



Truck
Hydraulics
Innovative Products and
System Solutions

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Parker Hannifin Corporation

Parker Hannifin is a Fortune 500 corporation listed on the New York Stock Exchange as PH. Parker is the leading global company in manufacturing with the widest variety of components and systems designed to control motion, flow and pressure in all types of machinery and other equipment.



We offer over 3,200 product lines that control motion in 1,220 mobile, industrial and aerospace markets. Parker is the only manufacturer to offer its customers a choice of hydraulic, pneumatic, electromechanical, and computer motion control solutions. And we have the largest distribution network in our field, with over 8,200 distributors serving more than 400,000 customers worldwide.

Parker products are found everywhere: in orbiting satellites, machine tools, truck equipment, hospitals and laboratories, oil rigs and refineries... anywhere machines depend on motion or fluid control.



Dedication to the truck industry

The Parker Hannifin Corporation is the most dynamic hydraulics motion and control components and solutions provider in the truck industry. Parker hydraulics technology and components, including Chelsea product offerings, makes Parker the leading choice to fill your heavy-duty truck needs.

With our qualified factory support and network of distribution, being your single source supplier for components, kits and solutions has never been easier. Our truck hydraulics, market-focused staff is ready to assist you with application expertise, innovative designs and state-of-the-art manufacturing and engineering technology.

Total systems capability makes Parker Hannifin today's complete supplier. Our customers can reduce their number of vendors without compromising quality, and buying from a single source saves both time and money.

www.parker.com/eu

Parker's extensive web site offers a wealth of product information and other useful resources. It is the industry's most comprehensive site and includes technical product data, downloadable catalogs, 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.

Truck Hydraulics

Fluid Power/Truck Focus

Although Parker serves many industries including Aerospace, Construction, Agriculture, Mining, Automotive, Refrigeration, etc., we are exclusively concentrated on controlling fluid motion and pressure. We have created a market-focused hydraulics truck team to focus solely on the needs of the customers in various vocational truck markets.



Total Systems From the Ground Up

Parker will assist you to determine your component(s) and/or systems requirements and help design a solution. We have the ability to capture exact system details through our high levels of data acquisition.

Parker's staff of highly qualified engineers – application engineers, research and development teams, and system solution specialists, assures you that nobody knows truck hydraulic applications and products better than Parker.

Parker's extensive breadth of product line allows for unlimited solution possibilities. Our worldwide network manufacturing and distribution facilities ensures quick deliver of your engineered solution, from components to kits to entire system solutions.

Manufacturing

Parker continues to invest in our world class ISO 9001 certified manufacturing facilities. Our factories are equipped with the most modern technology to meet the demands of both quality and delivery. Our manufacturing is backed by a highly qualified engineering staff, working with today's latest tools and technology. This investment ensures that we maintain control of the manufacturing process and components, as well as the ability to look forward to new design ideas and solutions. Our truck hydraulic components are core to our business and investments. We do not outsource our components and solutions – we manufacture them.



Parker's Value Proposition

Parker is the leading hydraulics supplier worldwide. We have a powerful reputation, unparalleled breadth of products, and world-class customer service. However, Parker's greatest distinguishing benefits can be found in its Value Proposition. Parker believes that it takes more than our great products, competitive prices, and on-time delivery to satisfy customer demands. It takes a commitment to provide exceptional value.

At Parker, value is not a commodity. It is the result of personal relationships built around the customer's use of Parker's extensive resources. Our customer services include:

- **Truck Analysis and Troubleshooting**
- **Design-Engineering Support**
- **System Design**
- **Components Selection**
- **New Product Development**
- **Custom-Component Manufacturing**
- **Assemblies and Kits**
- **Sub-System Configuration**
- **Global Support and Service**
- **ISO Certification**

Value Added Programs

Premier Customer Service

Parker's Premier Customer Service leads the industry in response. In addition to assured product quality, Parker provides engineering assistance, 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 truck hydraulics field sales force provides knowledgeable assistance to your product and system requirements, working hand in hand with your local Parker distributor. These experts are strategically located throughout the world.



Kitting

In those instances where you require multiple components and sub-assemblies for a specific application, Parker offers the added benefit of a Kitting Service. Within a kit, everything you need is delivered in one convenient package, ready for installation.



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 a practical approach to training, stressing active participation to increase students' confidence and understanding of motion control technology.

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 | 050 | 060 | 070 | 080 | 100 |
|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|
| Displacement (cm ³ /rev) | 16 | 19 | 23 | 29 | 36 | 41 | 46 | 50 | 60 | 70 | 80 | 100 |
| Max. cont. pressure (bar) | 270 | 260 | 250 | 240 | 230 | 210 | 200 | 300 | 280 | 240 | 200 | 170 |
| Max. operating speed (rpm) | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 | 2000 |
| Weight (kg) | 6.0 | 6.3 | 6.7 | 7.1 | 7.5 | 7.8 | 8.1 | 13.1 | 13.6 | 14.1 | 15.2 | 16.5 |

Vane – SAE Single



- 275 bar max pressure for T6CM, 240 bar for T6DM & T6EM
- Silent technology
- 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)
- Drive train options available (SAE A, SAE B or SAE C)



zvp 01

DENISON Hydraulics

| 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. 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. 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. 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. 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



- Low noise
- SAE or ISO standards
- One piece shaft (no internal torque limitations)
- One inlet
- 32 porting orientations available
- Wide displacement possibility (from 10.8 to 227.1 cm³/rev) per stage with a max. displacement of 454.2 cm³/rev
- Displacement combinations with above T6CM, T6DM & T6EM charts
- High power to weight ratio
- Wide range of options available – different shafts, threads, pilots

Triple



- Low noise
- One inlet
- 128 porting orientations available
- Many displacement combinations (from 10.8 to 227.1 cm³/rev) per stage with a max. displacement of 552 cm³/rev
- One piece shaft (no internal torque limitation)
- High power to weight ratio

Vane 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



DENISON Hydraulics

| 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. operating speed ¹⁾ (rpm) | 2800 | 2800 | 2800 | 2800 | 2800 | 2800 | 2800 | 2800 | 2800 | 2800 | 2500 | 2500 | 2500 |
| 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 | | | | | | |

1) Shaft speed for petroleum based fluids, please contact Parker

2) 1500 rpm at 240 bar

Vane – Hybrid Double & Triple



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

Vane – Cardan Shaft Double – T6CCZ



- High radial & axial load capabilities
- 3 different keyed shafts available
- One inlet
- Displacements – on P1 from 10 to 100 cm³/rev & P2 from 10 to 100 cm³/rev
- Pressure: up to 275 bar on P1 & P2

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



- Intermittent pressures up to 400 bar
- Twin Flow/Dual displacement
- High power capability
- High shaft speed
- Easy to install
- Smart System Solutions
- Proven reliability

zp 16



| Frame size F2 | 53/53 | 70/35 | 55/28 | 42/42 |
|-------------------------------------|-------|-------|-------|-------|
| Displacement (cm ³ /rev) | 54/52 | 69/36 | 55/28 | 42/42 |
| Max. cont. pressure (bar) | 350 | 350 | 350 | 350 |
| Max. operating speed* (rpm) | 2550 | 2550 | 2550 | 2550 |
| Max. operating speed** (rpm) | 1800 | 1800 | 1800 | 1800 |
| Input torque at 350 bar (Nm) | 589 | 583 | 467 | 471 |
| Max. cont. input power (kW) | 88 | 88 | 70 | 70 |
| Weight (kg) | 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 | 1800 |
| 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

Axial Piston

F11



- Very high self-priming speeds
- Pressures up to 420 bar
- Efficient (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 | 150 | 250 |
|-------------------------------------|------|------|------|------|------|-------|-------|
| Displacement (cm ³ /rev) | 4.9 | 9.8 | 12.5 | 14.3 | 19.0 | 150.0 | 242.0 |
| Max. cont. pressure (bar) | 350 | 350 | 350 | 350 | 350 | 350 | 350 |
| Max. operating speed** (rpm) | 4600 | 4200 | 3850 | 3500 | 3500 | 1700 | 1500 |
| Weight (kg) | 5 | 7.5 | 8.2 | 8.3 | 11 | 70 | 77 |

* Use F12 for medium range displacement

** Unloaded pump (BPV)

F12



- Very high self-priming speeds
- 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 |
|-------------------------------------|------|------|------|------|------|-------|------|
| Displacement (cm ³ /rev) | 30.0 | 40.0 | 59.8 | 80.4 | 93.0 | 110.1 | 125 |
| Max. cont. pressure (bar) | 420 | 420 | 420 | 420 | 350 | 420 | 420 |
| Max. operating speed* (rpm) | 3150 | 2870 | 2500 | 2300 | 2250 | 2290 | 2100 |
| Weight (kg) | 12 | 16,5 | 21 | 26 | 26 | 36 | 36 |

* Unloaded pump (BPV)

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.

zp 21



Axial Piston

VP1



- Intermittent pressures up to 350 bar
- Suitable for all load-sensing systems
- Shaft end and mounting flange meet the ISO standard for all sizes
- Light and compact
- Strong and reliable
- Less energy – less fuel – less heat



zp_16

| Frame size* VP1 | 45 | 75 | 120 |
|-------------------------------------|------|------|------|
| Displacement (cm ³ /rev) | 45 | 75 | 120 |
| Max. cont. pressure (bar) | 300 | 300 | 300 |
| Max. operating speed (rpm)* | 2400 | 2100 | 1800 |
| Input power (kW) | 60 | 100 | 125 |
| Weight (kg) | 27 | 27 | 26.9 |

* 2 1/2" suction line

Vane

Fan - M5



- Heavy duty bearing
- Low mechanical losses
- Integrated valves possible (anti cavitation check, proportional pressure relief valve, etc.)
- Low noise
- Bi-rotational technology
- Internal or external drain possible with the uni-rotational option

zvp 01



DENISON Hydraulics

| Frame size M5AF | 006 | 010 | 012 | 016 | 018 | 025 | M5BF | 012 | 018 | 028 | 036 | 045 |
|--|------|------|------|------|------|-------|------|------|------|-------|-------|-------|
| Displacement (cm ³ /rev) | 6.3 | 10.0 | 12.5 | 16.0 | 18.0 | 25.0 | | 12.0 | 18.0 | 28.0 | 36.0 | 45.0 |
| Max. cont. pressure (bar) | 300 | 300 | 300 | 300 | 300 | 280 | | 290 | 290 | 290 | 290 | 260 |
| Max. operating speed ¹⁾ (rpm) | 4000 | 4000 | 4000 | 4000 | 4000 | 2500 | | 4000 | 4000 | 2500 | 2500 | 2500 |
| Max. output torque ²⁾ (Nm) | 26.1 | 43.8 | 55.7 | 72.4 | 82.0 | 107.5 | | 50.6 | 81.2 | 132.1 | 172.8 | 190.0 |
| Output power ³⁾ (kW) | 5.5 | 9.1 | 11.7 | 15.1 | 17.1 | 22.5 | | 10.6 | 17.0 | 27.7 | 36.2 | 39.8 |
| Weight (kg) | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | 15.0 | | 18.5 | 18.5 | 18.5 | 18.5 | 18.5 |

1) Max. shaft speed at max. pressure

2) Output torque at 24 cSt, 320 bar for M5BF, 300 bar for M5AF

3) Output power at 24 cSt 2000 rpm, 300 bar M5AF, 320 bar M5BF

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 H and V (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 H and V (kg) | 9.1 | 9.4 | 9.6 |

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 L and H (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 |

Gerotor TK



- High volumetric efficiency
- Long life
- Flow through internal spline and shaft seal cooling
- High pressure shaft seal
- High starting torque
- High side load capacity

zm_08



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

Axial Piston F1



- Intermittent pressures up to 350 bar
- Shaft end and mounting flange meet the ISO standard for all sizes
- Very low weight
- Easy to install, compact design
- High overall efficiency

zp_16



| Frame size F1 | 25-M | 41-M | 51-M | 61-M | 81-M | 101-M | 121-M |
|-------------------------------------|------|------|------|------|------|-------|-------|
| Displacement (cm ³ /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
- Pressures up to 420 bar
- Efficient (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 | 150 | 250 |
|-------------------------------------|-------|-------|------|------|------|-------|-------|
| Displacement (cm ³ /rev) | 4.9 | 9.8 | 12.5 | 14.3 | 19.0 | 150.0 | 242.0 |
| Max. cont. pressure (bar) | 350 | 350 | 350 | 350 | 350 | 350 | 350 |
| Max. operating speed (rpm) | 12800 | 10200 | 9400 | 9000 | 8100 | 3200 | 2700 |
| Output torque at 100 bar (Nm) | 7.8 | 15.6 | 19.8 | 22.7 | 30.2 | 238 | 384 |
| Weight (kg) | 5 | 7.5 | 8.2 | 8.3 | 11 | 70 | 77 |

* Use F12 for medium range displacement

F12



- Very high operating speeds
- 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 |
|-------------------------------------|------|------|------|------|------|-------|------|
| Displacement (cm ³ /rev) | 30.0 | 40.0 | 59.8 | 80.4 | 93.0 | 110.1 | 125 |
| Max. cont. pressure (bar) | 420 | 420 | 420 | 420 | 350 | 420 | 420 |
| Max. operating speed (rpm) | 6700 | 6100 | 5300 | 4800 | 4600 | 4400 | 4200 |
| Output torque at 100 bar (Nm) | 47.6 | 63.5 | 94.9 | 128 | 148 | 175 | 198 |
| Weight (kg) | 12 | 16.5 | 21 | 26 | 26 | 36 | 36 |

Hand Pump Series 700 With Built-in 4-way Valve



- Pressures up to 175 bar
- 8.2 cm³/stroke
- Operating Range: -40 to +70 °C (Depending on Fluid Used)
- Very Compact Size
- Excellent Backup Power Supply
- Up to 61 cm Handle Available

zu 04



Series 108



- AC or DC motor
- 4 pump sizes – up to 3 litres/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 V DC electric motor
- 3 pump sizes (0.52, 0.82 and 1.06 cm³/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 up 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

zu 02



Allison World Transmissions Power Take-Offs



267



- Constant Mesh (non-shiftable) P.T.O. ideal for applications requiring continuous power
- Five speed ratios and ten output options
- SuperTorque™ gears available for 20 % higher intermittent torque ratings
- No backlash to adjust

zpto_01



| Series 267 | B | D | G | M | S | SB* | SD* | SG* | SM* | SS* | * SuperTorque™ |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|
| Standard Output Shaft Size | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | |
| Intermittent Torque Rating (Nm) | 325 | 325 | 300 | 265 | 250 | 545 | 529 | 488 | 431 | 359 | |
| Power Rating for Intermittent Service: at 500 rpm of Output Shaft | 24 | 23 | 21 | 19 | 18 | 29 | 28 | 26 | 23 | 19 | |
| at 1000 rpm of Output Shaft (kW) | 48 | 46 | 43 | 38 | 36 | 57 | 56 | 51 | 45 | 38 | |

277



- Exceeds the torque capacity of a 6-bolt P.T.O. while offering the tighter sealing of a 10-bolt pattern
- Five speed ratios and ten output options
- SuperTorque™ gears available for 20 % higher intermittent torque ratings
- Electronic Overspeed Control available to protect driven equipment from overspeeding

| Series 277 | B | D | G | M | S | SB* | SD* | SG* | SM* | SS* | * SuperTorque™ |
|--|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|
| Standard Output Shaft Size | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | 1¼" | |
| Intermittent Torque Rating (Nm) | 454 | 441 | 407 | 359 | 339 | 545 | 529 | 488 | 431 | 359 | |
| Power Rating for Intermittent Service: at 500 rpm of Output Shaft | 24 | 23 | 21 | 19 | 18 | 29 | 28 | 26 | 23 | 19 | |
| at 1000 rpm of Output Shaft (kW) | 48 | 46 | 43 | 38 | 36 | 57 | 56 | 51 | 45 | 38 | |

859



- Highest torque capacities of any P.T.O. offered for the Allison World transmissions
- P.T.O. Torque ratings from 386 to 780 Nm
- Electronic Overspeed Control available to protect driven equipment from overspeeding
- Advanced gear design for increased tooth-contact ratio for quieter operation

| Series 859 | G | J | M | R | S | T | W |
|--|--------------------------------|-----|-----|-----|-----|-----|-----|
| Standard Output Shaft Size | 1½" 10 spline with 1410 flange | | | | | | |
| Intermittent Torque Rating (Nm) | 780 | 712 | 664 | 563 | 522 | 475 | 386 |
| Power Rating for Intermittent Service: at 500 rpm of Output Shaft | 41 | 37 | 35 | 30 | 27 | 25 | 20 |
| at 1000 rpm of Output Shaft (kW) | 82 | 75 | 70 | 59 | 55 | 50 | 41 |

867



- Constant Mesh (non-shiftable) P.T.O. ideal for applications requiring continuous power
- Four speed ratios and five output options
- Torque ratings from 475 to 780 Nm

| Series 867 | G | M | R | T |
|--|--------------------------------|-----|-----|-----|
| Standard Output Shaft Size | 1½" 10 spline with 1410 flange | | | |
| Intermittent Torque Rating (Nm) | 780 | 664 | 563 | 475 |
| Power Rating for Intermittent Service: at 500 rpm of Output Shaft | 41 | 35 | 30 | 25 |
| at 1000 rpm of Output Shaft (kW) | 82 | 70 | 59 | 50 |

Powershift ("Shift-on-the-go") Power Take Offs



230/231



- Optional Internal Self-Adjusting Shaft Brake
- Electric-over-air shifting
- 231 offers low profile housing for avoiding clearance problems
- Pressure lubrication option available for both units

zpto_01



| Series 230/231 | 230 ¹⁾ A,B,D,K & Q | 230 ²⁾ A,B,D,K & Q | 231 ¹⁾ A,B,D,K & Q | 231 ²⁾ A,B,D,K & Q |
|--|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Standard Output Shaft Size | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" |
| Intermittent Torque Rating (Nm) | 407 | 339 | 339 | 305 |
| Power Rating for Intermittent Service: at 500 rpm of Output Shaft | 21 | 18 | 18 | 16 |
| at 1000 rpm of Output Shaft (kW) | 43 | 36 | 36 | 32 |

¹⁾ With Pressure Lube ²⁾ With Standard Lube

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 P.T.O. service life
- Inspection cover for adjusting backlash

| Series 236 | D,K & Q | U |
|--|---------|--------|
| Standard Output Shaft Size | 1 1/4" | 1 1/4" |
| 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 | 1 1/4" | 1 1/4" | 1 1/4" |
| 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

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
- Now available on the Allison 1000, 2000/2400 Transmissions

| Series 442 | A | C | F | H | L | Q | R | S | U | W | X |
|--|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Standard Output Shaft Size | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" | 1 1/4" |
| 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 |

Mechanical 6 & 8 Bolt Power Take-Offs

CHELSEA®

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 |

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 P.T.O.

| Series 800 | B | D | G | J | M | Q | R | T |
|--|--------------------------------|-----|-----|-----|-----|-----|-----|-----|
| Standard Output Shaft Size | 1½" 10 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 |

Split Shaft Power Take-Offs

941



- Smaller version of the 912 Series with two six 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
- Several 6-Bolt and Reversible P.T.O.s will fit on the 912 Series

| Series 941 | 941 | |
|---|----------------|-----------|
| Standard Output Shaft Size | 2 ¾" 10 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 |

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 P.T.O.s fit the 912 Series
- Air and Lever shift available

| Series 912 | 912 | |
|--|----------------|---------|
| Standard Output Shaft Size | 1 ½" 12 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

522



- **Designed for ZF, Eaton and Iveco transmissions**
- **Direct mount pump flanges available**
- **Installation is quick and easy**

CHELSEA®

zpto_01



| Series 522 | T | V |
|--|------------------|------------|
| | Rear Mount | Rear Mount |
| Standard Output Shaft Size | 1-1/4" [31.75mm] | Keyed |
| Intermittent Torque Rating (Nm) | 350 | 350 |
| Power Rating for Intermittent Service At 500 rpm of the Output Shaft (kW) | 18 | 18 |
| At 1000 rpm of the Output Shaft (kW) | 37 | 37 |

Parker PTO's

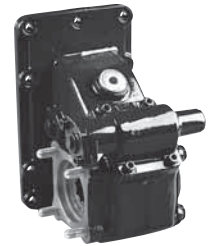
Parker's power take-off units are designed to meet the requirement of the majority of today's truck applications. The PTO range covers a great many trucks and is being continually updated to fit new gearboxes. The PTO's are used in a variety of applications such as Tippers, Hook Loaders, Skip Loaders and Cranes, and are specifically designed to close-couple pumps with the current ISO-Standard mounting flange. Alternatively, the units can be fitted with our cardan shaft adaptor to enable them to be used for a wide range of propshaft driven applications.

- **Tailor made for the Parker Truck Hydraulics pumps**
- **Possibility to close-couple any ISO-standard pump**
- **Shaft-driven adaptor for other applications**
- **Competitively priced**
- **Easy to install**
- **Electrical indicator available on latest PTO's.**

Parker can, with its range of PTO units, the F1, F2, T1 and VP1 truck pumps and a great number of accessories, offer the total truck hydraulic package. Parker have become synonymous with extraordinary quality. Many body builders and chassis manufacturers now include our products as a standard part of their programme.



VOLVO



SCANIA



RENAULT



ZF



MERCEDES-BENZ



IVECO

zpto_01



Directional Control Valves

VO40



Directional control valves known for good manoeuvrability and high performance. Section-built for maximum flexibility and integrated functions to simplify the machine layout.

Valves for all types of systems such as open centre, closed centre and load sensing are available. The valves can be adapted to a wide range of application with different level of demands. This is just a selection of our wide range of valves.

Parker valves can be obtained with a large number of optional components and mountings such as:

- Options for variable or fixed pumps displacement
- Pump unloading with blocked pump channel for emergency stop
- For single or multi-pump operation
- For single or multi-valve operation
- Counter pressure valve
- Pressure relief valve
- Port relief valves with anti cavitation function
- Anti cavitation valves
- Application adapted spools
- Load hold check valve
- Port specific force feedback
- Sections with pressure compensators

(Options vary for different valves)

P70CF/P70LS



F130CF



L90LS



zv 01

| Valve | Pump Flow l/min | Pressure bar | Operation | | | |
|--------|--------------------|-----------------|-----------|-----------|-----------|-----------------------|
| | | | Manual | Pneumatic | Hydraulic | Electro- hydraulic |
| VO40 | 40 | 300 | X | X | X | X |
| P70CF | 70 | 350 | X | X | X | X |
| P70LS | 90 | 350 | | | X | X |
| F130CF | 110 | 320 | X | X | X | X |
| L90LS | 200 | 320 | X | X | X | X |

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.

Principal applications include the proportional remote control of pneumatic spool-actuators and positioning cylinders in mobile or industrial hydraulic systems.

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.

The PCL4 is intended primarily for the remote control of hydraulically operated spool actuators and pump regulators in all kinds of mobile and industrial applications.

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 pressure reducing valve creates a pressure proportional to the inlet current. Solenoid Coil Voltage is available in 12 or 24 Volt. The inlet section can be equipped with a pressure reducing valve to protect the control sections (max inlet pressure to control section is 50 bar).

zr 02



Electronics



IQAN

IQAN is a state-of-the-art system, developed by Parker, for electronically controlling and monitoring hydraulics in mobile machines. IQAN communicates with other systems in the machinery, such as diesel engines and transmission systems. IQAN-MDM and IQAN-MDL display data from

these systems and allow control of them. IQAN is user-programmable via a high level graphical design tool, which dramatically simplifies development. Simulation of the control system takes place in parallel with the programming of machine functions. All hardware in IQAN's wide range of products meets the standards set for mobile applications, such as extreme temperatures, vibrations, mechanical impact, electro-magnetic interference, etc. IQAN's major benefits are:

- Mobility:** Hardware designed and tested for mobile hydraulic equipment.
- Simplicity:** Implement complex machine functionality without specialized programming knowledge.
- Time to Market:** IQAN's simple programming environment and modular hardware reduces development time.
- Machine Management:** IQAN has the software tools to benefit the entire life cycle of a machine. This allows you to reduce cost from design through after sales support.



zr 01

| System Types | IQANdevelop platform | IQANdesign platform |
|---|--|--|
| CANbus Master CANbus Modules CANbus Joysticks | IQAN-MDM IQAN-XP, IQAN-XS, IQAN-XP2, IQAN-XT2 IQAN-LL, IQAN-LM | IQAN-MDL IQAN-XA2, IQAN-XS2, IQAN-XT2 IQAN-LL, IQAN-LM |
| Stand-alone Controls | IQAN-TOC8, IQAN-TOC2 | |
| Analog Joysticks Sensors | IQAN-LSL, IQAN-LST, IQAN-LF1, ICL4, ICM4 IQAN-SP035, IQAN-SP500 | |

Components



System Concept



IQANdevelop

An expandable modular control system with software tools to add modules and build functionality

Stand Alone Concept



IQANdevelop

Task oriented control system with software tools to build functionality

Advanced System Concept



IQANdesign

An advanced expandable modular control system with software tools to add modules and build functionality and simulate



zv_40

HY16-8167/UK/DE/FR/IT

Directional Control Valves

| 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 | 225 |
| Solenoid operated, two-way NO proportional pressure control valves | 207 | 150 |
| Solenoid operated, two-way NC throttle valve | 207 | 20 |
| Solenoid operated, proportional pressure reducing valves | 207 | 40 |
| Solenoid operated, three-way, proportional pressure control | 207 | 11 |

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 | | 0-190 |
| Sequence valves | 345 | 345 | 0-150 |
| Unloading relief valves | 240 | 207 | 0-6 |
| Logic elements | 250 | 250 | 0-190 |
| Thermal Relief | 250 | 250 | 0-30 |

Volume 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 | 500 | 25-500 | 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 |



Cartridge Valve Systems (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](#)



Mobile Actuators

Multi-stage, Double-acting Telescopic With Mechanical Plunger and 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.

Multi-stage, Single-acting Telescopic



- **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

MWA/MWB & HC20 Single Stage Cylinder



Double-sided Steering Cylinder



zc 01, zc 03



| Cylinder | Cyl. Bore Ø mm | Pressure bar | Max Stroke mm | Load Holding Valves | Optional Seal Types | Position Switches | Customized Variants |
|----------|-------------------|-----------------|------------------|------------------------|------------------------|----------------------|------------------------|
| MWA | 50-200 | 250 | 4000 | X | X | X | X |
| MWB | 32-200 | 160 | 4000 | X | X | X | X |
| HC20 | 25-200 | 160 | 2800 | X | X | X | X |

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



Parker's comprehensive range of CE approved piston accumulators maintains high pressure for safe braking and manoeuvring. Ride control and load/boom damping systems enhance productivity and improve the operator's environment, while greater system efficiency and reduced pump sizes give longer life with lower whole-life costs.



A Series

- Standard capacities from 0.1 to 76 litres
- 250 bar and 350 bar operating pressures
- Bore diameters from 50 mm to 200 mm
- Seal compounds to suit all standard fluids and operating temperatures

za 01



ACP Series

- Standard capacities from 0.08 to 0.95 litres
- Up to 275 bar operating pressures
- 40 mm and 50 mm bore diameters
- Rechargeable or sealed-for-life designs
- High strength crimped construction

za 03



ADE Series Diaphragm Accumulators

- 11 standard capacities from 0.075 litres to 3.5 litres
- Up to 250 bar maximum working pressure depending on model
- Nitrile and epichlorohydrine bladder compounds for operating temperatures from -30°C to +80°C
- Flow rates up to 60 l/min
- BSPP threaded ports as standard; other thread forms available to order
- Meet conformity assessment procedures of PED 97/23/EC

za 07



Accumulator Charging Kits and Mounting Accessories



- Charging and gauging equipment
- Gauge adapters and assemblies
- Mounting clamps and base brackets
- U-bolt mounting assemblies
- Accumulator repair tools

za 01



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.

- Various mounting configurations
- High capacity/high efficiency Microglass III media and 'e' series environmentally friendly media options
- Visual and electrical indicators with several connector styles
- Tank mounted and in-tank models
- Integral indicator options

Low Pressure



zf 01



| Model | Max Flow Rate (l/min) | Max Pressure (bar) | Mounting Style |
|----------------|-----------------------|--------------------|--------------------------------|
| Suction Return | 250 | 10 | Tank Top |
| TTF Series | 500 | 10 | Tank Top |
| ETF Series | 140 | 6 | Tank Top |
| Tank Topper | 650 | 10 | Tank Top + Integrated Breather |
| IN-AGB | 2400 | 10 | Inside Tank |

Medium Pressure



- Various port options
- High capacity/high efficiency Microglass III and 'e' series, 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 |
|-----------|---------------------|------------------|----------------|
| CN Series | 600 | 70 | Inline |
| 45 Series | 260 | 40 | Inline |

High Pressure



- Various mounting configurations
- High capacity/high efficiency Microglass III and 'e' Series, environmentally friendly media options
- Visual and electrical indicators with several connector styles
- Flows up to 520 l/min at 414 bar

zf 03



| Model | Max Flow Rate l/min | Max Pressure Bar | Mounting Style |
|-----------|---------------------|------------------|----------------|
| 8 Series | 700 | 414 | Inline |
| 70 Series | 450 | 420 | Inline |

LaserCM – Portable Particle Counter

There are many reasons why the LaserCM, the latest in an impressive line-up of portable particle counters, is destined to become a world-leader. Some users will be attracted to its proven performance in the field, on the production line or in the laboratory. Others will recognize the manufacturing quality, its reliability, its potential for reducing machine downtime, and its effective predictive maintenance programmes.



zfa 03



Fuel Filtration and Separation

Racor Spin On Series



- SAE J1488/J1839 and ISO 4020 water separation and ISO TR13353 particle efficiency
- Install a compact Spin On filter/separator with an integral heater and see-through bowl
- Replaceable Aquabloc elements and multiple ports
- 400 Series primer pump option allows bus and truck fleet operators to tailor a filter/separator system specifically to their operating needs

zf 10



Racor Turbine Series



- The heavy duty, high capacity water separation and fuel filtration solution
- Genuine Aquabloc elements
- New design, clear-view bowls, die cast aluminium construction
- Heater and metal bowl options
- Drain valve + water sensor options

zf 10



Crankcase Ventilation System (CCV)



- A compact, patented package that provides superior oil coalascence and crankcase pressure control under the severest conditions
- Enabling engines to meet Euro Tier 4 and 5 requirements while protecting turbo and intercooler systems

zf 10



Engine Air Filtration Systems



- Pamic Range – 2 and 3 stage air cleaners designed to ensure low maintenance costs operating efficiency
- Eco Range – lightweight easy-fit air cleaners
- Dynacell range – low profile, multi-stage air cleaners for light through to extra heavy service

zf 10



Transmission + Back Axle Filters and Cabin Air



- A good filtration ratio with a specially designed 'clogging layer'. High burst pressure demand.
- Air intake filters designed to protect motors and extend thier life
- Fresh air filters for truck cabin filtration to remove impurities from air, sand, pollen, asphalt etc

zf 10



Truck Tyre Saver 1 – Tyre Filling with Nitrogen



- Specially designed for filling truck tyres delivering 10, 20, 30 and 40 nm³/h at 95 % purity and 10 bar (g)
- Automatic pneumatic switch-off when there is no nitrogen demand
- Compact design using a high-performance membrane
- Lower fuel consumption and longer tyre life

zf 10



Truck industry Powertrain Technology



Electrical Power Take Off Selector Valve

The Parker selector valve has been designed incorporating pneumatic operation with various electrical interlocks providing safe, reliable engagement and disengagement of power take off drives.

zpn 01



Manual Power Take Off Valves

The PTO (power take off) valve is used extensively within the truck industry, the manual push-pull valve can be supplied individually or as part of a kit of parts. The basic valve is supplied complete with push-in fittings and there is an optional solenoid reset.



Air Suspension/Raise & Lower

Parker products for air suspension systems used on many of today's vehicles include a fully integral module for lift axel control and the innovative, lightweight raise & lower valve.

Gearshift Knobs and Valves for Control of High and Low Ratios on Transmissions.

Parker Pneumatic has been supplying valves, cylinders and gearshift knobs to the world's leading manufacturers and suppliers to the heavy vehicle industry for over 25 years.

Thermoplastic Hoses

Polyflex/Parflex Thermoplastic Hoses for Hydraulic Applications



For pressures up to 700 bar. Single and multiple lines also as pre-configured assemblies. Works with Polykrimp/Parkrimp systems.

Applications: Low pressure to high pressure hydraulic and airless paint spray. PTFE hoses as compressor discharge lines, oil, fuel, water coolant lines.

Construction: Thermoplastic core tube with synthetic fibre/ steel wire reinforcement.

- **Size range:** 2 to 32 mm (5/64" to 1 1/4")
- **Working pressure:** up to 700 bar
- **Temperature range:** -57 to +150 °C (PTFE up to + 232 °C)

zfc 03



Catalogue 4460

Preformed



The preform technology enables Parker to supply tailor-made hose and thermoplastic tubing solutions for a variety of applications such as airbrake, fuel lines, low and also high pressure hydraulic lines. Benefits:

- **It is common for Preformed Thermoplastic products to cost less than the tube or hose/tube combination it will replace. The difference is mainly achieved by reducing the number of fittings on a given routing**
- **In cases where Parker preformed products have more expensive parts than the comparable product, the time saved during the handling and installation has made up more than the original costs**
- **Avoid leakage points by reducing the number of fittings**
- **Optimum usage of confined spaces**
- **Easy assembly in hard-to-reach areas**
- **Weight reduction**

zfc 01



Catalogue 4460

Polyflex Presto Tubing for Pneumatics



Thermoplastic single and multicore tubing bundles for most pneumatic applications. Tubing bundles for instrumentation, controls and systems monitoring.

- **Materials:** Polyethylene (PE), Polyurethane (TPU), Polyamide (PA)
- **Size range:** 2 to 16 mm (5/64" to 5/8")
- **Temperature range:** -40 to +80 °C

zfc 02



Catalogue 5210

Chromium6-free Fittings: New Generation



New, chromium6-free fitting generation, consisting of:

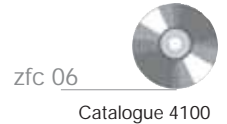
EO-PLUS for soft sealed connections,

EO2-PLUS for Dry Technology,

EO2-FORM for cold-formed soft sealed tube connections.

Gives maximum safety even at extreme pressures, 500 hours corrosion resistance against white rust. Salt spray and climate change test proven. 25% reduced tightening torques.

- **Product range:**
 - Series L 6–42 mm tube o.d.
 - Series S 6–38 mm tube o.d.
- **Material: steel**
- **Sealing material: NBR/FKM**
- **Nominal pressure PN:**
 - Series L up to 500 bar
 - Series S up to 800 bar
- **Sizes 20S – 38S: 420 bar**



zfc 06

Catalogue 4100

SensoControl Test Points and Adaptors



Broad range of EMA-measuring points and adaptors in chromium6-free finish for rapid, clean and simple adaption of sensors and measuring equipment to hydraulic systems.



zfc 08

Catalogue 4100

SensoControl Hand-held Measuring Devices



ServiceJunior

Measuring and displaying pressures with high precision on a 4-digit display. Pressure peaks are securely captured at a scanning rate of 10 ms by displaying MAX reading.

- Digital pressure gauge with illuminated display
- Bar graph display with Peak & Hold function
- Pressure peaks in ms
- 4-key menu
- Robust metal housing



zsc.01

Catalogue 4054



ServiceJunior Wireless

- Wireless transmissions up to 50 metres
- Read-out data from measured data memory to the PC via radio interface
- Monitor several measurement points (network operations)
- Long-term monitoring



zsc.01

Bulletin 4056



ServiceJunior Kit / ServiceJunior Wireless Kit

- Complete kit including Test Point Adaptors and Test Hoses
- Ready to start



zsc.01

Catalogue 4054
Bulletin 4056

SensoControl Sensors



Pressure Sensor SCP

Pressure and Temperature Sensor SCPT

Pressure sensors in robust stainless steel housings for mobile use.



zsc.01

Bulletin 4050-3

Pneumatic Fittings

Prestolok 2

Push-in Fittings Thermoplastic Body



Prestolok 2 is an instant fitting for plastic tubing, may be used with a protective cap.

- **Material:** polyamide, threaded parts in nickel plated brass
- **Sizes:** tube outer diameter 4 to 14 mm
- **Threads:** BSPT, BSPP 1/8" to 1/2", metric M3 to M22
- **Working pressure:** up to 18 bar
- **Working temperature:** -25 to +80 °C (depending on tube specification)

zfc 09



Catalogue 0093

Prestomatic 2

Airbrake Fittings



Re-usable push-in brass fitting for use with polyamide airbrake tubing.

- **Material:** brass
- **Sizes:** tube outer diameter from 6 to 16 mm
- **Threads:** from M10x1.0 to M22x1.5, NPT, BSPT
- **Working pressure:** up to 17 bar
- **Working temperature:** -40 to +100 °C

zfc 10



CD 3530-2/UK

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 retained within the nut. Metrulok fittings are reusable.

- **Material:** brass
- **Sizes:** tube outer diameter 4 to 22 mm
- **Threads:** NPT, BSPT, BSPP 1/16" to 3/4", metric M5 to M22
- **Working pressure:** copper tubing up to 180 bar, plastic tubing up to 39 bar
- **Working temperature:** -60 to +190 °C

zfc 11



Catalogue 0093

SAE 100R5 Air Brake/Refrigerant and 2TE Hydraulic hoses



We are offering a range of:

- Air conditioning hose/tube assemblies (steel or aluminium)
- Hydraulic hose/tube assemblies
- Tube assemblies
- Heating & cooling hose/tube assemblies

A range of hoses which are the optimum solution for air brake systems, diesel engine cooling systems as well as air conditioning applications.

Parker is offering for this hose types a special range of fittings (Series 26) as a *No-Skive* system.

Some of the available hose types include high performance or fire resistance construction.

The hose constructions are dependent on working pressure and contain different layers of textile or steel wires and synthetic rubber material for tube and cover.

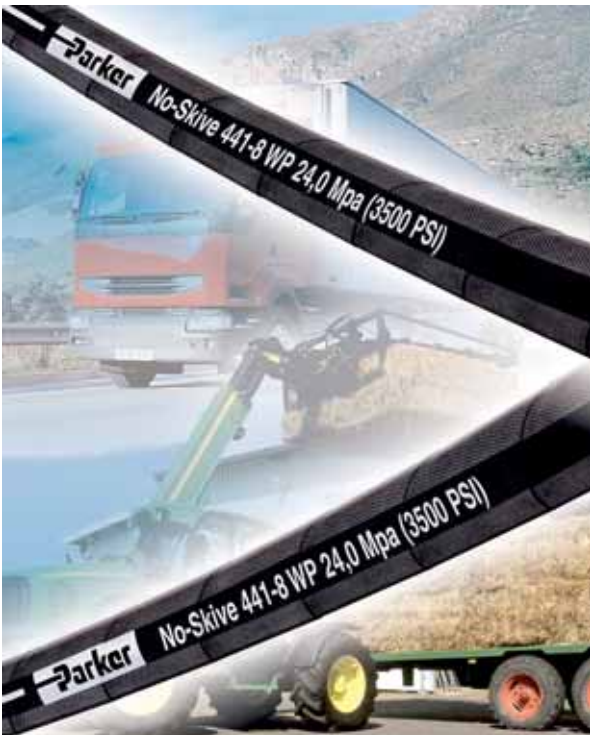
- Working pressure: up to 207 bar
- Temperature range: -50 to +150 °C
- Dimensions: size -4 to -32



zfc 17

Catalogue 4400-UK

441 Compact *No-Skive* High Pressure SAE 100 R16 Hose – ideal for Power Steering



Parker's upgraded 441 hose provides 2-wire braided performance with only 1 high quality wire braid and is now approved for a working temperature of up to +125 °C.

The Hi-Pac construction of the hose braid allows the technical characteristics of an SAE 100 R16 hose to be met, but offers higher flexibility and therefore improved ease of installation in machines or equipment.

The 441 hose is ideal for many industrial and mobile applications, with typical usage seen on agricultural machines or in power steering circuits.

Synthetic rubber tube; one braid of high tensile steel wire reinforcement; oil, weather and abrasion resistant black synthetic rubber cover.

- Temperature range: -40 to +125 °C
- Exceptions:
Air: max. +70 °C
Water: max. +85 °C



CARBOPRESS N/L 10

Black rubber hoses, with NBR tube suitable for fuel oils and petrol having an aromatic content up to 50%, grease and unleaded oil products. Oil and weather resistant NBR/EPDM antistatic cover ($R < 1 \text{ Megaohm/m}$). This lightweight 10 bar hose is versatile and can fit a variety of applications as:

- Oil return in hydraulic circuits
- Conveyance of oil and fuel in general industry
- Greasing in garage operations
- Inner diameter from 5 up to 25 mm (standard, available on stock)



AirBrake DIN 74310, AirBrake SAE J 1402-A

Black rubber hoses widely used in truck air brake systems.

- Standard DIN 74310
- Inner diameter 11, 13 and 15 mm
- W.P.: 10 bar
- Temperature range: -40 to $+70$ °C

The special EPDM rubber compound, used for both tube and cover, gives features of low permeability to air and very good flexibility even in case of low temperatures.

- Standard SAE J 1402-A
- Inner diameter: 9.5, 12.7, 14.5 mm
- Burst pressure: 62.1 bar
- Temperature range: -40 to $+93$ °C

The NBR/SBR tube assures a good oil mist resistance. The premium quality self-extinguishing CR cover has an excellent resistance to high temperatures, weathering, abrasion and oil traces.



Rador 3

Black EPDM rubber hoses designed for cooling systems of automotive engines and stationary engines, it is suitable for delivery of hot water, glycol and light chemicals. With a working temperature between -40 and $+100$ °C and a very wide range of inner diameters that starts from 10 mm up to 110 mm.

Rador 3 can cover an extensive variety of purposes from automotive to industrial applications. Rador 3 can be supplied either in rolls or in 1 m lengths (both standard, available on stock).

When better flexibility and bending radius are required, this 3 bar working pressure can be also available, on request, in a corrugated version with helix wire (Rador OND). Inner diameter from 15 up to 60 mm.



About Parker Hannifin Corporation

Parker Hannifin is a leading global motion-control company dedicated to delivering premier customer service. A Fortune 500 corporation listed on the New York Stock Exchange (PH), our components and systems comprise over 3,200 product lines that control motion in some 1,220 industrial and aerospace markets. Parker is the only manufacturer to offer its customers a choice of hydraulic, pneumatic, and electromechanical motion-control solutions. Our company has the largest distribution network in its field, with over 8,200 distributors serving more than 400,000 customers worldwide.

Parker's Charter

To be a leading worldwide manufacturer of components and systems for the builders and users of durable goods. More specifically, we will design, market and manufacture products controlling motion, flow and pressure. We will achieve profitable growth through premier customer service.

Product Information

Customers seeking product information, the location of a nearby distributor, or repair services will receive prompt attention by calling the Parker Product Information Centre. The Centre can be called toll free from France, Germany, Austria, Switzerland or the United Kingdom. You will be answered by a Parker employee in your own language. Call Freephone: 00800 27 27 5374 (00800 C PARKER).

The Aerospace Group is a leader in the development, design, manufacture and servicing of control systems and components for aerospace and related high-technology markets, while achieving growth through premier customer service.



The Climate & Industrial Controls Group designs, manufactures and markets system-control and fluid-handling components and systems to refrigeration, air-conditioning and industrial customers worldwide.



The Fluid Connectors Group designs, manufactures and markets rigid and flexible connectors, and associated products used in pneumatic and fluid systems.



The Seal Group designs, manufactures and distributes industrial and commercial sealing devices and related products by providing superior quality and total customer satisfaction.



The Hydraulics Group designs, produces and markets a full spectrum of hydraulic components and systems to builders and users of industrial and mobile machinery and equipment.



The Filtration Group designs, manufactures and markets quality filtration and clarification products, providing customers with the best value, quality, technical support, and global availability.



The Automation Group is a leading supplier of pneumatic and electro-mechanical components and systems to automation customers worldwide.



The Instrumentation Group is a global leader in the design, manufacture and distribution of high-quality critical flow components for worldwide process instrumentation, ultra-high-purity, medical and analytical applications.



Europe

Azerbaijan

**Technical representative for
Parker Hannifin plc**
140 Alovsat Guliyev st. Apt.10
AZ-1000 Baku
Azerbaijan
Tel./Fax: +99 412 598 3966

Austria

Parker Hannifin GmbH
Badener Strasse 12
AT-2700 Wiener Neustadt
Austria
Tel.: +43 2622-23501-0
Fax: +43 2622-66212

Austria

(HQ Eastern Europe)
Parker Hannifin GmbH
Badener Strasse 12
AT-2700 Wiener Neustadt
Austria
Tel.: +43 2622-23501 970
Fax: +43 2622-23501 977

Belarus

Parker Hannifin Corporation
Pr. Nezavisimosti, 11, office 524
BY-220030 Minsk
Belarus
Tel.: +375 17 209 9399
Fax: +375 17 209 9227

Belgium

Parker Hannifin S.A.-N.V.
ZI Sud 2
23, Rue du Bosquet
BE-1400 Nivelles
Belgium
Tel.: +32 67 280 900
Fax: +32 67 280 999

Czech Republic

Parker Hannifin s.r.o.
Parkerova 623
CZ-250 67 Klecany
Czech Republic
Tel.: +420 284 083 111
Fax: +420 284 083 112

Denmark

Parker Hannifin Danmark A/S
Industriparken 35-37
DK-2750 Ballerup
Denmark
Tel.: +45 43 56 04 00
Fax: +45 43 73 31 07

Finland

Parker Hannifin Oy
Ylästöntie 16
FI-01520 Vantaa
Finland
Tel.: +358 20 753 2500
Fax: +358 20 753 2200

France

Parker Hannifin France SAS
Sales Company France
142, rue de la Forêt
FR-741 30 Contamine Sur Arve
France
Tel.: +33 4-50 25 80 25
Fax: +33 4-50 03 67 37

Germany

Parker Hannifin GmbH & Co.KG
Pat-Parker-Platz 1
DE-41564 Kaarst
Germany
Tel.: +49 2131 4016 0
Fax: +49 2131 4016 9199

Greece

Parker Hannifin Corporation
197 Syngrou av.
GR-171 21 Athens
Greece
Tel.: +30 210 933 6450
Fax: +30 210 933 6451

Hungary

Parker Hannifin Corporation
Hungarian Trade
Representative Office
Egressy u. 100
HU-1149 Budapest
Hungary
Tel.: +36 1 220 4155
Fax: +36 1 422 1525

Ireland

Parker Hannifin Ltd
Blackthorn Close
Stillorgan Industrial Park
Blackrock, Co. Dublin
Ireland
Tel.: +353 1 293 9999
Fax: +353 1 293 9900

Italy

Parker Hannifin SpA
Via Privata Archimede 1
IT-200 94 Corsico (MI)
Italy
Tel.: +39 02-45 19 21
Fax: +39 02-44 79 340

Kazakhstan

Gateway Ventures CA Ltd
Parker Representative
7a Kabanbai Batira
KZ-480100 Almaty
Kazakhstan
Tel.: +7 3272 505 800
Fax: +7 3272 505 801

Latvia (Lithuania), Kaliningrad)

Parker Hannifin Corporation
79 a Slokas street, office No. 6
LV-1007 Riga
Latvia
Tel.: +371 74 52 601
Fax: +371 74 52 608

The Netherlands

Parker Hannifin BV
Edisonstraat 1
NL-7575 AT Oldenzaal
The Netherlands
Tel.: +31 541 585 000
Fax: +31 541 585 459

Norway

Parker Hannifin A/S
P.O. Boks 3008
NO-1402 Ski
Norway
Tel.: +47 64-91 10 00
Fax: +47 64-91 10 90

Poland

Parker Hannifin Sp.zo.o
Ul. Rownolegla 8
PL-02-235 Warszawa
Poland
Tel.: +48 22 573 24 00
Fax: +48 22 573 24 03

Portugal

Parker Hannifin Portugal, Lda
Travessa da Bateria 184, R/C
Dto./1 Esq.
PT-4450-625 Leca da Palmeira
Portugal
Tel.: +351 22 999 7360
Fax: +351 22 996 1527

Romania

Hidro Consulting Impex SRL
Bld Ferdinand nr 27, Sect 2
RO-021381 Bucharesti
Romania
Tel.: +40 21 252 13 82
Fax: +40 21 252 33 81

Russia

Parker Hannifin Ilc
8th March st., 6A, Build. 1
RU-123083 Moscow
Russia
Tel.: +7 495 645 2156
Fax: +7 495 612 1860

Russia – Krasnoyarsk

Parker Hannifin Ilc
Prospect Mira 10, office 724
RU-660049 Krasnoyarsk
Russia
Tel.: +7 3912 52 73 35
Fax: +7 3912 52 73 35

Russia – Sakhalin

Parker Hannifin Ilc
Prospect Mira, 1B
RU-693012 Yuzhno-Sakhalinsk
Russia
Tel.: +7 4242 42 35 27
Fax: +7 4242 42 35 27

Russia – St. Petersburg

Parker Hannifin Ilc
Fokins str., 2
RU-194044 St. Petersburg
Russia
Tel.: +7 812 320 49 30
Fax: +7 812 320 49 31

Slovenia

Parker Hannifin Corporation
Vel. Bucna vas 7
SI-8000 Novo Mesto
Slovenia
Tel.: +386 7 337 6650
Fax: +386 7 337 6651

Spain

Parker Hannifin España SA
P.O. Box No. 74
P.I. Las Monjas, c/Estaciones, 8
ES-28850 Torrejon de Ardoz
Madrid
Spain
Tel.: +34 91-675 73 00
Fax: +34 91-675 77 11

Sweden

Parker Hannifin AB
Fagerstagatan 51
Box 8314
SE-163 08 Spånga
Sweden
Tel.: +46 8 5979 50 00
Fax: +46 8 5979 51 10

Turkey

Parker Hannifin Corporation
Liaison office of Turkey
Merter Is Merkezi
Gen. Ali Riza Gurcan cad. No: 2/67
TR-34067 Merter, Istanbul
Turkey
Tel.: +90 212 482 91 06 or
+90 212 482 91 07
Fax: +90 212 482 91 10

United Kingdom

Parker Hannifin Ltd
Tackbrook Park Drive.
Tackbrook Park
Warwick, CV34 6 TU
England
Tel.: +44 1926-317 878
Fax: +44 1926-317 855

Ukraine

Parker Hannifin Corporation
Representation Office in Ukraine
Vul. Velyka Vasylykivska 9/2
Office 59
UA-01004 Kyiv
Ukraine
Tel.: +380 44 494 2731/2732/2724
Fax: +380 44 494 2730

Asia Pacific

Australia

Parker Hannifin Pty Ltd
Motion & Control Group
9 Carrington Road
AU-Castle Hill, N.S.W 2154
Australia
Tel.: +61 (0)2-9634 7777
Fax: +61 (0)2-9842 5111

China – Hong Kong

Parker Hannifin Ltd
8/F, Kin Yip Plaza
9 Cheung Yee Street
Cheung Sha Wan
Hong Kong
Tel.: +852 2428 8008
Fax: +852 2425 6896

China – Shanghai

**Parker Hannifin Motion & Control
(Shanghai) Co., Ltd**
280 Yunqiao Road
Jin Qiao Export Processing Zone
Shanghai 201206
China
Tel.: +86 21 5031 2525
Fax: +86 21 5834 8975

India

Parker Hannifin India Pvt Ltd
Plot No. EL-26, MIDC, TTC Industrial Area
Mahape, Navi Mumbai 400 709
India
Tel.: +91 22 5613 7081/82/83/84/85
Fax: +91 22 2768 6841
+91 22 2768 6618

Japan

Parker Hannifin Japan Ltd
Shirokanedai Building 2nd Floor
3-2-10, Shirokanedai,
Minato-ku, Tokyo 108-0071
Japan
Tel.: +81 3 6408 3900
Fax: +81 3 5449 7201

Korea

Parker Hannifin Korea Ltd
6F Daehwa Plaza
169 Samsung-dong, Gangnam-gu
Seoul 135-090
Korea
Tel.: +82 2 559 0400
Fax: +82 2 556 8187

Malaysia

Parker Hannifin Singapore Pte. Ltd
Representative Office
Suite E-08-16, Block E
Plaza Mont Kiara
50480 Kuala Lumpur
Malaysia
Tel.: (60) 3 6203 4482
Fax: (60) 3 6203 4457

New Zealand

Parker Hannifin NZ Ltd
Parker Motion & Control Division
NZ-103 Harris Road, East Tamaki
New Zealand
Tel.: +64 9 273 8944
Fax: +64 9 273 8943

Singapore

Parker Hannifin Singapore Pte Ltd
No. 11 Fourth Chin Bee Road
Singapore 619702
Singapore
Tel.: +65 6887 6300
Fax: +65 6265 5125

Taiwan

Parker Hannifin Taiwan, Ltd.
8F-1 No. 102 Sung Lung Road
Taipei
Taiwan
Tel.: (886) 2 8787 3780
Fax: (886) 2 8787 3782

Thailand

Parker Hannifin (Thailand) Co., Ltd.
1023 3rd Floor, TPS Building
Pattanakarn Road, Suanluang
Bangkok 10250
Thailand
Tel.: (662) 717 8140
Fax: (662) 717 8148

Middle East

United Arab Emirates

Parker Hannifin Corporation
P.O. Box 46451
Abu Dhabi
United Arab Emirates
Tel.: +971 2 67 88 587
Fax: +971 2 67 93 812

South Africa

Republic of South Africa

Parker Hannifin Africa Pty Ltd
Parker Place
10 Berne Avenue Aeroport
Kempton Park
Republic of South Africa
Tel.: +27 (0)11-961 0700
Fax: +27 (0)11-392 7213

North America

USA, Canada

Parker Hannifin Corporation
Mobile Systems Division
595 Scheller Road
Lincolnshire, IL 60069
USA
Tel.: +1 847-821-1500
Fax: +1 847-821-7600

Mexico

Parker Hannifin de Mexico, S.A. de C.V.
Via de Ferrocarril a Matamoros #730
Apodaca, N.L.
C.P. 66600
Mexico
Tel.: +52 81 56 6000
Fax: +52 81 56 6076

Latin America

Pan American Division

Parker Hannifin Corporation
7400 N.W. 19th Street
Suite A
Miami, FL 33126
USA
Tel.: +305 470 8800
Fax: +305 470 8808

Argentina

Parker Hannifin Argentina S.A.I.C.
Stephenson 2711
(1667) Tortuguitas–Malvinas Argentinas
Pcia. de Buenos Aires
Argentina
Tel.: +54 11 4752 4129
Fax: +54 11 4752 3704

Brazil

**Parker Hannifin
Industria E Comercio Ltda**
Av. Lucas Nogueira Garcez
2181 Jacarei, SP Brazil 12300-000
Brazil
Tel.: +55 12 354 5100
Fax: +55 12 354 5262

Venezuela

Parker Hannifin Venezuela S.A.
Edf. Draza PB. Esq.
Calle Miraima Con. Av.
Principal Boleita Norte
Caracas
Venezuela
Tel.: +58 2 2385422
Fax: +58 2 2392272

System Requirements

To view the CD, the following are required:

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

Acrobat Reader

Catalogue files are viewed using Adobe Acrobat Reader. If you do not have Acrobat Reader installed on your PC, it will install from the CD. If you have Acrobat Reader but do not have the search plug-in, you will be given the option to install Acrobat Reader 5.0 with search in place of your current version.

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

To View the CD

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

- **Search** takes you to the search feature. When the search window opens, type a word(s) or code* and press enter. A list of pages where that word appears is shown. Select one and click the View button. Repeat as needed.
- **View Bookshelf** takes you to the selection of catalogues and products on the CD.
- **Product Overview** takes you to a .pdf file of this Truck Hydraulics Product Range.
- **Safety** takes you to the Warning and Offer of Sale documents.
- **Getting Started** provides a summary of how to navigate using Acrobat Reader.
- **Contact Us** provides you with phone, fax and online information.

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

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Parker Hannifin Corporation
Parker House
55 Maylands Ave.
Hemel Hempstead, Herts, HP2 4SJ
England
Tel.: +44 (0) 1442 458 000
Fax: +44 (0) 1442 458 200
Tel.: 00800 2727 5374 EPIC
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