



PGP020™ Series

Pumps and Motors

Catalog HY09-020/US



The Parker Hannifin Gear Pump Division Assures:

- Consistent quality
- Technical innovation
- Premier customer service

Worldwide Sales and Service

Parker operates sales and service centers in major industrial areas worldwide. Call 1-800-C-PARKER for more information, or for a synopsis of the Gear Pump Division, contact a Parker representative.

The Gear Pump Division's ability to engineer specialty products for unique applications has kept us at the forefront of technology, and ensured our position as the industry leader. Our success has come from providing a quality product with excellent sales and service support.

We manufacture hydraulic components for a wide range of industries including:

- Construction
- Refuse/dump truck
- Material handling
- Forestry
- Agriculture
- Industrial



WARNING

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 final selection of 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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Big Performance In A Small Package

Parker Hannifin’s PGP020 gear pumps and motors are an ideal power for the truck industry. With the ½" gears, it measures only 6" from mounting flange to the port end cover and weighs only 25 lbs.

The PGP020 can produce flows up to 29 gpm @ 2400 rpm up to 3000 psi; output to 39 gpm @ 2400 rpm up to 2500 psi. Motors and pumps can be bi-rotational.

A variety of drive shafts and mounting styles are offered to meet your needs. Standard features include rigid, one-piece drive shaft and gears and pressure-balanced thrust plated, which assure top efficiency. A rugged, high-strength, cast iron body provides durability.

Multiple Units

PGP020 pumps and motors can be assembled in tandem to provide additional pump flow or more motor torque from on the drive shaft. Each gear section is connected to the drive shaft by a connecting shaft. The strength of the shafts (their PL factor) determines the maximum gear width the pump or motor can turn at a given pressure.

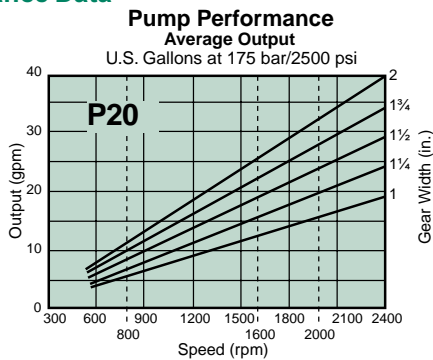
To determine the unit’s PL, multiply the operating pressure (P) by the total gear width (L). Example: Assume a PGP020 pump will be operating at 3000 psi and have a 1½" gear housing. Multiply the total gear width of 1½" by the operating pressure.

$(1.5" \text{ gear width} \times 3000 \text{ psi}) = 4500$

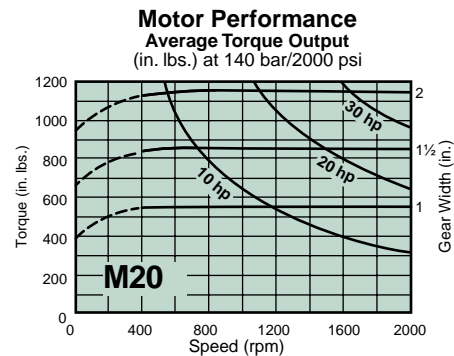
This pump needs a drive shaft with a PL factor of 4500 or more to operate successfully. The PL factor for each drive shaft is given on pages 10 and 11.

NOTE: In accordance with our policy of continuing product development, we reserve the right to change specifications shown in this catalog without notice.

Performance Data



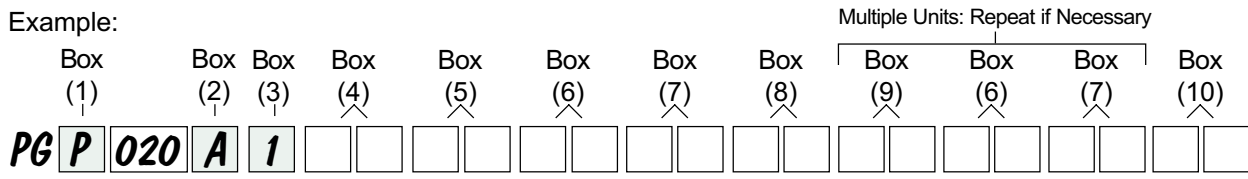
Pump Speed	Gear Width-Output (GPM)				
	1"	1¼"	1½"	1¾"	2"
900	6.5	8.0	10.0	12.0	13.5
1200	9.0	11.5	14.0	16.0	18.5
1500	11.5	14.5	17.5	20.5	23.5
2100	16.5	21.0	25.0	29.5	34.0



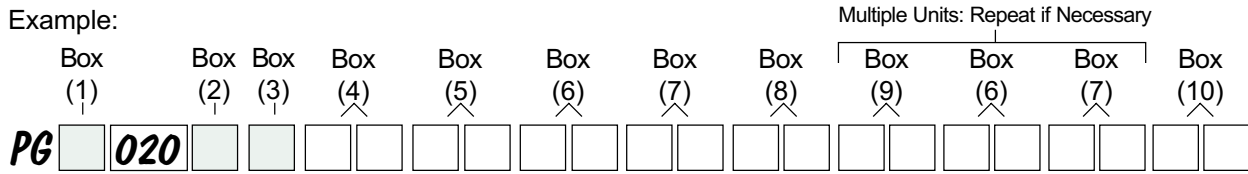
Motor Speed	Gear Width					
	1" Torque in lbs.	GPM	1½" Torque in lbs.	GPM	2" Torque in lbs.	GPM
800	550	9.0	870	13.0	1150	17.0
1200	550	13.0	870	18.0	1150	23.5
1600	550	16.0	860	23.0	1140	30.5
2000	550	19.5	850	28.0	1125	37.0

PGP020™ How to Specify Code (Boxes 1-3)

Example:



Example:



Box 1 Description	
P	Pump
M	Motor

Box 2 Unit	
A	Single
B	Tandem

Box 3 Shaft End Cover	
ORDER CODE	ROTATION – OUTBEARING – DRAIN PORT
1	Clockwise (CW) rotation
2	Counter clockwise rotation (CCW); no outboard bearing
3	Double rotation; no outboard bearing
4	CW rotation with outboard bearing
5	CCW rotation with outboard bearing
6	Double rotation with outboard bearing
8	Double rotation with outboard bearing (motor) ¼" NPT drain
9	Double rotation ; no outboard bearing (motor) ¼" NPT drain

PGP020™ How to Specify (Box 4)

Example:

Multiple Units: Repeat if Necessary

Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (6)	Box (7)	Box (10)
PG	P	020	A	1	0	5					

Example:

Multiple Units: Repeat if Necessary

Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (6)	Box (7)	Box (10)
PG		020									

Box 4 Shaft End Cover Codes				Box 4 Shaft End Cover Codes			
ORDER CODE		PICTURE / MOUNTING FLANGE TYPE		ORDER CODE		PICTURE / MOUNTING FLANGE TYPE	
05				6 BOLT FLANGE – 3.25 DIA. BOLT CIRCLE			
10				2 BOLT PAD MOUNT			
27				4 BOLT CLOVERLEAF			
42				SAE 4 BOLT “B” ANSI 101-4			
46				SAE 2/4 BOLT “B” ANSI 101 – 2/4			
94				SAE 2 BOLT “A” ANSI 82-2			
96				SAE 2 BOLT “B” ANSI 101-2 TYPE II			
97				SAE 2 BOLT “B” ANSI 101-2			

PGP020™ How to Specify (Box 5)

Example:

Multiple Units: Repeat if Necessary

Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (6)	Box (7)	Box (10)
PG	P	020	A	1	0	5	C	E			

Example:

Multiple Units: Repeat if Necessary

Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (6)	Box (7)	Box (10)
PG		020									

Box 5 Port End Cover Codes						Box 5 Port End Cover Codes					
Order Codes		O.D.T. Porting				Order Codes		N.P.T. Porting			
Single Units W/O ST	W/ST	Tandem Units		Port Size		Single Units W/O ST	W/ST	Tandem Units		Port Size	
		W/O ST	W/ST	LEFT	RIGHT			W/O ST	W/ST	LEFT	RIGHT
CE	CY	CI	CY	¾	none	BE	BY	BI	BY	no port	no port
DE	DY	DI	DY	none	¾	KE	KY	KI	KY	¾	none
FE	FY	FI	FY	¾	¾	LE	LY	LI	LY	none	¾
GE	GY	GI	GY	1	¾	ME	MY	MI	MY	¾	¾
HE	HY	HI	HY	¾	1	QU	QQ	QD	QQ	1	1
JE	JY	JI	JY	1	1	AI		AI		¾	1
MA	YO	MU	YO	1	none	EI		EI		1	¾
RA	RO	SU	RO	none	1						

NOTE: W/O ST columns denote units without support studs, and W/ST columns denote units with support studs.

PGP020™ How to Specify N.P.T. Ports (Boxes 6 & 7)

(Only When Ordering N.P.T. Ports, See Pages 5-6 for O.D Tube Porting and Page 7 for Split Flange Porting)

Example:

Multiple Units: Repeat if Necessary

Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (6)	Box (7)	Box (10)										
PG	P	020	A	1	0	5	C	E	A	B	0	7									

Example:

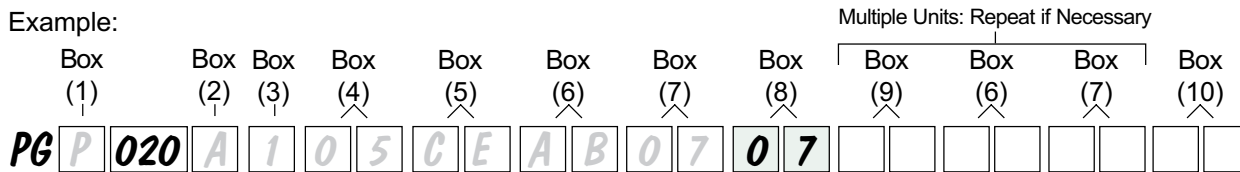
Multiple Units: Repeat if Necessary

Box (1)	Box (2)	Box (3)	Box (4)	Box (5)	Box (6)	Box (7)	Box (8)	Box (9)	Box (6)	Box (7)	Box (10)											
PG		020																				

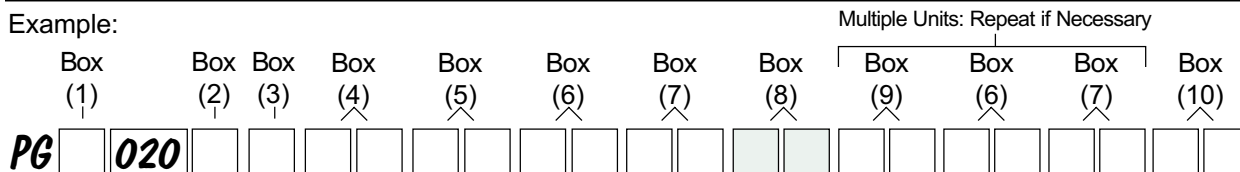
Box 6 Gear Housing - N.P.T. Ports ≤ 3000 psi			Box 7 Gear Housing - N.P.T. Ports ≤ 3000 psi							
ORDER CODE	N.P.T. PORTING PORT SIZE		GEAR WIDTH AVAILABILITY							
	LEFT	RIGHT	05	07	10	12	15	17	20	
AB	none	none	X	X	X	X	X	X	X	X
IL	½	none	X	X	X	-	-	-	-	-
IM	none	½	X	X	X	-	-	-	-	-
IR	½	½	X	X	-	-	-	-	-	-
IC	¾	none	-	X	X	X	X	X	X	X
ID	none	¾	-	X	X	X	X	X	X	X
IF	¾	¾	-	X	X	X	X	X	X	X
IG	¾	1	-	-	X	X	X	X	X	X
IH	¾	1 ¼	-	-	-	-	-	X	X	-
IJ	1	¾	-	-	X	X	X	X	X	X
IK	1 ¼	¾	-	-	-	-	-	X	X	-
YC	1	none	-	-	X	X	X	X	X	X
YD	none	1	-	-	X	X	X	X	X	X
YE	1	1	-	-	X	X	X	X	X	X
YG	1	1 ¼	-	-	-	-	X	X	X	X
YH	1	1 ½	-	-	-	-	-	-	-	-
YJ	1 ¼	1	-	-	-	-	-	X	X	X
YK	1 ½	1	-	-	-	-	-	-	-	-
IA	1 ¼	none	-	-	-	-	-	X	X	X
IB	none	1 ¼	-	-	-	-	-	X	X	X
YL	1 ¼	1 ¼	-	-	-	-	-	X	X	X

PGP020™ How to Specify (Box 8)

Example:



Example:

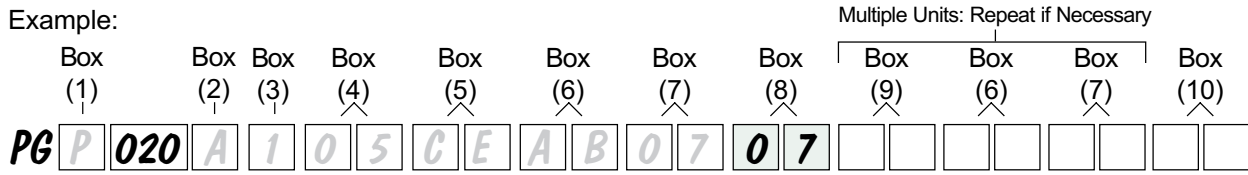


Box 8 Drive Shafts		Box 8 Drive Shafts	
ORDER CODE	PICTURE / MOUNTING FLANGE TYPE	ORDER CODE	PICTURE / MOUNTING FLANGE TYPE
07	<p>PL=5850</p> <p>S.A.E. "C" SPLINE/ANSI 32-4 (2 PIECE SHAFT,CONTINENTAL)</p>	30	<p>PL=4925</p> <p>S.A.E. "B" KEYED ANSI 22-1</p>
12	<p>PL=4150</p> <p>.750 DIA. KEYED SHAFT (.19 WIDE KEY) (2 PIECE SHAFT,CONTINENTAL)</p>	32	<p>PL=4630</p> <p>CLUTCH PUMP SHAFT</p>
15	<p>PL=4925</p> <p>S.A.E. "B" THREADED + KEY ANSI 22-2 (2 PIECE SHAFT,CONTINENTAL)</p>	43	<p>PL=7850</p> <p>S.A.E. "B-B" KEYED ANSI 25-1 MODIFIED</p>
25	<p>PL=8580</p> <p>S.A.E. "B" SPINE ANSI 22-4</p>	65	<p>PL=6035</p> <p>S.A.E. "B" SPLINE ANSI 22-4 TYPE II</p>

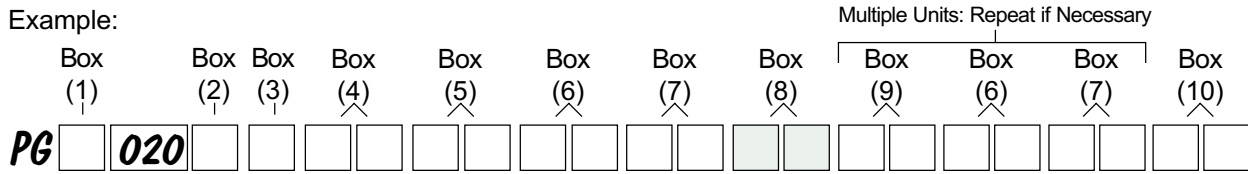
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PGP020™ How to Specify (Box 8)

Example:



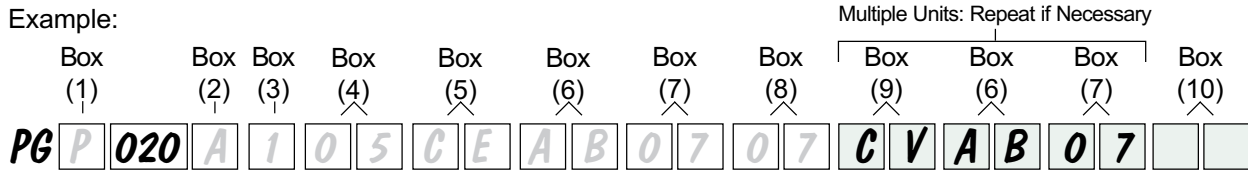
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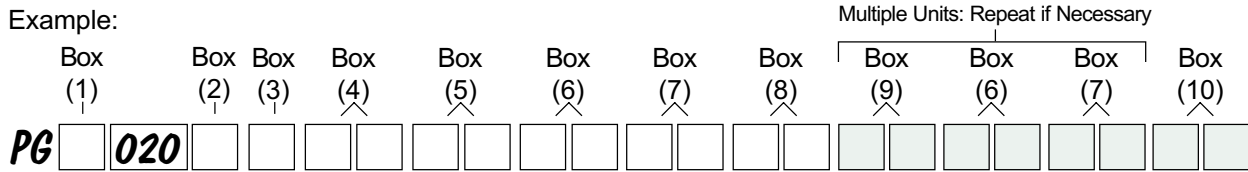
Box 8 Drive Shafts		Box 8 Drive Shafts	
ORDER CODE	PICTURE / MOUNTING FLANGE TYPE	ORDER CODE	PICTURE / MOUNTING FLANGE TYPE
66	<p>PL=4925</p> <p>S.A.E. "B" KEYED ANSI 22-1 TYPE II</p>	90	<p>PL=4925</p> <p>S.A.E. "B" THREADED + KEY ANSI 22-2 MODIFIED</p>
67	<p>PL=7850</p> <p>S.A.E. "B" KEYED ANSI 22-1 TYPE II</p>	95	<p>PL=2850</p> <p>S.A.E. "A" SPLINE ANSI 16-4</p>
68	<p>PL=12000</p> <p>1.00 DIA. 6 TOOTH SPLINE SHAFT</p>	98	<p>PL=13180</p> <p>S.A.E. "B-B" SPLINE ANSI 25-4</p>

PGP020™ How to Specify (Box 9)

Example:



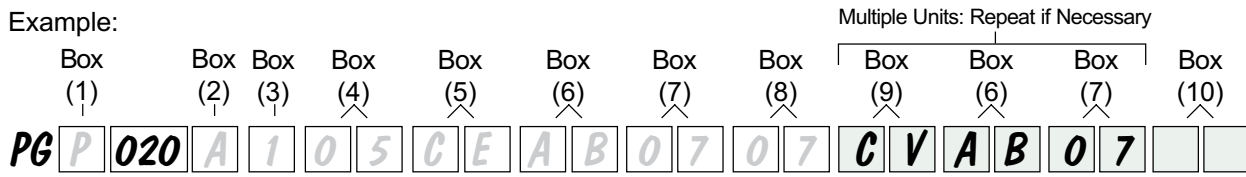
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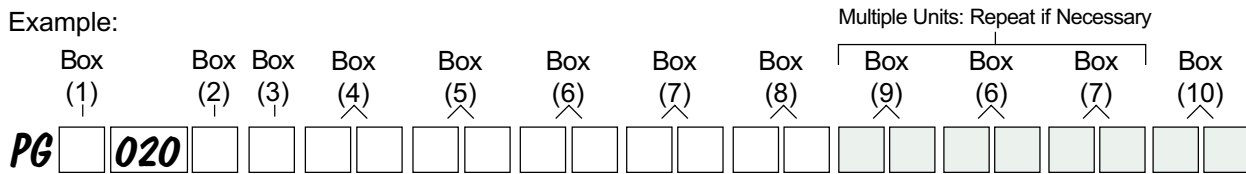
Box 9 Bearing Carrier Codes- Flow Dividers									
ROTATION FLOWPATH CW-Clockwise CCW-Cnt. Clockwise	N.P.T. PORTING PORT SIZE			SPLIT FLANGE PORTING PORT SIZE			O.D.T. PORTING PORT SIZE		
	CODE	LEFT	RIGHT	CODE	LEFT	RIGHT	CODE	LEFT	RIGHT
CD SHT RF 20-H1 	C	none	none	LB	1	none	CB	1	none
	TB	1	none	-	-	-	DB	1 ¼	none
	VB	1 ¼	none	-	-	-	FB	1 ½	none
CD SHT RF 20-H2 	D	none	none	BL	none	1	BC	none	1
	BT	none	1	-	-	-	BD	none	1 ¼
	BV	none	1 ¼	-	-	-	BF	none	1 ½
CD SHT RF 20-H4 	TX	1	¾	LR	1	¾	CJ	1	¾
	VX	1 ¼	¾	BR	none	¾	DJ	1 ¼	¾
	VZ	1 ¼	1	-	-	-	DK	1 ¼	1
	-	-	-	-	-	-	FJ	1 ½	¾
	-	-	-	-	-	-	FK	1 ½	1
CD SHT RF 20-H5 	JT	¾	1	XL	¾	1	RC	¾	1
	JV	¾	1 ¼	-	-	-	RD	¾	1 ¼
	KV	1	1 ¼	-	-	-	RF	¾	1 ½
	-	-	-	-	-	-	SD	1	1 ¼
	-	-	-	-	-	-	SF	1	1 ½
CD SHT RF 20-H6 	TJ	1	¾	LX	1	CR	1	¾	
	VJ	1 ¼	¾	-	-	DR	1 ¼	¾	
	VK	1 ¼	1	-	-	-	DS	1 ¼	1
	-	-	-	-	-	-	FR	1 ½	¾
	-	-	-	-	-	-	FS	1 ½	1
CD SHT RF 20-H7 	XT	¾	1	RB	¾	none	JC	¾	1
	XV	¾	1 ¼	RL	¾	1	JD	¾	1 ¼
	ZV	1	1 ¼	-	-	-	JP	¾	none
	-	-	-	-	-	-	JF	¾	1 ½
	-	-	-	-	-	-	KD	1	1 ¼
CD SHT RF 20-H8 	ZX	1	¾	SR	1	¾	KJ	1	¾

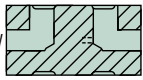
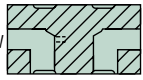
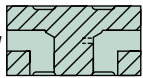
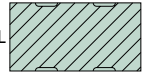
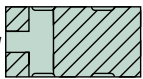
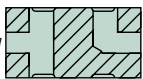
PGP020™ How to Specify (Box 9) (Continued)

Example:



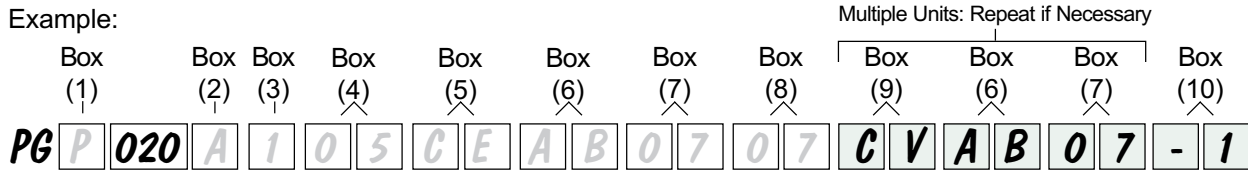
Example:



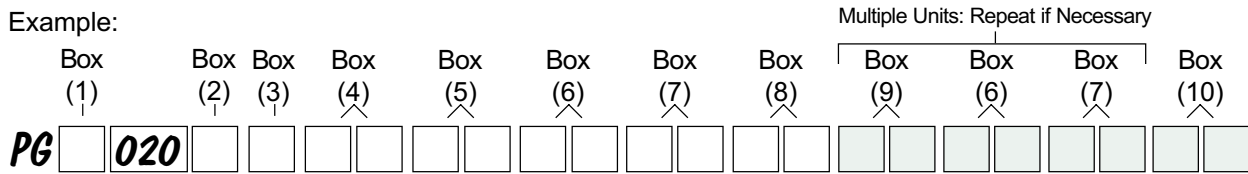
Box 9 Bearing Carrier Codes- Flow Dividers									
ROTATION FLOWPATH CW-Clockwise CCW-Cnt. Clockwise	N.P.T. PORTING PORT SIZE			SPLIT FLG. PORTING PORT SIZE			O.D.T. PORTING PORT SIZE		
	CODE	LEFT	RIGHT	CODE	LEFT	RIGHT	CODE	LEFT	RIGHT
CD SHT RF 20-H9  CCW	XZ	¾	1	RS	¾	1	JK	¾	1
CD SHT RF 20-H10  CW	ZS	1	¾	RZ	1	¾	KX	1	¾
CD SHT RF 20-H11  CCW	SZ	¾	1	ZR	¾	1	XK	¾	1
Bearing Carrier Codes- Motors									
CD SHT RF 20-H16  DBL	B	-	-	B	-	-	B	-	-
CD SHT RF 20-H21  CW	M	1	none	J	1	none	F	1	none
	N	1 ¼	none	-	-	-	G	1 ¼	none
	E	none	none	-	-	-	H	1 ½	none
CD SHT RF 20-H24  CW	BX	none	¾	GR	none	¾	GJ	none	¾
	GX	1	¾	HR	1	¾	HJ	1	¾
	HZ	1 ¼	¾	MT	none	1	MJ	1 ¼	¾
	LZ	1 ¼	1	-	-	-	RJ	1 ½	¾
	KZ	none	1	-	-	-	PK	1 ¼	1
	-	-	-	-	-	-	RK	1 ½	1
-	-	-	-	-	-	BK	none	1	

PGP020™ How to Specify (Box 9) (Continued)
(See below for How to Specify Box 10)

Example:



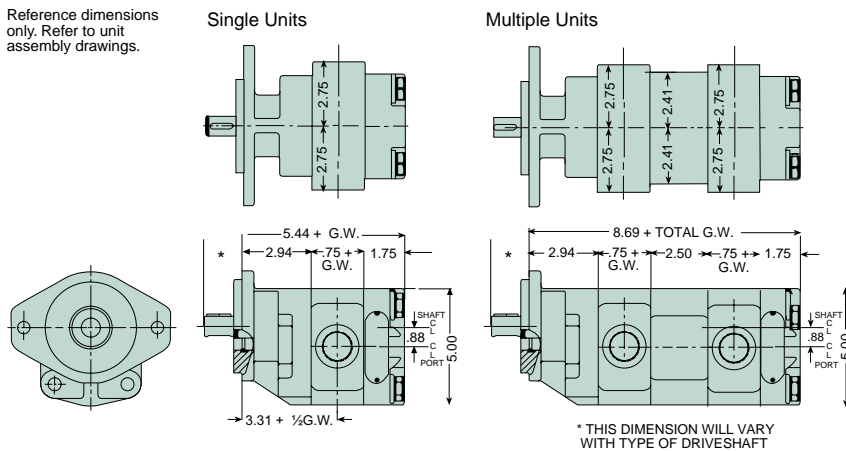
Example:



Box 9 Bearing Carrier Codes- Flow Dividers									
ROTATION FLOWPATH CW-Clockwise CCW-Cnt. Clockwise	N.P.T. PORTING PORT SIZE			SPLIT FLG. PORTING PORT SIZE			O.D.T. PORTING PORT SIZE		
	CODE	LEFT	RIGHT	CODE	LEFT	RIGHT	CODE	LEFT	RIGHT
	CD SHT RF 20-H26 	CV	none	3/4	FD	none	3/4	JH	none
CD SHT RF 20-H28 	GV	1	3/4	GD	1	3/4	PH	1	3/4
	MV	1 1/4	3/4	JG	none	1	RH	1 1/4	3/4
	TK	1 1/4	1	-	-	-	WH	1 1/2	3/4
	NK	none	1	-	-	-	QC	1 1/4	1
	-	-	-	-	-	-	VC	1 1/2	1
CD SHT RF 20-H29 	-	-	-	-	-	-	PC	none	1
	VG	1	3/4	WL	1	3/4	MC	1	3/4
	WG	1	3/4	ZL	1	3/4	SC	1	3/4

Dimensional Data (inches)

Reference dimensions only. Refer to unit assembly drawings.



PGP020™
How to Specify (Box 10)
(See above for example)

Box 10 Connecting Shaft

For connecting tandem units.
-1 Connecting Shaft - Multiple Units
PL=5850

The items described in this document and other documents or descriptions provided by Parker Hannifin Corporation, its subsidiaries and its authorized distributors are hereby offered for sale at prices to be established by Parker Hannifin Corporation, its subsidiaries and its authorized distributors. This offer and its acceptance by any customer ("Buyer") shall be governed by all of the following Terms and Conditions. Buyer's order for any such items, when communicated to Parker Hannifin Corporation, its subsidiary or an authorized distributor ("Seller") verbally or in writing, shall constitute acceptance of this offer.

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2. Payment: Payment shall be made by Buyer net 30 days from the date of delivery of the items purchased hereunder. Amounts not timely paid shall bear interest at the maximum rate permitted by law for each month or portion thereof that the Buyer is late in making payment. Any claims by Buyer for omissions or shortages in a shipment shall be waived unless Seller receives notice thereof within 30 days after Buyer's receipt of the shipment.

3. Delivery: Unless otherwise provided on the face hereof, delivery shall be made F.O.B. Seller's plant. Regardless of the method of delivery, however, risk of loss shall pass to Buyer upon Seller's delivery to a carrier. Any delivery dates shown are approximate only and Seller shall have no liability for any delays in delivery.

4. Warranty: Seller warrants that the items sold hereunder shall be free from defects in material or workmanship for a period of 18 months from date of shipment from Parker Hannifin Corporation. **THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO ITEMS PROVIDED HEREUNDER. SELLER MAKES NO OTHER WARRANTY, GUARANTEE, OR REPRESENTATION OF ANY KIND WHATSOEVER. ALL OTHER WARRANTIES, INCLUDING BUT NOT LIMITED TO, MERCHANTABILITY AND FITNESS FOR PURPOSE, WHETHER EXPRESS, IMPLIED, OR ARISING BY OPERATION OF LAW, TRADE USAGE, OR COURSE OF DEALING ARE HEREBY DISCLAIMED. NOTWITHSTANDING THE FOREGOING, THERE ARE NO WARRANTIES WHATSOEVER ON ITEMS BUILT OR ACQUIRED WHOLLY OR PARTIALLY, TO BUYER'S DESIGNS OR SPECIFICATIONS.**

5. Limitation Of Remedy: SELLER'S LIABILITY ARISING FROM OR IN ANY WAY CONNECTED WITH THE ITEMS SOLD OR THIS CONTRACT SHALL BE LIMITED EXCLUSIVELY TO REPAIR OR REPLACEMENT OF THE ITEMS SOLD OR REFUND OF THE PURCHASE PRICE PAID BY BUYER, AT SELLER'S SOLE OPTION. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL OR SPECIAL DAMAGES OF ANY KIND OR NATURE WHATSOEVER, INCLUDING BUT NOT LIMITED TO LOST PROFITS ARISING FROM OR IN ANY WAY CONNECTED WITH THIS AGREEMENT OR ITEMS SOLD HEREUNDER, WHETHER ALLEGED TO ARISE FROM BREACH OF CONTRACT, EXPRESS OR IMPLIED WARRANTY, OR IN TORT, INCLUDING WITHOUT LIMITATION, NEGLIGENCE, FAILURE TO WARN OR STRICT LIABILITY.

6. Changes, Reschedules and Cancellations: Buyer may request to modify the designs or specifications for the items sold hereunder as well as the quantities and delivery dates thereof, or may request to cancel all or part of this order, however, no such requested modification or cancellation shall become part of the contract between Buyer and Seller unless accepted by Seller in a written amendment to this Agreement. Acceptance of any such requested modification or cancellation shall be at Seller's discretion, and shall be upon such terms and conditions as Seller may require.

7. Special Tooling: A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.

8. Buyer's Property: Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which become Buyer's property, may be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer placing an order for the items which are 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. Taxes: Unless otherwise indicated on the face hereof, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of the items sold hereunder. If any such taxes must be paid by Seller or if Seller is liable for the collection of such tax, the amount thereof shall be in addition to the amounts for the items sold. Buyer agrees to pay all such taxes or to reimburse Seller therefore upon receipt of its invoice. If Buyer claims exemption from any sales, use or other tax imposed by any taxing authority, Buyer shall save Seller harmless from and against any such tax, together with any interest or penalties thereon which may be assessed if the items are held to be taxable.

10. Indemnity For Infringement of Intellectual Property Rights: Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Part 10. Seller will defend and indemnify Buyer against allegations of infringement of U.S. Patents, U.S. Trademarks, copyrights, trade dress and trade secrets (hereinafter 'Intellectual Property Rights'). 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 an allegation that an item sold pursuant to this contract infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If an item sold hereunder is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using said item, replace or modify said item so as to make it noninfringing, or offer to accept return of said item and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to items delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any item sold hereunder. The foregoing provisions of this Part 10 shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights.

If a claim is based on information provided by Buyer or if the design for an item delivered hereunder is specified in whole or in part by Buyer, Buyer shall defend and indemnify Seller for all costs, expenses or judgments resulting from any claim that such item infringes any patent, trademark, copyright, trade dress, trade secret or any similar right.

11. Force Majeure: Seller does not assume the risk of and shall not be liable for delay or failure to perform any of Seller's obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter 'Events of Force Majeure'). Events of Force Majeure shall include without limitation, accidents, acts of God, strikes or labor disputes, acts, laws, rules or regulations of any government or government agency, fires, floods, delays or failures in delivery of carriers or suppliers, shortages of materials and any other cause beyond Seller's control.

12. Entire Agreement/Governing Law: The terms and conditions set forth herein, together with any amendments, modifications and any different terms or conditions expressly accepted by Seller in writing, shall constitute the entire Agreement concerning the items sold, and there are no oral or other representations or agreements which pertain thereto. This Agreement shall be governed in all respects by the law of the State of Ohio. No actions arising out of the sale of the items sold hereunder or this Agreement may be brought by either party more than two (2) years after the cause of action accrues.

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