230
Max operating speed (rpm)	2000	2000	2000	2000
Weight (kg)	4.6	4.8	5.1	5.3

GP1

- Low noise
- High efficiency
- Bi-rotational
- Exceptional durability
- Compact design
- Low weight
- Pressure and suction connection in the rear or on the side

zp 47

Frame Size GP1	016	019	023	029	036	041	046
Displacement (cm^3/rev)	16	19	23	29	36	41	46
Max cont pressure (bar)	270	260	250	240	230	210	200
Max operating speed (rpm)	2000	2000	2000	2000	2000	2000	2000
Weight (kg)	6.0	6.3	6.7	7.1	7.5	7.8	8.1

Pumps - Fixed Displacement

Vane – SAE

DENISON®

Single

- 275 bar max pressure for T6CM. 240 bar for T6DM & T6EM
- Silent technology even under high pressure
- Wide range of displacements
- User friendly = easy conversions & evolutions
- Wide number of shafts available (SAE, ISO & specials)
- Double shaft seal option possible (T6CP, T6DP & T6EP)
- Rear drive train options available (SAE A, SAE B or SAE C)

zvp 01

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 T6CM	B03	B05	B06	B08	B10	B12	B14	B17	B20	B22	B25	B28	B31
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[3]	12.2	14.7	17.7	22.3	24.1	29.5	36.9	40.2	44.1	49.5	48.5[4]	54.4[4]
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 T6DM	B14	B17	B20	B24	B28	B31	B35	B38	B42	B45	B50
Displacement (cm^3/rev)	47.6	58.2	66.0	79.5	89.7	98.3	111.0	120.3	136.0	145.7	158.0
Max cont pressure (bar)	210	210	210	210	210	210	210	210	210	210	160
Max int pressure (bar)	240	240	240	240	240	240	240	240	240	240	210
Max operating speed[1] (rpm)	2500	2500	2500	2500	2500	2500	2500	2500	2200	2200	2200
Input power[2] (kW)	30.6	37.0	41.7	49.8	55.9	61.0	68.7	74.3	83.7	89.5	85.0[4]
Weight (kg)	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0	24.0

Frame size T6EM	042	045	050	052	054	057	062	066	072
Displacement (cm^3/rev)	132.3	142.4	158.5	164.8	171.0	183.3	196.7	213.3	227.1
Max cont pressure (bar)	210	210	210	210	210	210	210	210	210
Max int pressure (bar)	240	240	240	240	240	240	240	240	240
Max operating speed[1] (rpm)	2200	2200	2200	2200	2200	2200	2200	2200	2200
Input power[2] (kW)	82.6	88.7	98.3	102.1	105.8	113.2	121.3	131.2	139.5
Weight (kg)	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 at 240 bar (except TB at 175 bar) 3) 140 bar 4) 210 bar max

Double

- Very low noise
- SAE or ISO standards
- One piece shaft (no internal torque limitations)
- Single common inlet
- 32 porting orientations available, 16 different double pump frames
- 819 displacement possibility (from 10.8 to 227.1 cm^3/rev) with a max displacement of 454.2 cm^3/rev
- Displacement combinations with above T6CM – T6DM & T6EM
- High power to weight ratio
- Wide range of options available = different shafts, threads, pilots
- Double shaft seal option available (T6CCP, T6DCP, T6ECP & T6EDP)
- Special shafts for tractors (J718c) T6CCMW, T6DCMW, T6ECM & T6EDM)

Triple

- Very low noise
- Single common inlet
- 128 porting orientations available
- 6766 displacement combinations (from 10.8 to 227.1 cm^3/rev) with a max displacement of 552 cm^3/rev
- One piece shaft (no internal torque limitation)
- High power to weight ratio
- 15 different triple pump frames available

Parker

Pumps - Fixed Displacement

Vane

DENISON®

Single & Double

- Special PTO shaft DIN 5462
- Silent technology
- Designed for radial load capability
- Flexibility in the porting
- Two pilot options = 4 bolts Ø 80.0 or 3 bolts Ø 52.0
- Maximum working pressure 275 bar
- Double pump available (T6GCC)

zvp 01

Frame size T6GC - T6ZC	B03	B05	B06	B08	B10	B12	B14	B17	B20	B22	B25	B28	B31
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)	257	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
Max input power[2] (kW)	-	12.2	14.7	17.7	22.3	24.1	29.5	36.9	40.2	44.1	49.5	48.5	54.4
Weight (kg)	T6GC = 18.0 T6ZC = 14.0 T6GCC = 27.2												

1) Shaft speed for petroleum based fluids. For higher speeds, please contact Parker Denison
2) 1500 rpm at 240 bar

Vane – Cardan Shaft

Double – T6CCZ

- High radial & axial loads capabilities
- 3 different keyed shafts available
- One inlet
- Displacements = on P1 from 10 to 100 cm^3/rev & P2 from 10 to 100 cm^3/rev
- Pressure: up to 275 bar on P1 & P2

Axial Piston & Fixed Vane Combination

Double & Triple

- Variable piston & vane pump combination
- Wide range of displacements:
  – Variable piston unit of 42 cm^3/rev (SAE B) or 62 cm^3/rev (SAE C)
  – Vane unit from 6 cm^3/rev to 158 cm^3/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

Pumps - Fixed Displacement

Axial Piston

F1

- Intermittent pressures up to 400 bar
- High power capability
- High shaft speed
- Low weight
- Bi-directional
- Volumetric efficiency 98 %
- Also SAE-B available sizes 25 up to 61

zp 16

Frame size F1	25	41	51	61	81	101
Displacement (cm^3/rev)	25.6	40.9	51.1	59.5	81.6	102.9
Max cont pressure (bar)	350	350	350	350	350	350
Max operating speed* (rpm)	2700	2700	2700	2700	2300	2300
Max operating speed** (rpm)	2600	2400	2200	2200	2000	1800
Input torque at 350 bar (Nm)	142	227	284	331	453	572
Max cont input power (kW)	31	46	52	61	76	86
Weight (kg)	8.5	8.5	8.5	8.5	12.5	12.5

* Unloaded pump (BPV) ** In service 350 bar

F2

- Twin Flow / Dual displacement
- High power capability
- High shaft speed
- Easy to install
- Smart System Solutions
- Proven reliability

zp 16

Frame size F2	42/42	55/28	53/53	70/35	70/70
Displacement (cm^3/rev)	43/41	54/52	55/28	69/36	68/68
Max cont pressure (bar)	350	350	350	350	300
Max operating speed* (rpm)	2550	2550	2550	2550	2550
Max operating speed** (rpm)	1800	1800	1800	1800	1650
Input torque at 350 bar (Nm)	467	461	589	583	648
Max cont input power (kW)	88	88	110	110	112
Weight (kg)	19	19	19	19	19

* Unloaded pump (BPV) ** In service 350 bar

T1

- Pressures up to 350 bar
- Shaft speed to 2300 rpm
- High overall efficiency
- Bi-directional
- Proven reliability

zp 16

Frame size T1	51	81	121
Displacement (cm^3/rev)	50.0	81.5	118.5
Max cont pressure (bar)	200	200	200
Max operating speed* (rpm)	2300	2300	2300
Max operating speed** (rpm)	2100	2000	1600
Input torque at 200 bar (Nm)	158	258	375
Max cont input power (kW)	27	54	71
Weight (kg)	7.2	8.5	12.5

* Unloaded pump (BPV) ** In service 350 bar

Pumps - Fixed Displacement

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 (cm^3/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

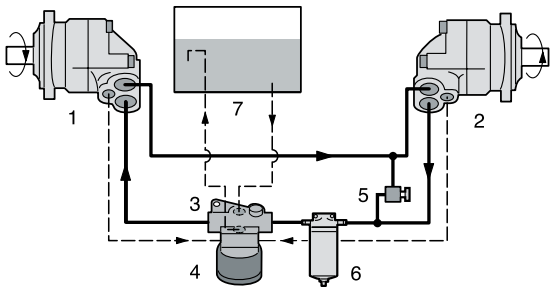
zp 21

Frame size F12	30	40	60	80	90	110	125	150	250
Displacement (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)	3150	2870	2500	2300	2300	2200	2100	1700	1500
Weight (kg)	12	16.5	21	26	26	36	36	70	77

Boost Unit

BLA

The boost unit provides filtration and make-up fluid to replace pump and motor volumetric losses, while maintaining sufficient pump inlet pressure to avoid cavitation. The semi-closed system could be built with a smaller and lighter reservoir at the same time as, the pump speed is possible to increase.The Boost Units BLA are available in two different sizes:
BLA 4 for flow 25–160 litres per minute,
BLA 6 for flow 150–400 litres per minute.



1. Pump
2. Motor
3. Boost unit (with injector and nozzle)
4. Filter cartridge
5. Pressure relief valve
6. Full-flow filter (when required)
7. Reservoir

Pumps - Variable Displacement

Axial Piston

VP1 – Truck

- Intermittent pressure up to 400 bar
- Suitable for all load-sensing systems
- Splined shaft DIN 5462
- Light and compact
- Mounting flange and shaft meet the ISO Standard
- Strong and reliable
- Less energy – less fuel – less heat

zp 16

Frame size* VP1	45	75	95	120
Displacement (cm³/rev)	45	75	95	120
Max cont pressure (bar)	350	350	400	360
Max operating speed (rpm)	2400*	2200*	2200**	1900*
Input power (kW)	63	96	139	137
Weight (kg)	27	27	27	27

* 2 1/2" suction line ** 3" suction line

P2 / P3

- Designed for mobile applications
- High self priming speed
- Unique port layout
- Quiet operation
- Reduced flow and pressure ripple
- Easy to install
- Service friendly

zp 18

Frame size P2	060	075	105	145		P3	105	145
Displacement (cm³/rev)	60	75	105	145			105	145
Max cont pressure (bar)	320	320	320	320			320	320
Max operating speed (rpm)	2800	2500	2300	2200			2600	2500
Weight (kg)	37	44	63	78			62	76

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

P1

- Compact overall package size for easy installation
- Wide range of hydromechanic and electronic control solutions
- Open loop 100% overcenter available (60cc and above) for energy recovery
- Quiet operation (9 piston design, ripple chamber)
- High flexibility by various thru drive options
- Service friendly

zp 04

Frame size P1	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

Directional Control Valves

Constant Flow Valves

Mobile Valves

P70CF

- Section built valve
- A series of spools handling
- Flow up to 80 l/min

F130CF

- Section built valve
- A series of spools handling
- Flow up to 110 l/min

H170CF

- Monoblock valve
- Stackable valve with maximum three valves stacked together

zv 01

Product type	Constant Flow		
Product name	P70CF	F130CF	H170CF
No of sections	10	11	1, 2, 3, 4
Covers [Inlet or Outlet]			
Pump port (bar)	320	320	250
Work port (bar)	350	350	280
Tank port (bar)	20	20	20
Power beyond	x	x	x
Counter pressure	x	x	x
Pilot reducer	x	x	x
Pump protection	x	x	x
Pump unloading	x		x
Pump blocking	x		
Mid Inlet			
Common flow	x	x	(x)
Split flow	x	x	(x)
Sections			
Port reliefs	x	x	x
Main spool	x	x	x
Priority function	x	x	x
Controls			
Manual	x	x	x
Pneumatic	x	x	x
Hydraulic	x	x	x
Electro-hydraulic	x	x	x

Directional Control Valves

Constant Pressure Valves

Mobile Valves

P70CP

Valves for constant pressure system or constant pressure unloaded.
See details in the spreadsheet below.

F130CP

zv 02

Product type	Constant Pressure		Constant Pressure Unloaded	
Compensator Y/N	No Compensator		No Compensator	
Product name	P70CP	F130CP	P70CP	F130CP
No of sections	10	11	10	11
Covers				
Pump flow (l/min)	90	150	90	150
Section flow (l/min)	90	150	90	150
Pump port (bar)	320	320	320	320
Work port (bar)	350	350	350	350
Tank port (bar)	20	20	20	20
Threaded ports	x	x	x	x
Pilot reducer	x	x	x	x
Pump protection	x	x	x	x
Pump unloading	x		x	
Sections				
Port reliefs	x	x	x	x
Main spool	x	x	x	x
Controls				
Manual	x	x	x	x
Pneumatic	x	x	x	x
Hydraulic	x	x	x	x
Electro-hydraulic	x	x	x	x

Directional Control Valves

Load Sensing Valves

Mobile Valves

No Compensator

P70LS

M200LS

F130LS

M402LS

Pre Compensated

L90LS

K220LS

Post Compensated

VP120

VP170

zv 03

Product type	Load Sensing							
Compensator Y/N	No Compensator				Pre Compensated		Post Compensated	
Product name	P70LS	F130LS	M200LS	M402LS	L90LS	K220LS	VP120	VP170
No of sections	10	11	2	2	12	10	10	9
Covers								
Pump flow (l/min)	90	150	400	500	200	400	160	227
Section flow (l/min)	90	110	300	400	125	200	120	190
Pump port (bar)	320	320	350	375	320	330	280	350
Work port (bar)	350	350	400	400	350	350	320	350
Tank port (bar)	20	20	20	20	20	20	15	15
Flanged ports			x	x		x		
Threaded ports	x	x			x	x	x	x
By-pass					x			
By-pass /Power beyond								
Copy spool in inlet					x	x		
Counter pressure			x	x	x	x		
Pilot reducer	x	x			x	x	x	x
Pump protection	x	x	x		x	x	x	x
Pump unloading	x							
Pump blocking					x			
Sections								
Port reliefs	x	x	x	x	x	x	x	x
Main spool	x	x	x	x	x	x	x	x
Boost / Margin control							x	
Force feedback					x	x		
Pressure control					x	x		
Signal lines					x			
Priority function			x	x	x	x		
LS pick up system	x	x	x	x	x	x	x	x
LS compensator spool					x	x		
AS compensator spool					x	x		
Flowsharing compensator spool							x	x
Feed reducer, individuell					x	x		
Feed reducer, common							x	
Through ported valves			x	x				
Controls								
Manual					x		x	x
Pneumatic					x			
Hydraulic	x	x	x	x	x	x	x	x
Electro-hydraulic	x	x	x	x	x	x	x	x
On-board electronics						x		

Directional Control Valves

Subplate Mounted CETOP/NG Style Valves

D1VW

The D1VW is a 3 chamber-, electrically controlled 4/3 or 4/2 way directional control valve. It is activated directly by solenoids with screwed in wet pin armature. The soft shifting of the D1VW soft shift valve is achieved by damping the plunger in the tube with an orifice. The D3W is a 3 chamber-, electrically controlled 4/3 or 4/2 way directional control valve. It is activated directly by solenoids with screwed in wet pin armature.

D3W

D1FB

D1FB OBE

D3FB OBE

zv 04

	Operation			
Valve	Pump Flow l/min	Pressure bar	Solenoid	Remarks
D1VW	80	350	X	Standard, Soft Shift, NG6
D3W	150	350	X	Standard, Soft Shift, NG10
D1FB	20	350	X	Proportional DC Valve, ext. or onboard (OBE) electronics
D3FB	60	350	X	Proportional DC Valve, ext. or onboard (OBE) electronics
Subplates				CETOP 03/05, NG06/10

Bankable Mini Valves

SMV6

Series SMV6 is a bankable valve with 3- or 4-way, 2 or 3 positions valves. On mobile machines there is a need for valves with low flow functions. Auxiliary functions such as parking breaks, pilot pressure feed, accumulator charging etc. can be solved with this type of valve. SMV6 offers a number of different functions that can be stacked together in a valve package to reduce space. All functions have common tank and pressure ports. It is also possible to fit a plug in between two functions to create 2 separate systems.

zv 05

	Operation			
Valve	Pump Flow l/min	Pressure bar	Solenoid	Remarks
SMV6	11	210	X	3- and 4-way, 2 and 3 positions

Remote Control Systems

Pneumatic

VP04

The VP04 is a pneumatic pilot valve for the proportional remote control of directional control valves, positioning cylinders, etc. Either linear or joystick lever versions of the VP04 are available. All connections are furnished with couplings of the plug-in type.

zr 21

System Type	Pneumatic Pilot Pressure	
Control pressure range	0–8 bar	
Control flow	max 7 Nl/s	
Control curves with straight characteristics	X	
Friction brake for retention in any position	X	
Mechanical end-position detent	X	

Hydraulic

PCL4

The PCL4 is a hydraulic pilot valve for the proportional remote control of directional control valves, pumps, motors, etc. It is available with joystick lever-units, as well as linear units for hand or foot control.

zr 11

System Type	Hydraulic Pilot Pressure	
Control pressure range	1–75 bar	
Control flow	max 15 l/min	
Max supply pressure	100 bar	
Individual control characteristics for each direction	X	
Selectable start and final pressures	X	
Selectable lever force	X	
Curves with straight characteristics	X	
Curves with two-step characteristics	X	
Curves with forced opening (final step)	X	
Friction brake for retention in any position	X	
Mechanical or solenoid end position detent	X	

Electrohydraulic

PVC6

Series PVC6 is a bankable valve assembly used for remote control of directional control valves. The proportional three-way pressure reducing valve creates a pressure proportional to the inlet current. Solenoids are available for 12 and 24 Volt system. The inlet section can be equipped with a pressure reducing valve to protect the control sections.

zr 02

Remote Control Systems

Electronic units

IQAN

The state-of-the-art IQAN system is a unique, totally electronic approach that replaces mechanical and electromechanical systems for controlling and monitoring hydraulics in mobile machines. With Parker's IQAN, you have complete freedom to design customized software without the need for advanced programming skills.

The flexible functions available within the IQAN system allow sophisticated applications to be programmed and optimized very quickly, enabling huge savings on development time – and cost. The IQAN software tools cover all phases of a machine's life cycle, from development through production to after sales.

Functional safety
The robust hardware, built in error-detection and the high-level development tool IQANdesign, are important factors that reduce the risk of dangerous faults in the machine.

For applications with high demands on safety function, such as overload prevention or wheel steering, the IQAN-MC3 is the state-of-the-art choice. The IQAN-MC3 is a controller developed in accordance with IEC 61508, for safety functions requiring up to SIL2.

Components

Remote diagnostics
When a modem is fitted to the machine, it allows for remote diagnostics with the same powerful diagnostic features as when connected locally.


zr 01

System Types	IQANdesign platform
CANbus Master	IQAN-MD4, IQAN-MD3, IQAN-MC2, IQAN-MC3
CANbus Modules	IQAN-XA2, IQAN-XS2, IQAN-XS3, IQAN-XT2, IQAN-XC10, IQAN-G2
CANbus Joysticks	IQAN-LC5-C01, IQAN-LM
Analog Joysticks	IQAN-LC6, IQAN-LSL, IQAN-LST, IQAN-LF1, IQAN-LC5-X05
Sensors	IQAN-SP035, IQAN-SP500, IQAN SENSORS

IQAN Software tools

The IQAN software studios cover all phases of a machine's life cycle, from development through production to after sales. The main philosophy behind the IQAN Software Studios is that the OEM, with their extensive knowledge of their machine's life cycle, should be able to create software that makes their product perform at top level, easy to produce and giving the end user maximum up-time. All this can be achieved without any previous programming experience – anyone who knows what functions are needed can learn to build them in a remarkably short time.

IQANdesign - Development tool for application software
IQANsimulate - For simulation during development, but also for training of service technicians and operators
IQANrun - Service tool, used both in production line and as a powerful diagnostic tool for field service
IQANscript - Scripting of IQANrun operations for production and field service
IQANcustomize - Enhance the look and feel of the service tool IQANrun, to make it OEM specific.

Auxiliary Valves - Threaded Cartridge Valves

Directional Control Valves

zv 40
HY15-3502/USA/EU

Valve Type	Max Working Pressure (bar)	Flow Capacity (l/min)	
Manual valves	240	50	
Manual three-way valves	240	25	
Manual four-way valves	240	8	
Pilot operated valves	240	40	
Solenoid, poppet-type, two-way valves	345	265	
Solenoid, poppet-type, bi-directional valves	345	20	
Solenoid, spool-type, two-way valves	345	75	
Solenoid, spool-type, three-way valves	345	65	
Solenoid, spool-type, four-way valves	345	30	
Double solenoid, spool-type, four-way valves	345	25	

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	150	
Solenoid operated, two-way NC throttle valves	207	20	
Solenoid operated, proportional pressure reducing valves	207	40	
Solenoid operated, three-way, proportional pressure control valves	207	11	

Auxiliary Valves - Threaded Cartridge Valves

Load Holding Valves


zv 42

Valve Type	Max Working Pressure (bar)	Flow Capacity (l/min)	
Counterbalance valves	345	0–750	
Check valves	345	0–375	
Soft seat check valves	207	0–60	
Vent-to-open check valves	240	0–225	
Pilot-to-close check valves	240	0–150	
Single pilot operated check valves	207	0–190	
Double pilot operated check valves	207	0–190	
Shuttle valves	240	0–25	

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	0–150	
Cross-over relief valves	240	240	0–75	
Dual relief with anti-cavitation checks	345	345	0–60	
Pilot operated relief valves	345	345	0–375	
Pressure sensing valves	345		0–190	
Reducing/relieving valves	345	345	0–150	
Direct acting pressure reducing valves	345	345	0–60	
Pressure reducing valves	345	345	0–60	
Pressure reducing spools	345		0–19	
Sequence valves	345	345	0–150	
Unloading relief valves	240	207	0–6	
Logic elements	250	250	0–19	
Thermal relief	250	250	0–30	

Flow Control Valves


zv 44

Valve Type	Max Working Pressure (bar)	Max Flow Setting (l/min)	Flow Capacity (l/min)	
Needle valves	240		0–190	
Rotary adjust needle valves	240		0–60	
Flow divider/combiner valves	207		0–45	
Pilot control flow control valves	207		0–60	
Flow control valves	240		0–45	
Restrictive-type, pressure compensated valves	240		0–150	
Priority-type, pressure compensated valves	240	0–40	0–60	
Restrictive-type, pressure compensated flow regulator valves	240		0–60	
Priority-type, pressure compensated flow regulator valves	240	0–35	0–60	
Priority-type, pressure compensated flow regulator with relief	240	0–35	0–60	
Velocity fuses	207		0–30	

Auxiliary Valves

Threaded Cartridge Valves

Directly controlled pressure relief valves with anti-cavitation function. The valves have good pressure characteristics together with very short reaction times. They are compact, tight, reliable and not sensitive to contamination.

zv 21

Valve Type	Max Working Pressure bar	Max Setting Pressure bar	Flow Capacity l/min
Pressure relief valves	600	25-550	0-350

Auxiliary Valves

Parker's stackable selector valve is operated by a wet pin solenoid. The valve is capable of switching from one circuit to another at a variety of flows and pressures. If more than two circuits are to be controlled then additional units can be stacked together. Alternatively, the valve can be connected to a pump and used to direct the flow to either one of two different circuits.

- Stackable
- Reduce pipe work
- Reduce number of fittings
- Reduce number of directional control valves spool sections

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

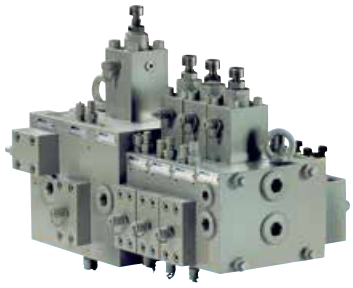
zv 21

Valve Type	Max Working Pressure bar	Flow Capacity l/min	
Stackable, 2-position, 4-way, solenoid operated, circuit selector control valves	210	40	
Pressure reducer valve	250	25	
Sequence valve	250	25	
Shuttle valve	250	20	

Hydraulic Manifold Blocks

Hydraulic Manifold Blocks are designed to meet the many demands on mobile hydraulic equipment. Manifold blocks offer you the following benefits:

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



Manifold blocks can be flanged to one or more directional valves as well as to pumps, cylinders, motors and filters. Some cartridge valve products offered by Parker include:

- Directional Control Valves
- Logic Elements and Flow Controls
- Pressure Controls
- Proportional Valves
- Powershift Transmission Controls
- Load Holding Valves

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

When you need finished integrated hydraulic circuits with extremely short lead times, the Parker 'Speed Shop' is the place to go. Parker's expert application engineers along with the latest computer-aided design technology can bring advanced new custom products to market faster. The solution to your problem is only minutes away when Parker's Quick Design proposals and quotes that are created using 3D CAD. Once the design is finalized, the 'Speed Shop' process is further streamlined by utilizing electronic communications and approvals. When design specifications meet customer requirements, Parker's CAD linked prototype machining produces fully functional hydraulic integrated circuits. All prototypes are fully tested and documented before being released to production. In today's highly competitive market, speed and quality are critical for success.

zv 22

SAE Flange Valves

SAE flange connections are the standard in hydraulic systems. In many cases there is a huge advantage to mount components such as pressure relief valves or check valves directly on the outlet flange of pumps or the inlet flange of actuators. Additionally the Parker flange-mounted product range offers the possibility to build complete functions or systems with standard components. Pressure, flow, check and directional seat valves with SAE flange:

- Compact and space-saving solutions
- Leakage prevention
- Easy mounting and reduced piping
- Modular concept of control units
- All hydraulic standard functions can be achieved

zv 23

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

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DVD Catalogue

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