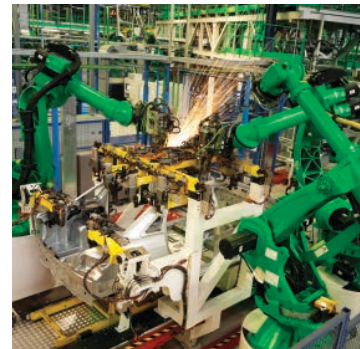


Pump & Motor Division

PGP500H Series Silent Pump



ENGINEERING YOUR SUCCESS.

PGP500H is a silent gear pump series which utilizes a specially developed rotor profile. This rotor profile, has a single point of contact and completes an overlap which eliminates any trapped volume of fluid. The result is a silent, continuous transmission of fluid when compared to the pulsations of a traditional gear pump.



Parker PGP500H core and its technological innovation is based on three breakthroughs.

- The helicoidal rotor profile
- The screw step
- The inner force balancing

The most important benefits of using **Parker PGP500H** pump:

- Very low pump pulsations with dramatically reduced vibrations.
- High volumetric efficiency, at high or low speed, resulting in energy savings.
- Additional cost savings can be achieved when eliminating a secondary noise reduction measure.



WARNING — User Responsibility

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

This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

Offer of Sale

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

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WARNING: This product can expose you to chemicals including lead or DEHP which are known to the state of California to cause cancer, birth defects, and other reproductive harm. www.p65warnings.ca.gov



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Offer of Sale 18-19

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PGP500H Series Pump

- Special **gear rotor profile** avoids oil encapsulation
- Average **15dB(A) quieter** compared to standard gear pumps
- **Extremely low** vibrations and pulsations
- Very **high efficiency** for a wide range of speed
- Maximum operating pressure up to **3625 PSI**
- **Noise level reference for a 10cc pump at 3000 rpm and 200 bar: 56 dB(A)**



PGP500H Series pumps are specifically designed to reduce noise and pulsations from the hydraulic system and offer high pressure performance in a wide range of displacements (from 4.2 cc/rev to 200.4 cc/rev).

Perfect for all stationary industrial indoor applications, and for any mobile application sensitive to noise such as electric and hybrid vehicles.

The special pressure balancing assures maximum efficiency under all operation conditions.

Characteristics

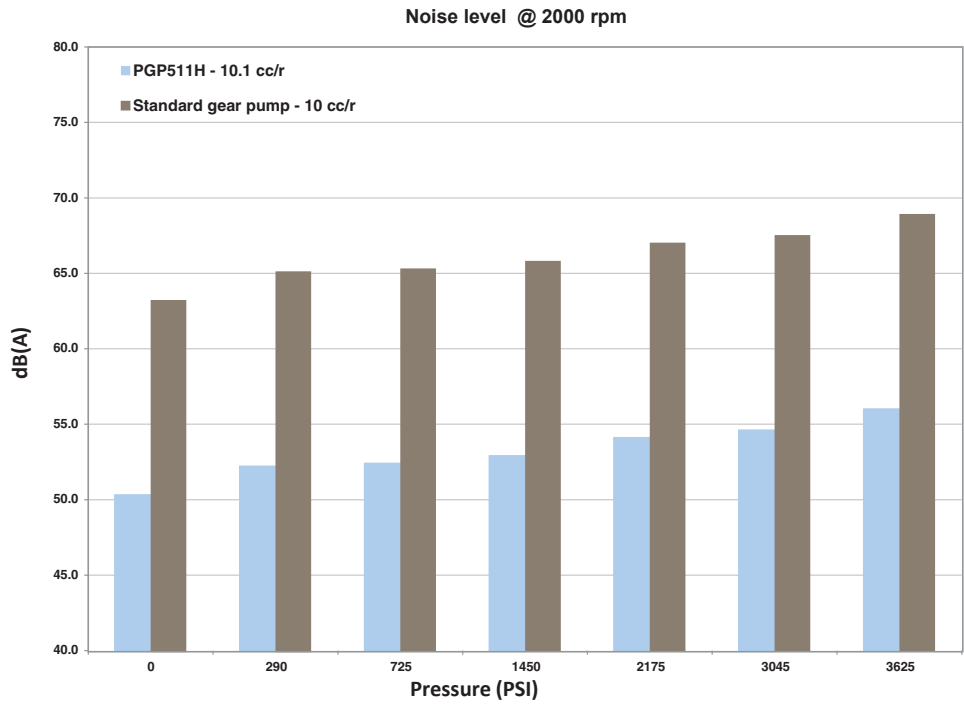
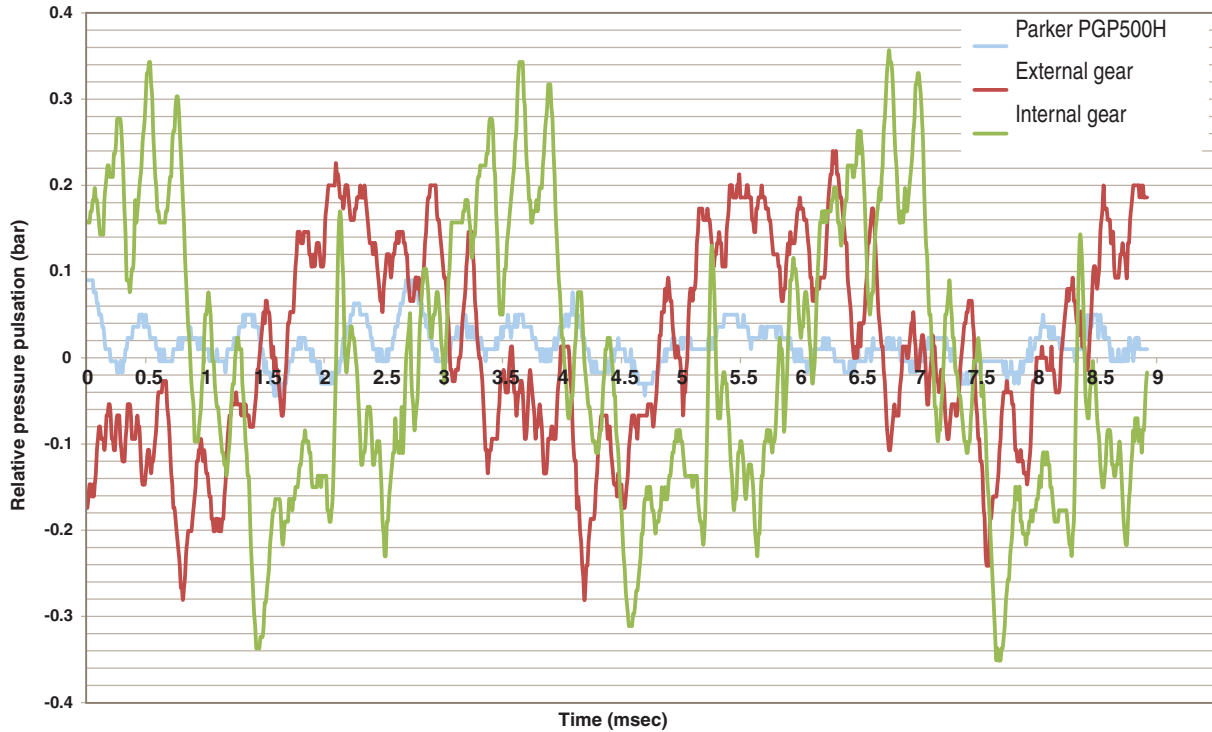
Product Features	Description
Pump Type	Heavy-duty, low noise, aluminum housing, external helicoidal gear
Acoustic Emissions	From 52 up to 63 db(A) at 2950 rpm
Mounting	SAE 2-Bolt "A-A", "A", "B", and "D"
Ports	SAE straight thread up to PGP517H, SAE-3000 flanged for PGP523H and PGP529H
Shaft Style	SAE splined, keyed
Speed	300-3000 rpm
Theoretical Displ.	See tables on pages 3, 4, 5, 6, and 7
Drive	Drive direct with flexible coupling is recommended
Inlet Pressure	Operating range: 0.8 to 3 bar abs (12-43 psia)

Product Features	Description
Outlet Pressure	See tables on pages 3, 4, 5, 6, and 7
Fluids	Mineral oil, Synthetic oil
Fluid Temperature	Range of operating temperature -15 to +70°C (5 to 158° F). Max. permissible operating pressure dependent on fluid temperature
Fluid Viscosity	15 to 150 centistokes
Range of Ambient Temperature	-40°C to +70°C (-40°F to 158°F)
Filtration	According to ISO 4406 Cl. 18/17/14
Direction of Rotation (looking at the driveshaft)	Clockwise is standard. Counter Clockwise is optional
Seals	NBR, FKM (others on request)

NOTE: Different types of pump options are available in terms of shaft, mounting and port type. Please contact Parker.

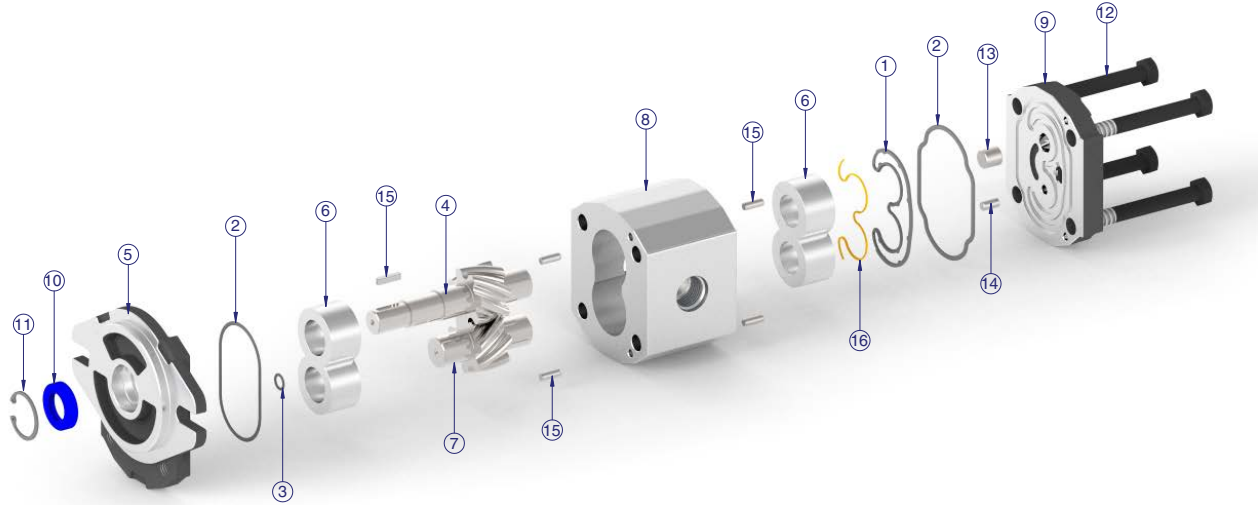
WARNING: This product can expose you to chemicals including lead or DEHP which are known to the state of California to cause cancer, birth defects, and other reproductive harm. www.p65warnings.ca.gov

PGP500H Series virtually eliminates pressure ripple and is approximately 15db(A) quieter than standard external gear pumps.



WARNING: This product can expose you to chemicals including lead or DEHP which are known to the state of California to cause cancer, birth defects, and other reproductive harm. www.p65warnings.ca.gov

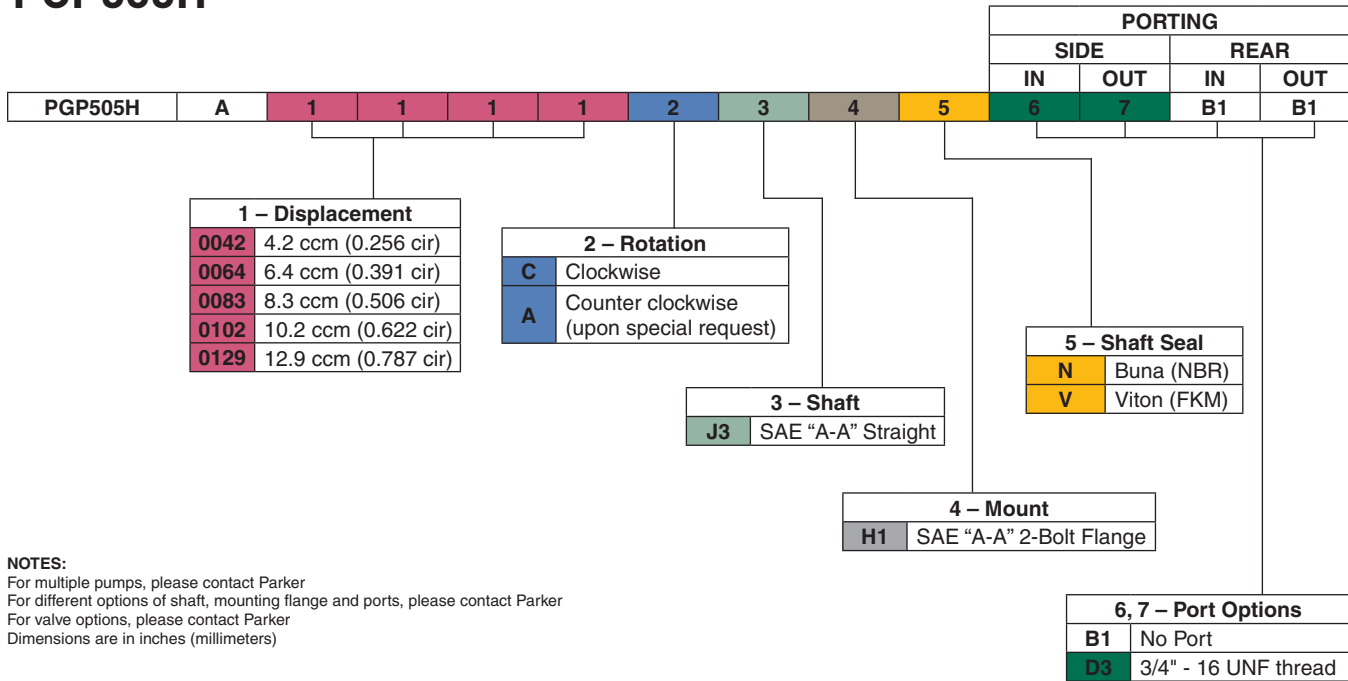




N°	Description	Material
1	Molded seal	NBR
2	O-ring seal	NBR
3	O-ring seal	NBR
4	Driving Helicoidal rotor	Hardened steel
5	Pump flange	Cast iron
6	Thrust plates	Aluminium
7	Driven Helicoidal rotor	Hardened steel
8	Gear housing	Extruded aluminum alloy
9	Cover flange	Cast iron
10	Shaft seal	NBR
11	Snap ring	Steel
12	Capscrews	Steel
13	Piston	Steel
14	Piston	Steel
15	Key	Steel
16	Anti-Extrusion	Plastic

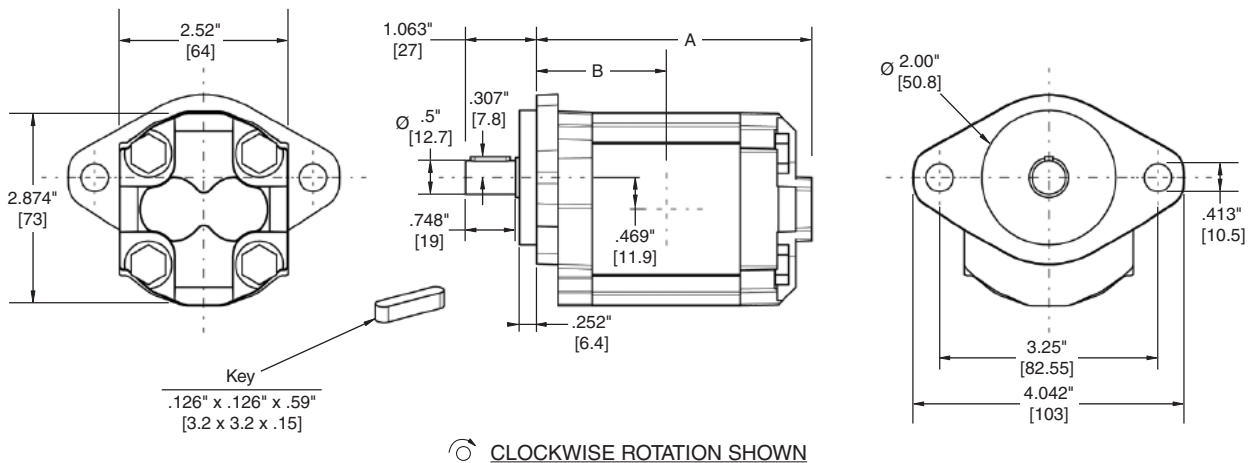
WARNING: This product can expose you to chemicals including lead or DEHP which are known to the state of California to cause cancer, birth defects, and other reproductive harm. www.p65warnings.ca.gov

PGP505H



NOTES:
 For multiple pumps, please contact Parker
 For different options of shaft, mounting flange and ports, please contact Parker
 For valve options, please contact Parker
 Dimensions are in inches (millimeters)

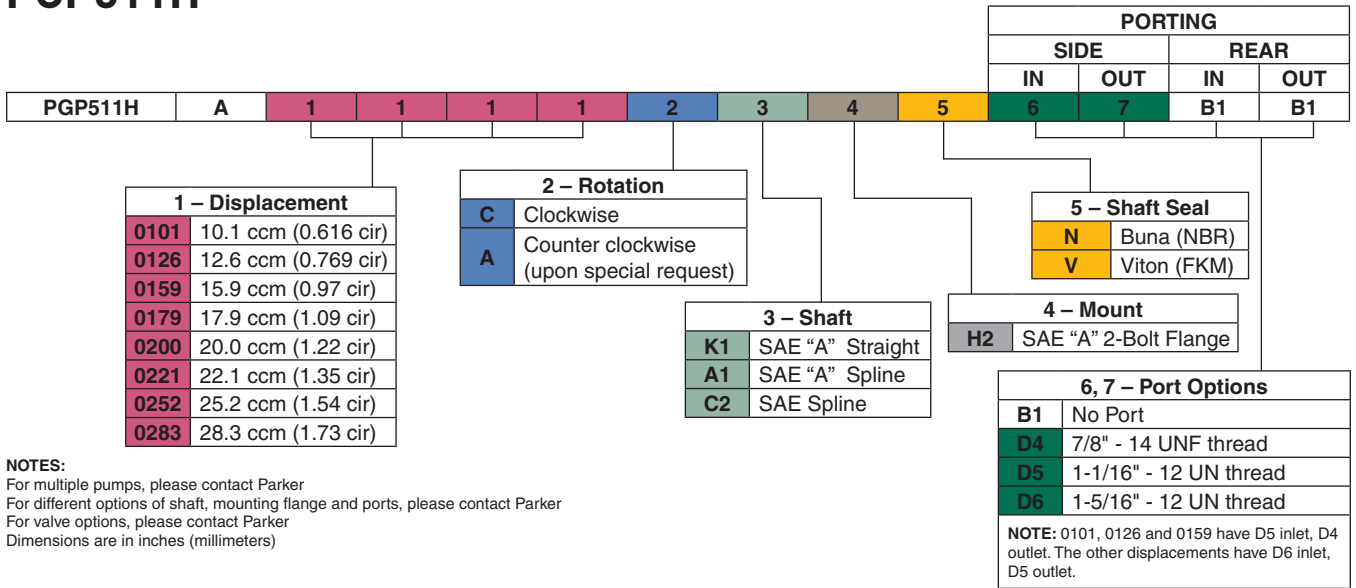
Code	Displacement		GPM (Liters)		PSI (bar)		RPM Minimum Speed	RPM Maximum Speed	Dimensions Inches (mm)			
	cc's/ rev.	(cu.in)	1725 RPM	Max. RPM	Continuous Pressure	Intermittent Pressure			A	B		
0042	4.20	(0.26)	1.84	(7.00)	3191	(220)	500	3000	4.21	(107.0)	1.99	(50.5)
0064	6.40	(0.39)	2.80	(10.60)	3046	(210)	500	3000	4.43	(112.5)	2.10	(53.3)
0083	8.30	(0.51)	3.60	(13.80)	2756	(190)	500	3000	4.63	(117.5)	2.20	(55.8)
0102	10.20	(0.62)	4.50	(16.90)	2176	(150)	500	3000	4.82	(122.5)	2.29	(58.3)
0129	12.90	(0.79)	5.60	(21.40)	1885	(130)	500	3000	5.09	(129.4)	2.43	(61.7)



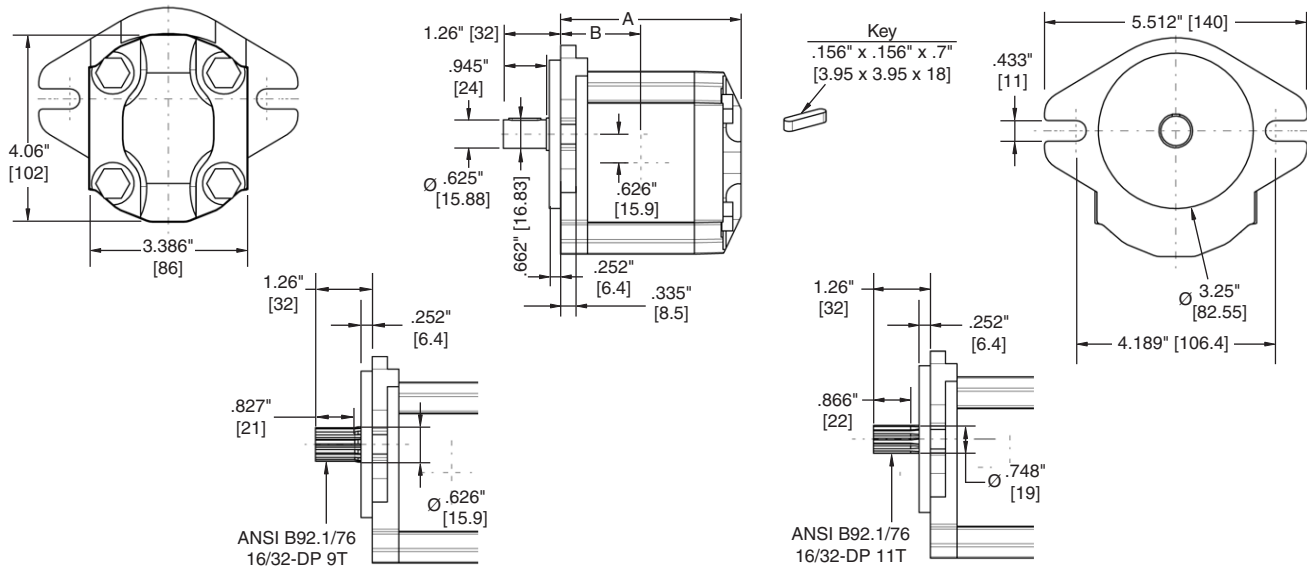
⚠ WARNING: This product can expose you to chemicals including lead or DEHP which are known to the state of California to cause cancer, birth defects, and other reproductive harm. www.p65warnings.ca.gov



PGP511H



Code	Displacement		GPM (Liters)		PSI (bar)		RPM Minimum Speed	RPM Maximum Speed	Dimensions Inches (mm)	
	cc's/ rev.	(cu.in)	1725 RPM	Max. RPM	Continuous Pressure	Intermittent Pressure			A	B
0101	10.10	(0.62)	4.40 (16.70)	7.70 (29.10)	3626 (250)	3771 (260)	400	3000	4.11 (104.5)	1.84 (46.8)
0126	12.60	(0.77)	5.50 (20.90)	9.60 (36.30)	3408 (235)	3481 (240)	400	3000	4.31 (109.4)	1.94 (49.2)
0159	15.90	(0.97)	7.00 (26.40)	12.10 (45.80)	3626 (250)	3771 (260)	400	3000	4.25 (108.0)	1.91 (48.5)
0179	17.90	(1.09)	7.80 (29.70)	13.60 (51.60)	3408 (235)	3553 (245)	400	3000	4.37 (111.0)	1.97 (50.0)
0200	20.00	(1.22)	8.80 (33.20)	15.20 (57.70)	3118 (215)	3263 (225)	400	3000	4.48 (114.0)	2.03 (51.5)
0221	22.10	(1.35)	9.70 (37.60)	16.80 (63.70)	2901 (200)	3046 (210)	400	3000	4.61 (117.0)	2.09 (53.0)
0252	25.20	(1.54)	11.00 (41.80)	19.20 (72.60)	2756 (190)	2901 (200)	400	3000	4.78 (121.5)	2.18 (55.3)
0283	28.30	(1.73)	12.40 (46.90)	21.60 (81.60)	2538 (175)	2756 (190)	400	3000	4.96 (126.0)	2.26 (57.5)



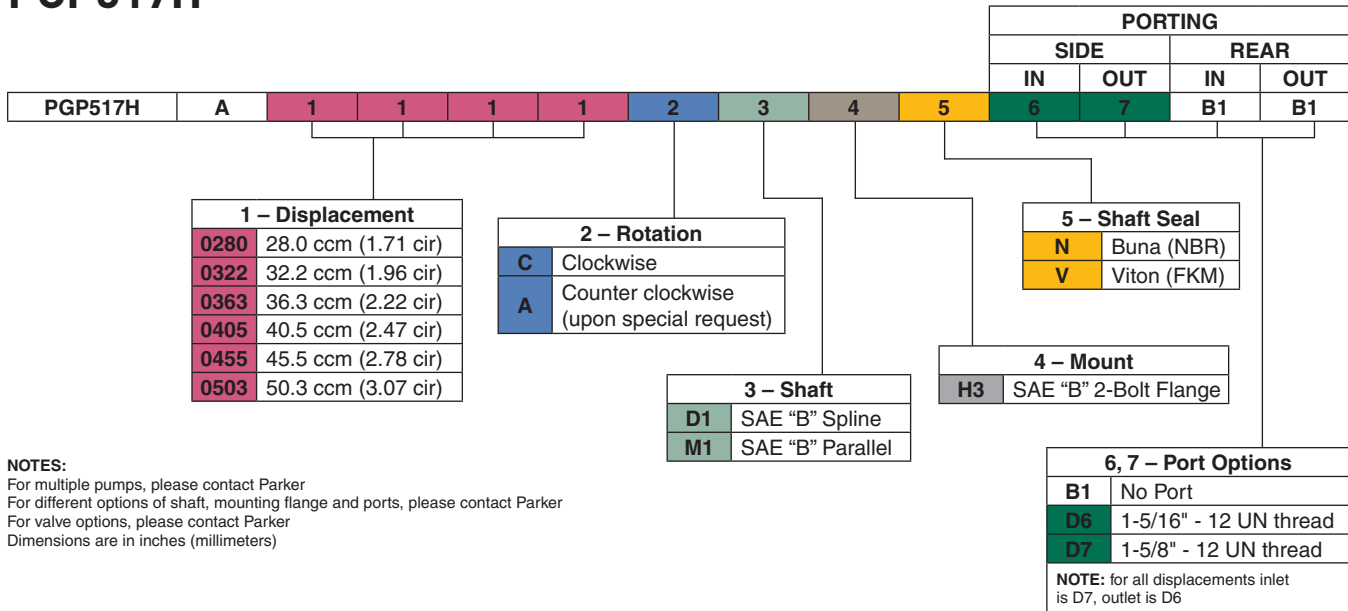
NOTE: 11 tooth spline not available in the displacements 10.1cc/rev and in the 12.6cc/rev (code 0101 and in the 0126).

CLOCKWISE ROTATION SHOWN

WARNING: This product can expose you to chemicals including lead or DEHP which are known to the state of California to cause cancer, birth defects, and other reproductive harm. www.p65warnings.ca.gov

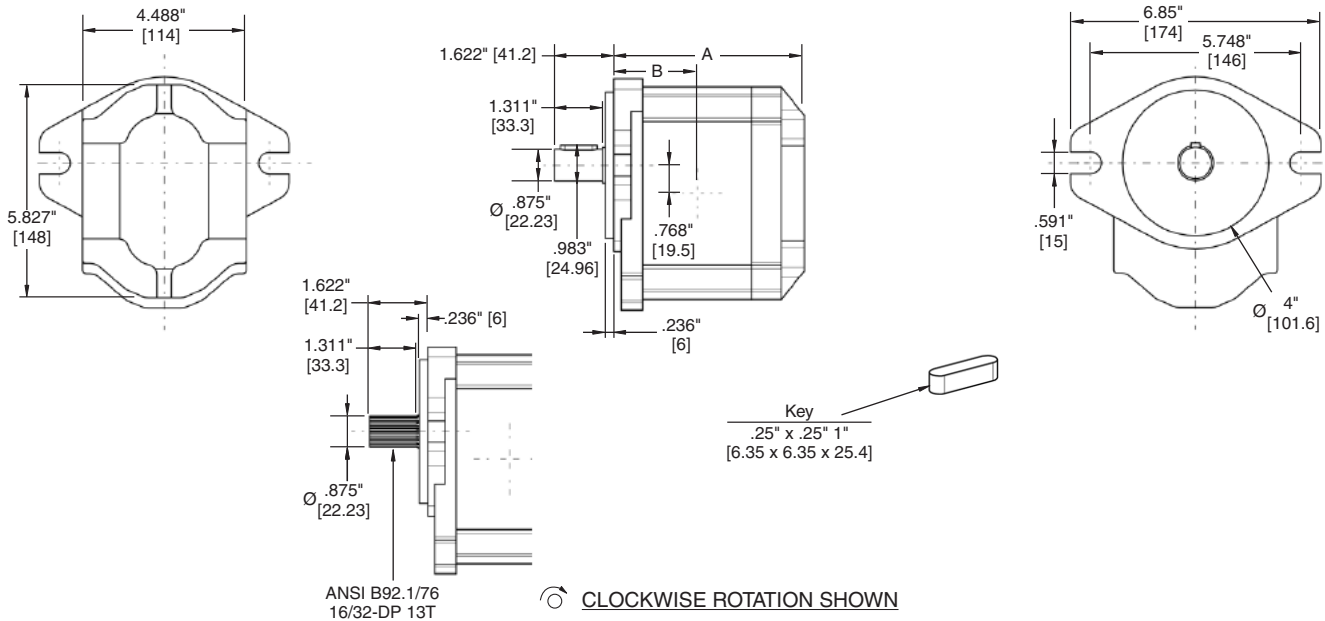


PGP517H



NOTES:
 For multiple pumps, please contact Parker
 For different options of shaft, mounting flange and ports, please contact Parker
 For valve options, please contact Parker
 Dimensions are in inches (millimeters)

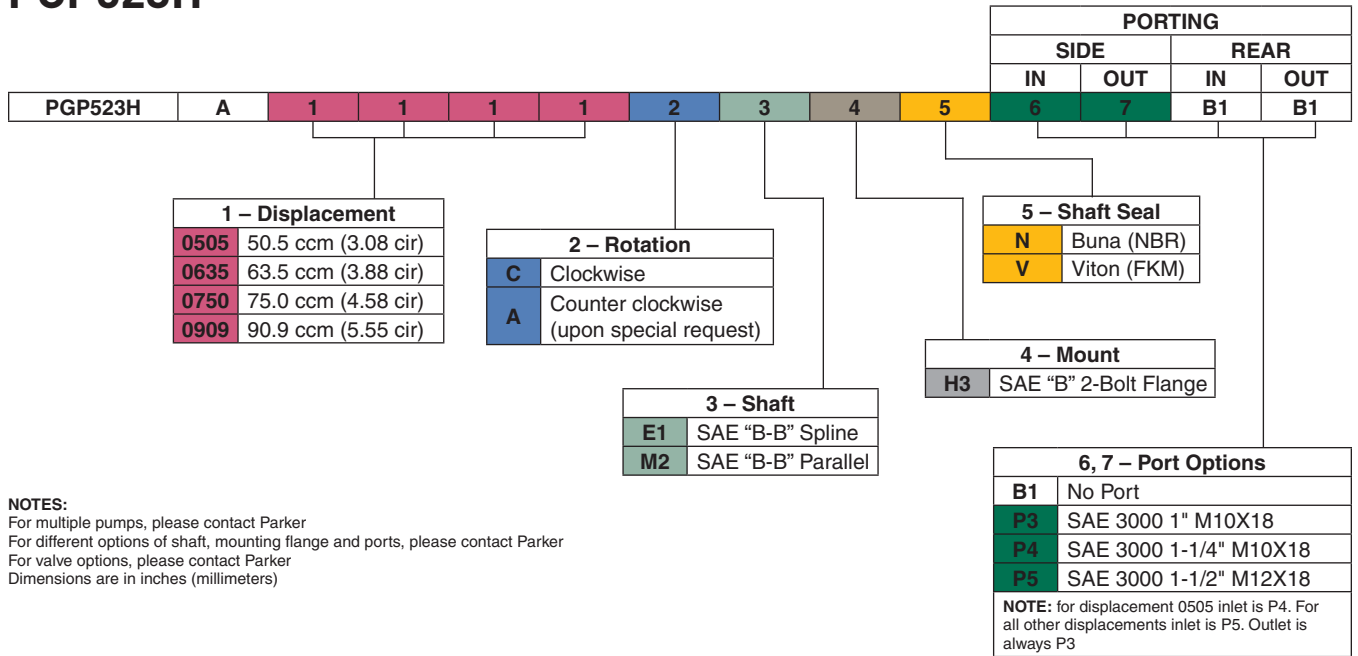
Code	Displacement	GPM (Liters)		PSI (bar)		RPM Minimum Speed	RPM Maximum Speed	Dimensions Inches (mm)	
	cc's/ rev. (cu.in)	1725 RPM	Max. RPM	Continuous Pressure	Intermittent Pressure			A	B
0280	28.00 (1.71)	12.30 (46.40)	21.30 (80.70)	3481 (240)	3626 (250)	350	3000	5.49 (139.5)	2.42 (61.5)
0322	32.20 (1.96)	14.10 (53.40)	24.50 (92.80)	3336 (230)	3481 (240)	350	3000	5.65 (143.5)	2.50 (63.5)
0363	36.30 (2.22)	15.90 (60.20)	27.60 (104.60)	3118 (215)	3336 (230)	350	3000	5.81 (147.5)	2.58 (65.5)
0405	40.50 (2.47)	17.70 (67.10)	30.80 (116.70)	2901 (200)	3046 (210)	300	3000	5.97 (151.5)	2.66 (67.5)
0455	45.50 (2.78)	19.70 (74.80)	28.60 (108.30)	2756 (190)	2901 (200)	300	2500	6.14 (156.0)	2.75 (69.8)
0503	50.30 (3.07)	22.00 (83.40)	31.90 (120.80)	2611 (180)	2756 (190)	300	2500	6.34 (161.0)	2.84 (72.3)



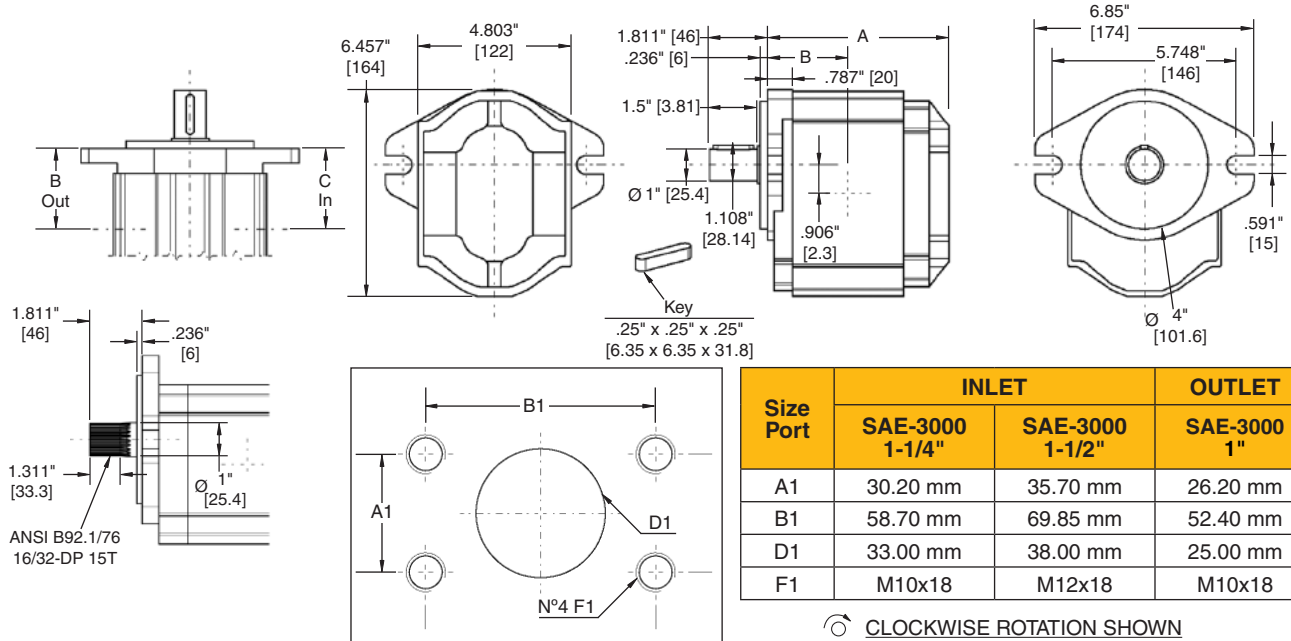
WARNING: This product can expose you to chemicals including lead or DEHP which are known to the state of California to cause cancer, birth defects, and other reproductive harm. www.p65warnings.ca.gov



PGP523H

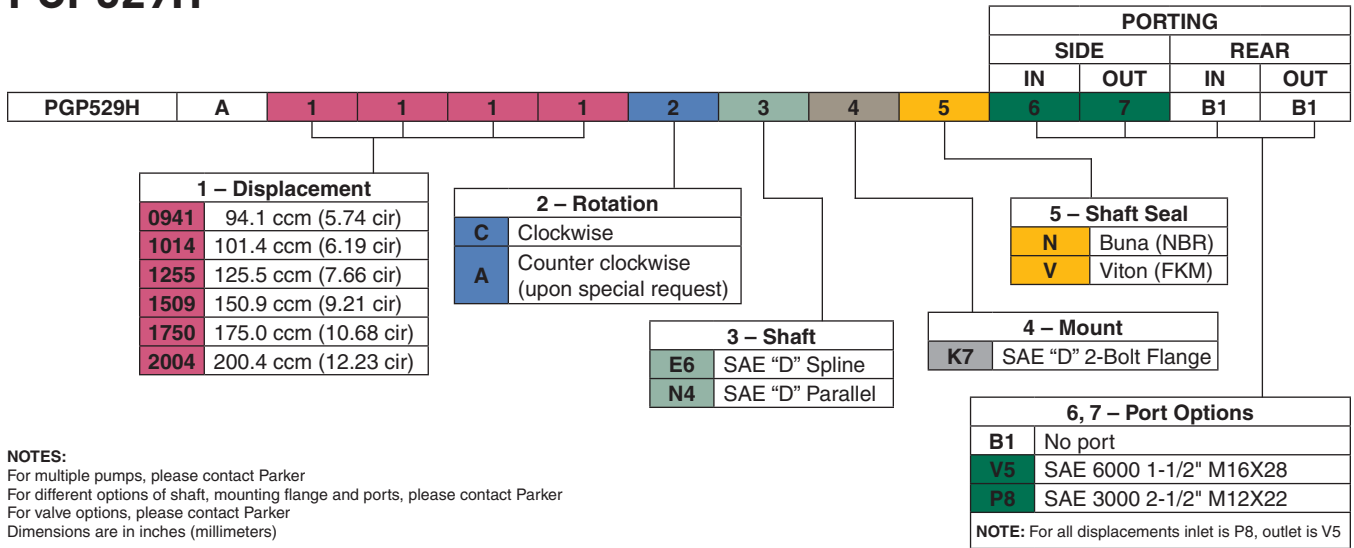


Code	Displacement cc's/ rev. (cu.in)	GPM (Liters)		PSI (bar)		RPM Min. Speed	RPM Max. Speed	Dimensions Inches (mm)		
		1725 RPM	Max. RPM	Continuous Pressure	Intermittent Pressure			A	B	C
0505	50.50 (3.08)	22.10 (83.70)	38.50 (145.60)	3481 (240)	3626 (250)	350	3000	6.18 (157.00)	2.78 (70.5)	2.78 (70.5)
0635	63.50 (3.88)	27.80 (105.30)	40.30 (152.50)	2901 (200)	3046 (210)	300	2500	6.54 (166.00)	2.95 (75.0)	3.09 (78.5)
0750	75.00 (4.58)	32.80 (124.30)	41.90 (158.50)	2466 (170)	2611 (180)	300	2200	6.85 (174.00)	3.11 (79.0)	3.25 (82.5)
0909	90.90 (5.55)	39.80 (150.70)	50.80 (192.20)	2031 (140)	2176 (150)	300	2000	7.28 (185.00)	3.33 (84.5)	3.47 (88.0)



WARNING: This product can expose you to chemicals including lead or DEHP which are known to the state of California to cause cancer, birth defects, and other reproductive harm. www.p65warnings.ca.gov

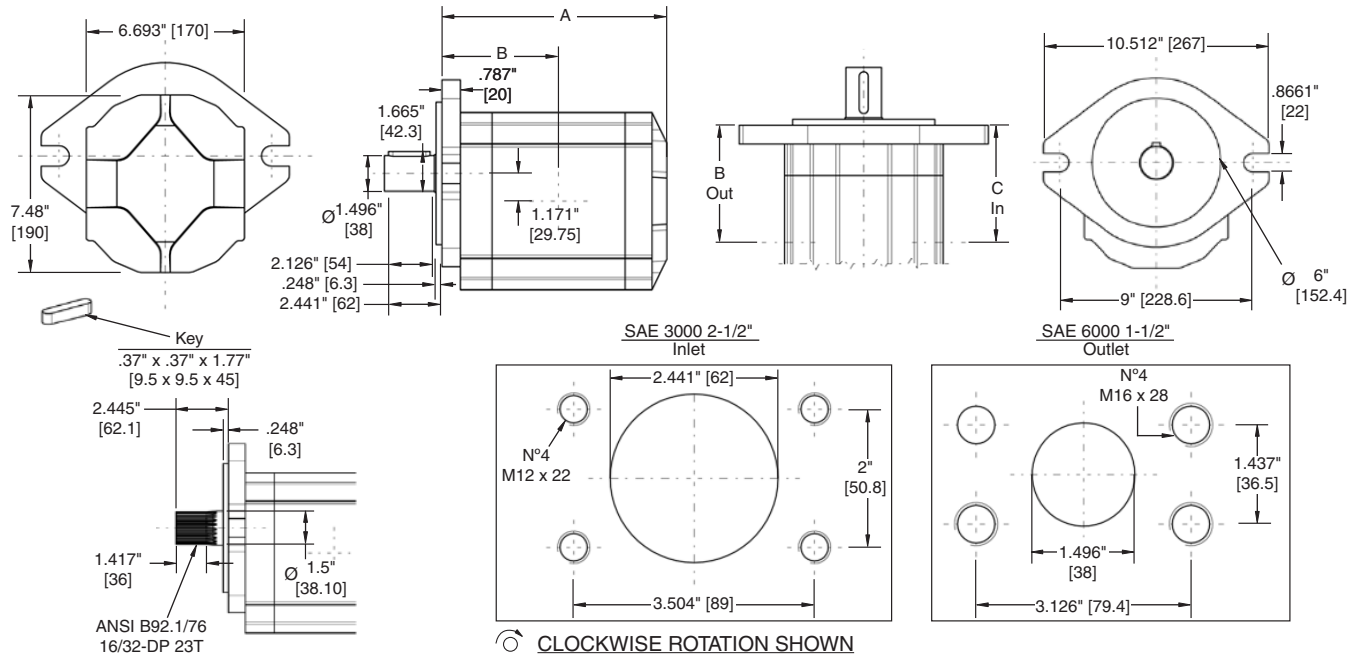
PGP529H



NOTES:
 For multiple pumps, please contact Parker
 For different options of shaft, mounting flange and ports, please contact Parker
 For valve options, please contact Parker
 Dimensions are in inches (millimeters)

Code	Displacement		GPM (Liters)		PSI (bar)		RPM Min. Speed	RPM Max. Speed	Dimensions Inches (mm)									
	cc's/ rev.	(cu.in)	800 RPM	1725 RPM	Continuous Pressure	Intermittent Pressure			A	B	C							
0941	94.10	(5.74)	17.00	(64.30)	41.20	(156.00)	2176	(150)	2321	(160)	600	1800	9.65	(245.00)	4.94	(125.5)	4.94	(128.5)
1014	101.40	(6.19)	18.30	(69.30)	44.40	(168.20)	2031	(140)	2176	(150)	600	1800	9.76	(248.00)	5.00	(127.0)	5.28	(134.0)
1255	125.50	(7.66)	22.70	(85.70)	55.00	(208.00)	1885	(130)	2031	(140)	800	1800	10.16	(258.00)	5.20	(132.0)	5.71	(145.0)
1509	150.90	(9.21)	27.20	(103.10)	66.10	(250.10)	1595	(110)	1740	(120)	800	1800	10.57	(268.50)	5.40	(137.3)	5.92	(150.3)
1750	175.00	(10.68)	31.60	(119.60)	76.60	(290.10)	1450	(100)	1595	(110)	800	1800	10.97	(278.50)	5.60	(142.3)	6.11	(155.3)
2004	200.40	(12.23)	36.20	(136.90)	87.80	(332.20)	1305	(90)	1450	(100)	800	1800	11.38	(289.00)	5.81	(147.5)	6.32	(160.5)

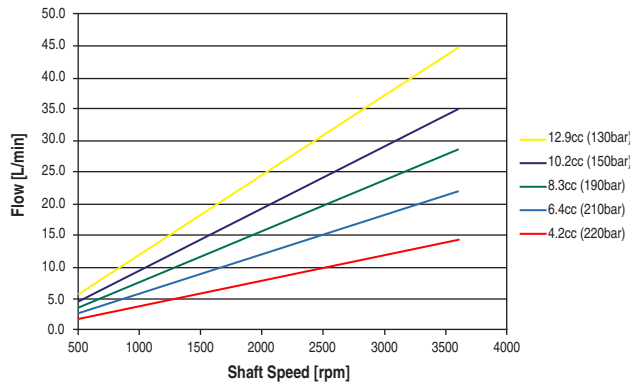
NOTE: For this PGP529H Series, it is recommended to stay in the operating viscosity range 32-100cSt, and not exceeding 130F.



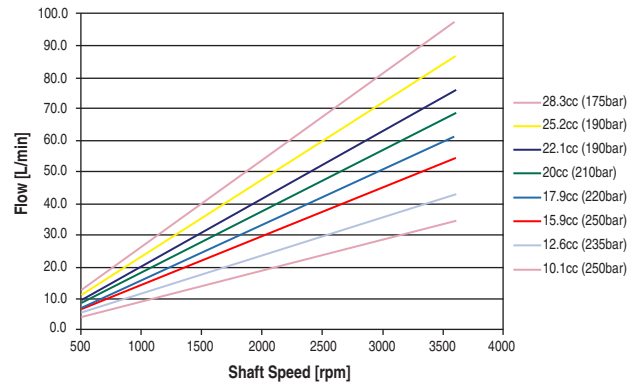
WARNING: This product can expose you to chemicals including lead or DEHP which are known to the state of California to cause cancer, birth defects, and other reproductive harm. www.p65warnings.ca.gov



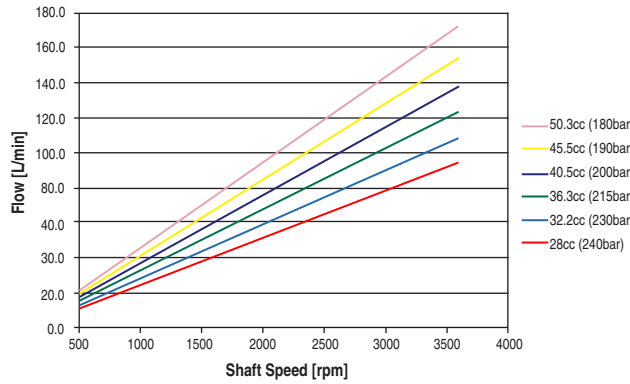
PGP505H



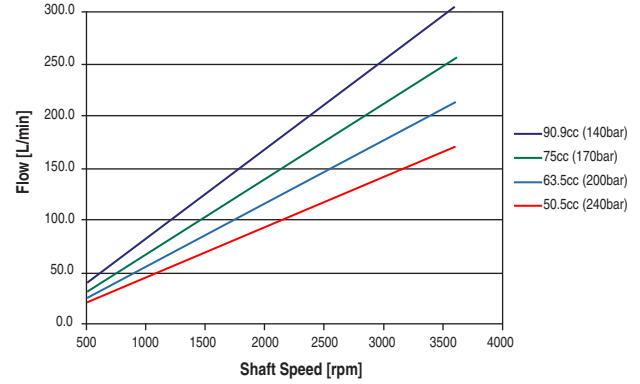
PGP511H



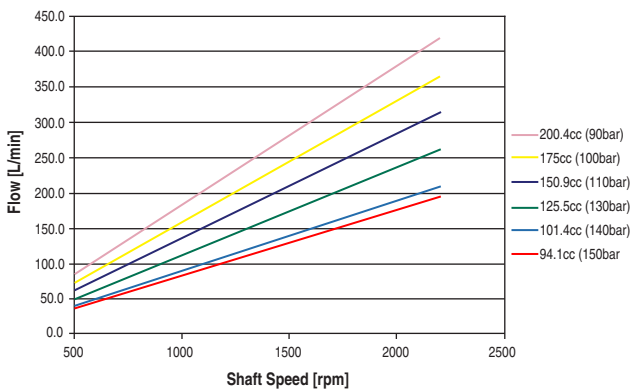
PGP517H



PGP523H



PGP529H



WARNING: This product can expose you to chemicals including lead or DEHP which are known to the state of California to cause cancer, birth defects, and other reproductive harm. www.p65warnings.ca.gov

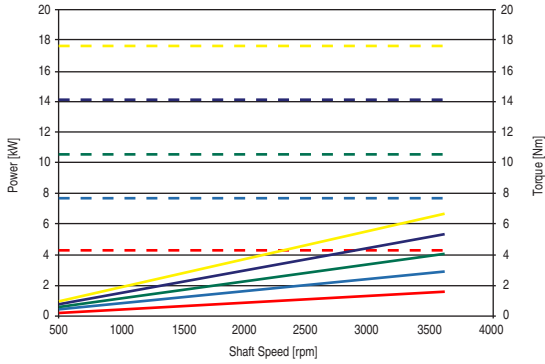


Power-Torque Performances

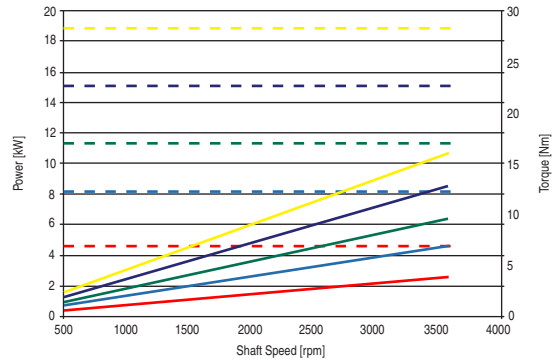
**PGP500H Series
Helicoidal Pump Program**

- Power (250bar) — Power (200bar) — Power (150bar) — Power (100bar) — Power (50bar)
- Torque (250bar) — Torque (200bar) — Torque (150bar) — Torque (100bar) — Torque (50bar)

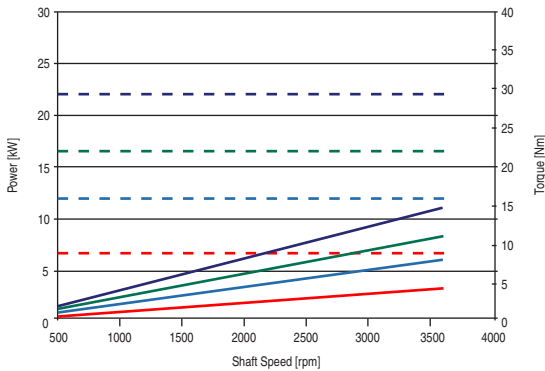
PGP505H - 4.2cc



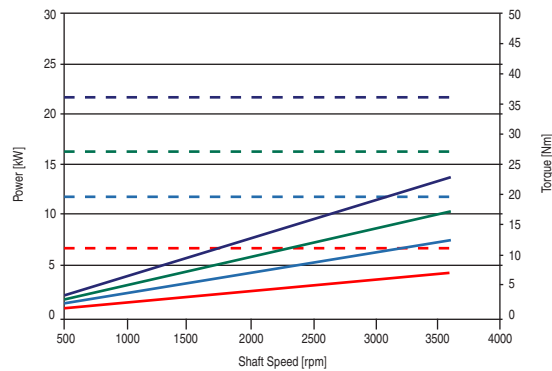
PGP505H - 6.4cc



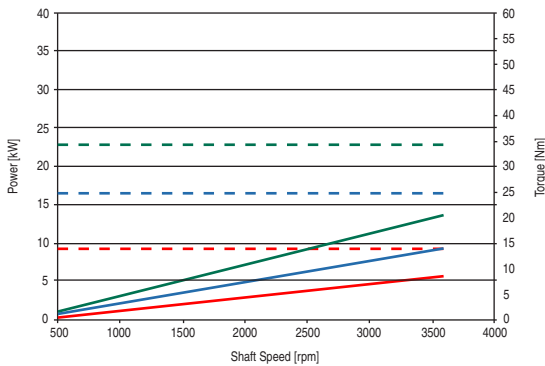
PGP505H - 8.3cc



PGP505H - 10.2cc



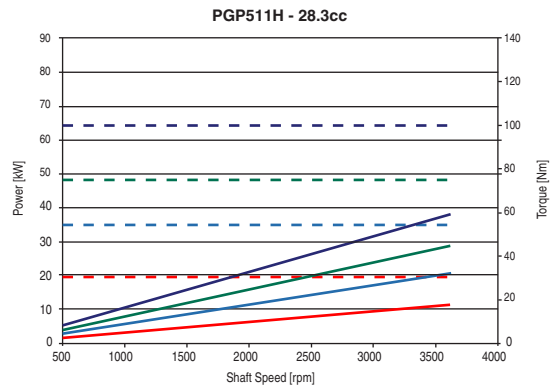
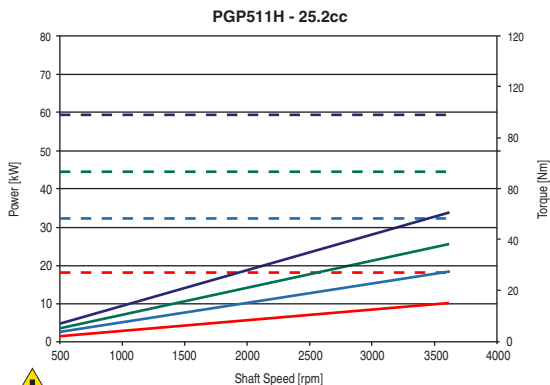
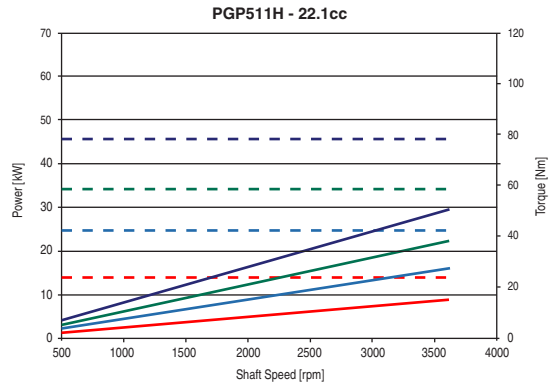
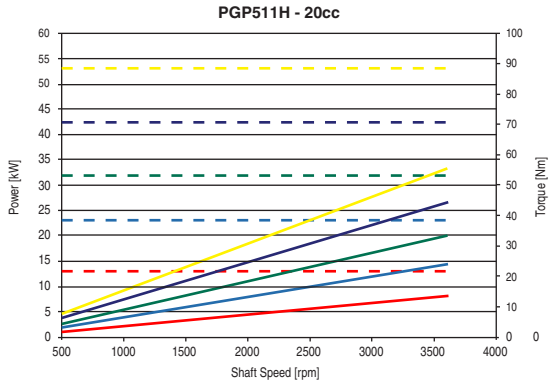
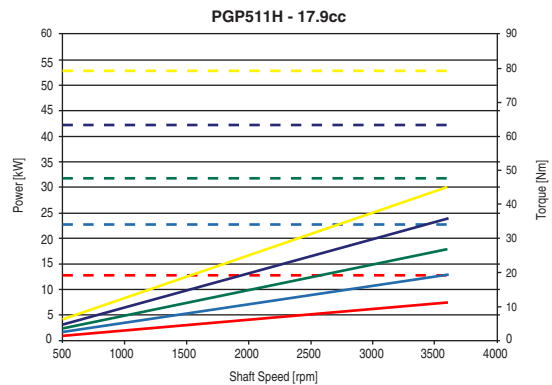
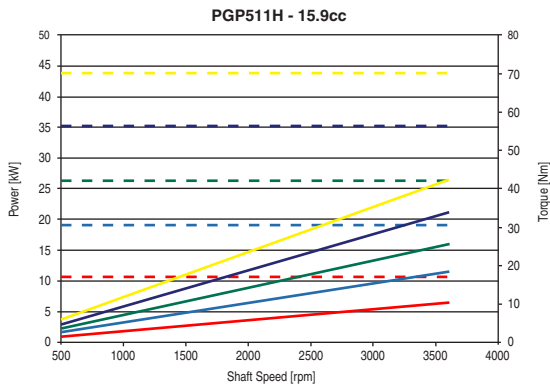
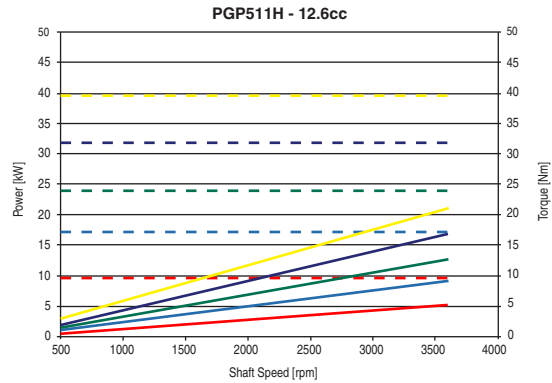
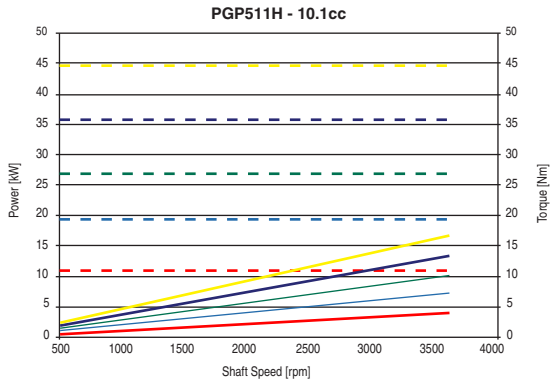
PGP505H - 12.9cc



WARNING: This product can expose you to chemicals including lead or DEHP which are known to the state of California to cause cancer, birth defects, and other reproductive harm. www.p65warnings.ca.gov



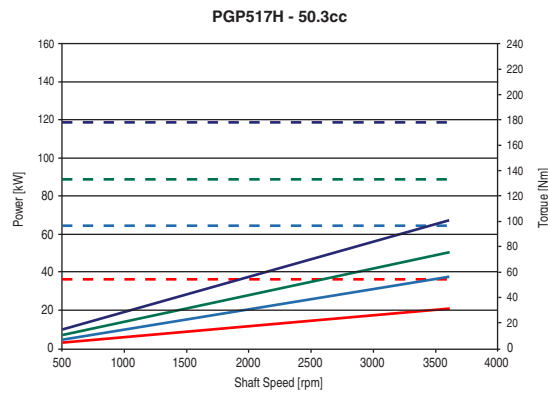
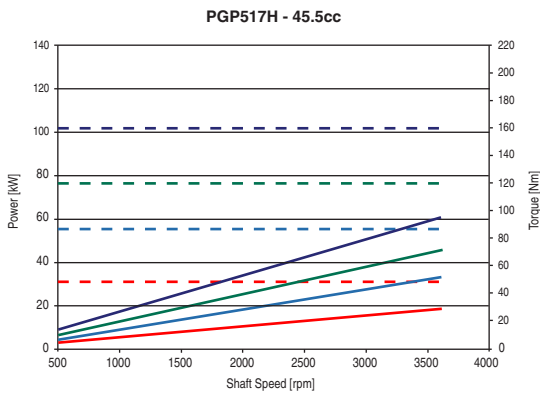
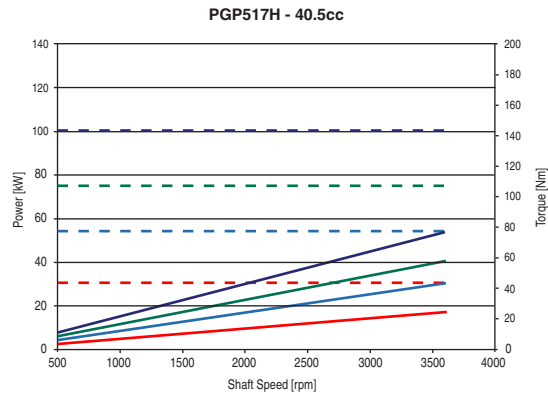
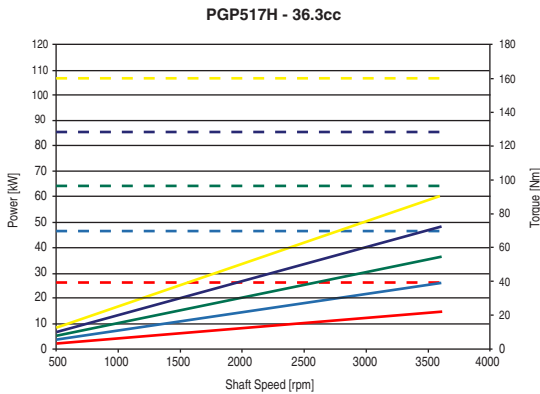
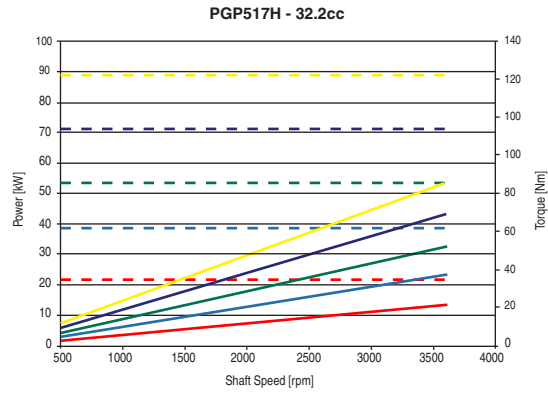
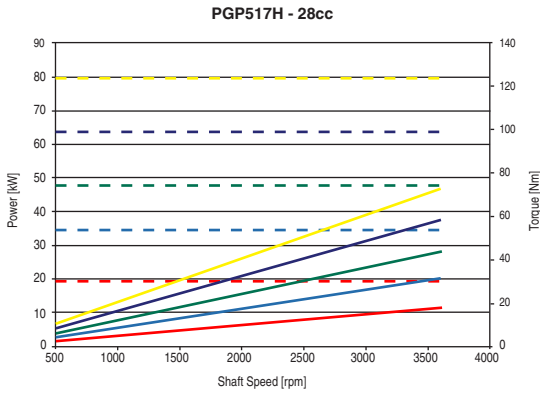
- Power (250bar) — Power (200bar) — Power (150bar) — Power (100bar) — Power (50bar)
- Torque (250bar) — Torque (200bar) — Torque (150bar) — Torque (100bar) — Torque (50bar)



WARNING: This product can expose you to chemicals including lead or DEHP which are known to the state of California to cause cancer, birth defects, and other reproductive harm. www.p65warnings.ca.gov



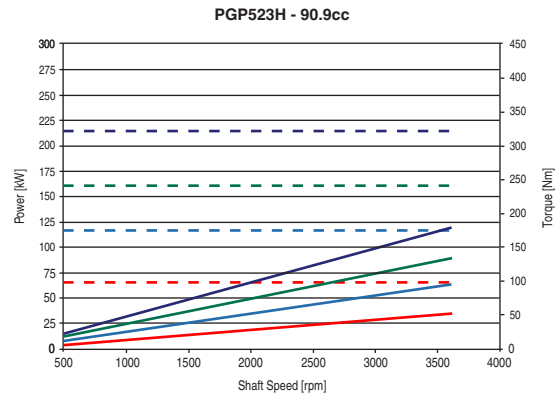
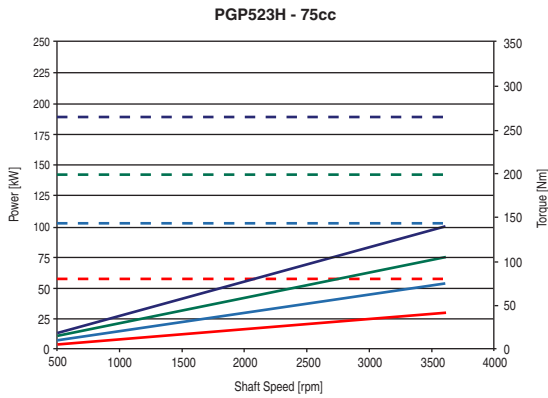
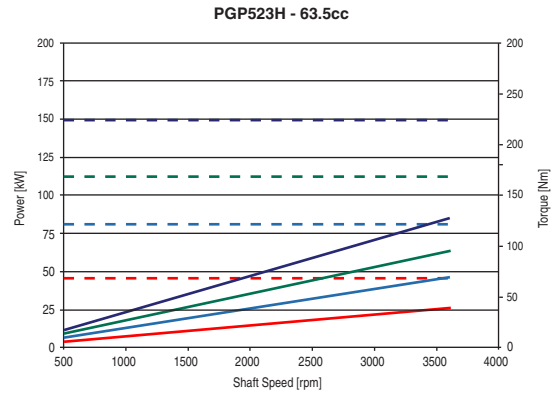
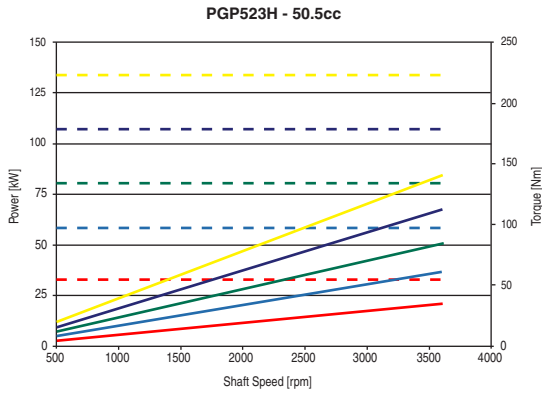
— Power (250bar) — Power (200bar) — Power (150bar) — Power (100bar) — Power (50bar)
- - - Torque (250bar) - - - Torque (200bar) - - - Torque (150bar) - - - Torque (100bar) - - - Torque (50bar)



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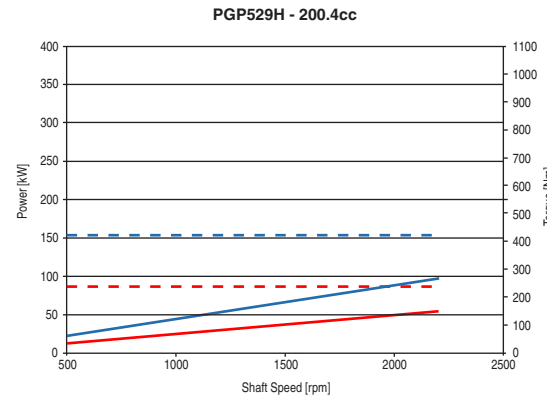
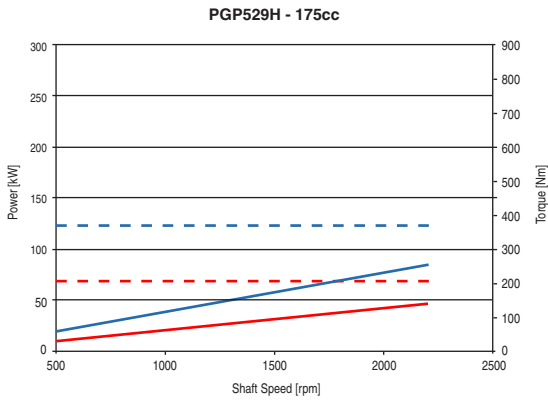
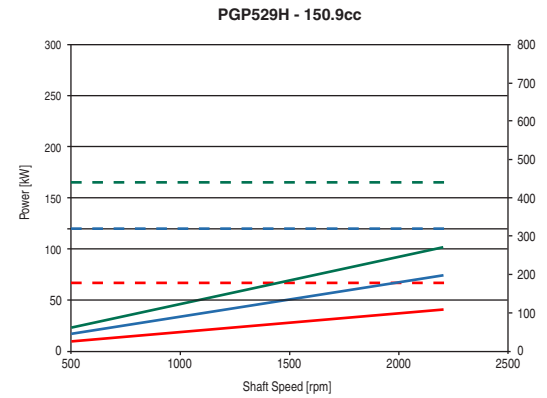
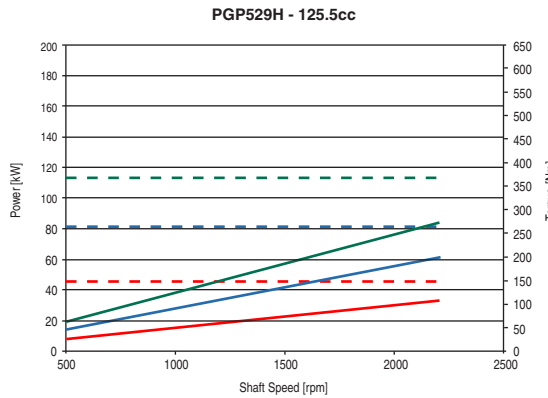
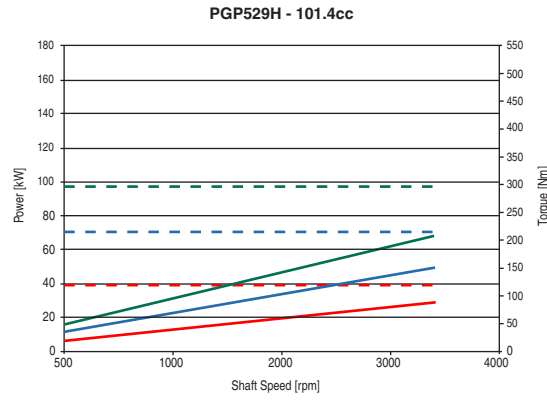
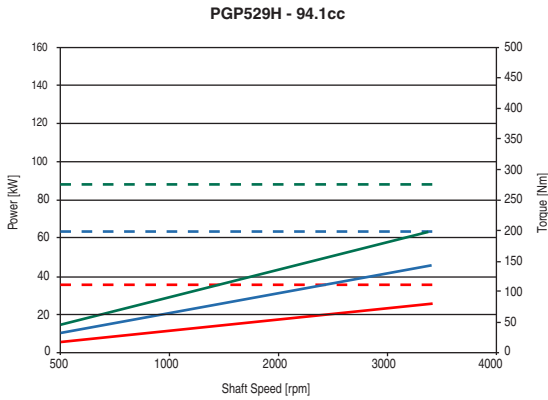
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Power-Torque Performances

**PGP500H Series
Helicoidal Pump Program**

- Power (250bar) — Power (200bar) — Power (150bar) — Power (100bar) — Power (50bar)
- Torque (250bar) — Torque (200bar) — Torque (150bar) — Torque (100bar) — Torque (50bar)



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Customer and EAU:	
Project number:	
Application Description:	

INSTALLATION	
Horizontal / vertical:	
Above liquid level:	[m]

FLUID DATA	
Type / name of fluid:	
Fluid neatness (filtration, contamination):	micron NAS
Temperature (min, normal, max):	[°C] [°C] [°C]
Viscosity (max, normal, min):	[cSt] [cSt] [cSt]

APPLICATION DATA	
Flow (min, design):	[l/min] [l/min]
Discharge pressure (normal, design):	[bar] [bar]
Suction pressure (normal, design):	[bar] [bar]
MAX pressure to handle at MIN rpm:	[bar] [rpm]
MAX pressure to handle at MAX rpm:	[bar] [rpm]

Cycle description:		1	2	3	4	5	6	
	speed							(rpm)
	flow							(lpm)
	pressure							(bar)
	time							(sec)

Other cycle information (cycle description):	
Drawing provided by Customer (flag):	YES NO

ELECRICAL MOTOR	
To be supplied by Parker GPD? (yes, no):	
Driving coupling (select the right one):	[Elastic standard] YES [Direct coupling without bellhouse]
Rated speed:	[rpm]
Power:	[kW]
Frequency:	[Hz]

PUMP OPTIONS	
Rotation direction (select the right one):	[CW standard] [CCW]
Pump body material requirements:	
Pump certifications required:	
Pump test required:	
Other special pump requirement:	

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Offer of Sale

1. Definitions. As used herein, the following terms have the meanings indicated.

- Buyer:** means any customer receiving a Quote for Products from Seller.
- Goods:** means any tangible part, system or component to be supplied by the Seller.
- Products:** means the Goods, Services and/or Software as described in a Quote provided by the Seller.
- Quote:** means the offer or proposal made by Seller to Buyer for the supply of Products.
- Seller:** means Parker Hannifin Corporation, including all divisions and businesses thereof.
- Services:** means any services to be supplied by the Seller.
- Software:** means any software related to the Products, whether embedded or separately downloaded.
- Terms:** means the terms and conditions of this Offer of Sale or any newer version of the same as published by Seller electronically at www.parker.com/saleterms.

2. Terms. All sales of Products by Seller are contingent upon, and will be governed by, these Terms and, these Terms are incorporated into any Quote provided by Seller to any Buyer. Buyer's order for any Products whether communicated to Seller verbally, in writing, by electronic data interface or other electronic commerce, shall constitute acceptance of these Terms. Seller objects to any contrary or additional terms or conditions of Buyer. Reference in Seller's order acknowledgement to Buyer's purchase order or purchase order number shall in no way constitute an acceptance of any of Buyer's terms of purchase. No modification to these Terms will be binding on Seller unless agreed to in writing and signed by an authorized representative of Seller.

3. Price; Payment. The Products set forth in Seller's Quote are offered for sale at the prices indicated in Seller's Quote. Unless otherwise specifically stated in Seller's Quote, prices are valid for thirty (30) days and do not include any sales, use, or other taxes or duties. Seller reserves the right to modify prices at any time to adjust for any raw material price fluctuations. Unless otherwise specified by Seller, all prices are F.C.A. Seller's facility (INCOTERMS2010). All sales are contingent upon credit approval and payment for all purchases is due thirty (30) days from the date of invoice (or such date as may be specified in the Quote). Unpaid invoices beyond the specified payment date incur interest at the rate of 1.5% per month or the maximum allowable rate under applicable law.

4. Shipment; Delivery; Title and Risk of Loss. All delivery dates are approximate. Seller is not responsible for damages resulting from any delay. Regardless of the manner of shipment, delivery occurs and title and risk of loss or damage pass to Buyer, upon placement of the Products with the shipment carrier at Seller's facility. Unless otherwise agreed, Seller may exercise its judgment in choosing the carrier and means of delivery. No deferral of shipment at Buyers' request beyond the respective indicated shipping date will be made except on terms that will indemnify, defend and hold Seller harmless against all loss and additional expense. Buyer shall be responsible for any additional shipping charges incurred by Seller due to Buyer's acts or omissions.

5. Warranty. The warranty related to the Products is as follows: (i) Goods are warranted against defects in material or workmanship for a period of twelve (12) months from the date of delivery or 2,000 hours of use, whichever occurs first; (ii) Services shall be performed in accordance with generally accepted practices and using the degree of care and skill that is ordinarily exercised and customary in the field to which the Services pertain and are warranted for a period of six (6) months from the completion of the Services by Seller; and (iii) Software is only warranted to perform in accordance with applicable specifications provided by Seller to Buyer for ninety (90) days from the date of delivery or, when downloaded by a Buyer or end user, from the date of the initial download. All prices are based upon the exclusive limited warranty stated above, and upon the following disclaimer: **DISCLAIMER OF WARRANTY: THIS WARRANTY IS THE SOLE AND ENTIRE WARRANTY PERTAINING TO PRODUCTS. SELLER DISCLAIMS ALL OTHER WARRANTIES, EXPRESS AND IMPLIED, INCLUDING**

DESIGN, NON INFRINGEMENT, MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE. SELLER DOES NOT WARRANT THAT THE SOFTWARE IS ERROR-FREE OR FAULT-TOLERANT, OR THAT BUYER'S USE THEREOF WILL BE SECURE OR UNINTERRUPTED. BUYER AGREES AND ACKNOWLEDGES THAT UNLESS OTHERWISE AUTHORIZED IN WRITING BY SELLER THE SOFTWARE SHALL NOT BE USED IN CONNECTION WITH HAZARDOUS OR HIGH RISK ACTIVITIES OR ENVIRONMENTS. EXCEPT AS EXPRESSLY STATED HEREIN, ALL PRODUCTS ARE PROVIDED "AS IS".

6. Claims; Commencement of Actions. Buyer shall promptly inspect all Products upon receipt. No claims for shortages will be allowed unless reported to the Seller within ten (10) days of delivery. Buyer shall notify Seller of any alleged breach of warranty within thirty (30) days after the date the non-conformance is or should have been discovered by Buyer. Any claim or action against Seller based upon breach of contract or any other theory, including tort, negligence, or otherwise must be commenced within twelve (12) months from the date of the alleged breach or other alleged event, without regard to the date of discovery.


7. LIMITATION OF LIABILITY. IN THE EVENT OF A BREACH OF WARRANTY, SELLER WILL, AT ITS OPTION, REPAIR OR REPLACE THE NON-CONFORMING PRODUCT, RE-PERFORM THE SERVICES, OR REFUND THE PURCHASE PRICE PAID WITHIN A REASONABLE PERIOD OF TIME. IN NO EVENT IS SELLER LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR AS THE RESULT OF, THE SALE, DELIVERY, NON-DELIVERY, SERVICING, NON-COMPLETION OF SERVICES, USE, LOSS OF USE OF, OR INABILITY TO USE THE PRODUCTS OR ANY PART THERE OF, LOSS OF DATA, IDENTITY, PRIVACY, OR CONFIDENTIALITY, OR FOR ANY CHARGES OR EXPENSES OF ANY NATURE INCURRED WITHOUT SELLER'S WRITTEN CONSENT, WHETHER BASED IN CONTRACT, TORT OR OTHER LEGAL THEORY. IN NO EVENT SHALL SELLER'S LIABILITY UNDER ANY CLAIM MADE BY BUYER EXCEED THE PURCHASE PRICE PAID FOR THE PRODUCTS.

8. Loss to Buyer's Property. Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which are or become Buyer's property, will be considered obsolete and maybe destroyed by Seller after two (2) consecutive years have elapsed without Buyer ordering the Products manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.

9. Special Tooling. Special Tooling includes but is not limited to tooling, jigs, fixtures and associated manufacturing equipment acquired or necessary to manufacture Products. A tooling charge may be imposed for any Special Tooling. Such Special Tooling shall be and remain Seller's property not withstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in Special Tooling belonging to Seller that is utilized in the manufacture of the Products, even if such Special Tooling has been specially converted or adapted for such manufacture and not withstanding any charges paid by Buyer. Unless otherwise agreed, Seller has the right to alter, discard or otherwise dispose of any Special Tooling or other property in its sole discretion at any time.

10. Security Interest. To secure payment of all sums due, Seller retains a security interest in all Products delivered to Buyer and, Buyer's acceptance of these Terms is deemed to be a Security Agreement under the Uniform Commercial Code. Buyer authorizes Seller as its attorney to execute and file on Buyer's behalf all documents Seller deems necessary to perfect its security interest.

11. User Responsibility. The Buyer through its own analysis and testing, is solely responsible for making the final selection of the Products and assuring that all performance, endurance, maintenance, safety and warning requirements of the application of the Products are met. The Buyer must analyze all aspects of the application and follow applicable industry standards, specifications, and other technical information provided with the Product. If Seller provides Product options based upon data or specifications provided

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Offer of Sale (Cont'd)

by the Buyer, the Buyer is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the Products. In the event the Buyer is not the end-user, Buyer will ensure such end-user complies with this paragraph.

12. Use of Products, Indemnity by Buyer. Buyer shall comply with all instructions, guides and specifications provided by Seller with the Products. Unauthorized Uses. If Buyer uses or resells the Products for any uses prohibited in Seller's instructions, guides or specifications, or Buyer otherwise fails to comply with Seller's instructions, guides and specifications, Buyer acknowledges that any such use, resale, or non-compliance is at Buyer's sole risk. Buyer shall indemnify, defend, and hold Seller harmless from any losses, claims, liabilities, damages, lawsuits, judgments and costs (including attorney fees and defense costs), whether for personal injury, property damage, intellectual property infringement or any other claim, brought by or incurred by Buyer, Buyer's employees, or any other person, arising out of: (a) improper selection, application, design, specification or other misuse of Products provided by Seller; (b) any act or omission, negligent or otherwise, of Buyer; (c) Seller's use of patterns, tooling, equipment, plans, drawings, designs or specifications or other information or things furnished by Buyer; (d) damage to the Products from an external cause, repair or attempted repair by anyone other than Seller, failure to follow instructions, guides and specifications provided by Seller, use with goods not provided by Seller, or opening, modifying, deconstructing or tampering with the Products for any reason; or (e) Buyer's failure to comply with these Terms. Seller shall not indemnify Buyer under any circumstance except as otherwise provided in these Terms.

13. Cancellations and Changes. Buyer may not cancel or modify any order for any reason, except with Seller's written consent and upon terms that will indemnify, defend and hold Seller harmless against all direct, incidental and consequential loss or damage. Seller, at any time, may change Product features, specifications, designs and availability.

14. Limitation on Assignment. Buyer may not assign its rights or obligations without the prior written consent of Seller.

15. Force Majeure. Seller does not assume the risk and is not liable for delay or failure to perform any of Seller's obligations by reason of events or circumstances beyond its reasonable control ("Events of Force Majeure"). Events of Force Majeure shall include without limitation: accidents, strikes or labor disputes, acts of any government or government agency, acts of nature, delays or failures in delivery from carriers or suppliers, shortages of materials, or any other cause beyond Seller's reasonable control.

16. Waiver and Severability. Failure to enforce any provision of these Terms will not invalidate that provision; nor will any such failure prejudice Seller's right to enforce that provision in the future. Invalidation of any provision of these Terms by legislation or other rule of law shall not invalidate any other provision herein and, the remaining provisions will remain in full force and effect.

17. Termination. Seller may terminate any agreement governed by or arising from these Terms for any reason and at anytime by giving Buyer thirty (30) days prior written notice. Seller may immediately terminate, in writing, if Buyer: (a) breaches any provision of these Terms (b) appoints a trustee, receiver or custodian for all or any part of Buyer's property (c) files a petition for relief in bankruptcy on its own behalf, or one if filed by a third party (d) makes an assignment for the benefit of creditors; or (e) dissolves its business or liquidates all or a majority of its assets.

18. Ownership of Software. Seller retains ownership of all Software supplied to Buyer hereunder. In no event shall Buyer obtain any greater right in and to the Software than a right in the nature of a license limited to the use thereof and subject to compliance with any other terms provided with the Software.

19. Indemnity for Infringement of Intellectual Property Rights. Seller is not liable for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights ("Intellectual Property Rights") except as provided in this Section. Seller will defend at its expense and will pay the cost of any settlement or


damages awarded in an action brought against Buyer based on a third party claim that one or more of the Products sold hereunder infringes the Intellectual Property Rights of a third party in the country of delivery of the Products by the Seller to the Buyer. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of any such claim, and Seller having sole control over the defense of the claim including all negotiations for settlement or compromise. If one or more Products sold hereunder is subject to "such a claim, Seller may, at its sole expense and option, procure for Buyer the right to continue using the Products, replace or modify the Products so as to render them non-infringing, or offer to accept return of the Products and refund the purchase price less a reasonable allowance for depreciation. Seller has no obligation or liability for any claim of infringement: (i) a rising from information provided by Buyer; or (ii) directed to any Products provided hereunder for which the designs are specified in whole or part by Buyer; or (iii) resulting from the modification, combination or use in a system of any Products provided hereunder. The foregoing provisions of this Section constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for such claims of infringement of Intellectual Property Rights.

20. Governing Law. These Terms and the sale and delivery of all Products are deemed to have taken place in, and shall be governed and construed in accordance with, the laws of the State of Ohio, as applicable to contracts executed and wholly performed therein and without regard to conflicts of laws principles. Buyer irrevocably agrees and consents to the exclusive jurisdiction and venue of the courts of Cuyahoga County, Ohio with respect to any dispute, controversy or claim arising out of or relating to the sale and delivery of the Products.

21. Entire Agreement. These Terms, along with the terms set forth in the main body of any Quote, forms the entire agreement between the Buyer and Seller and constitutes the final, complete and exclusive expression of the terms of sale. In the event of a conflict between any term set forth in the main body of a Quote and these Terms, the terms set forth in the main body of the Quote shall prevail. All prior or contemporaneous written or oral agreements or negotiations with respect to the subject matter shall have no effect. These Terms may not be modified unless in writing and signed by an authorized representative of Seller.

22. Compliance with Laws. Buyer agrees to comply with all applicable laws, regulations, and industry and professional standards, including those of the United States of America, and the country or countries in which Buyer may operate, including without limitation the U.S. Foreign Corrupt Practices Act ("FCPA"), the U.S. Anti-Kickback Act ("Anti-Kickback Act"), U.S. and E.U. export control and sanctions laws ("Export Laws"), the U.S. Food Drug and Cosmetic Act ("FDCA"), and the rules and regulations promulgated by the U.S. Food and Drug Administration ("FDA"), each as currently amended. Buyer agrees to indemnify, defend, and hold harmless Seller from the consequences of any violation of such laws, regulations and standards by Buyer, its employees or agents. Buyer acknowledges that it is familiar with all applicable provisions of the FCPA, the Anti-Kickback Act, Export Laws, the FDCA and the FDA and certifies that Buyer will adhere to the requirements thereof and not take any action that would make Seller violate such requirements. Buyer represents and agrees that Buyer will not make any payment or give anything of value, directly or indirectly, to any governmental official, foreign political party or official thereof, candidate for foreign political office, or commercial entity or person, for any improper purpose, including the purpose of influencing such person to purchase Products or otherwise benefit the business of Seller. Buyer further represents and agrees that it will not receive, use, service, transfer or ship any Product from Seller in a manner or for a purpose that violates Export Laws or would cause Seller to be in violation of Export Laws."

01/17

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Your Local Authorized Parker Distributor