



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



# PGM 620R Series

Integrated Gear Motor



ENGINEERING YOUR SUCCESS.

## **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
- Truck/Bus
- Material handling
- Forestry
- Agriculture
- Industrial
- Turf care



### **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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**Motor Products**

**PGM620R**

*Purpose built integrated design incorporating fan control and reversing capabilities.*

Parker Hydraulics has supplied gear pumps and motors to worldwide mobile and industrial markets for many years, especially for material handling, turf care, agricultural, and construction equipment applications. Many Parker pumps and motors have been developed and tested for the specific needs of these industries.

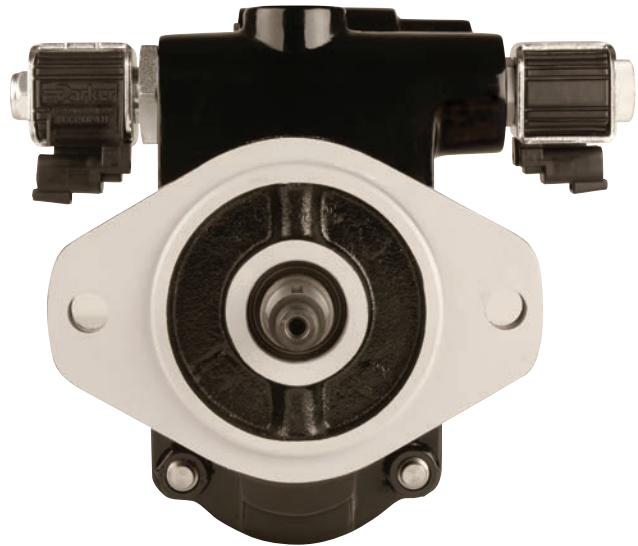
Parker’s defined strategy to provide engineered solutions, coupled with an award-winning flexible manufacturing system has resulted in the availability of a wide range of special options.

PGM620R - Purpose built integrated design incorporating fan control and reversing capabilities.

**Features of PGM620R**

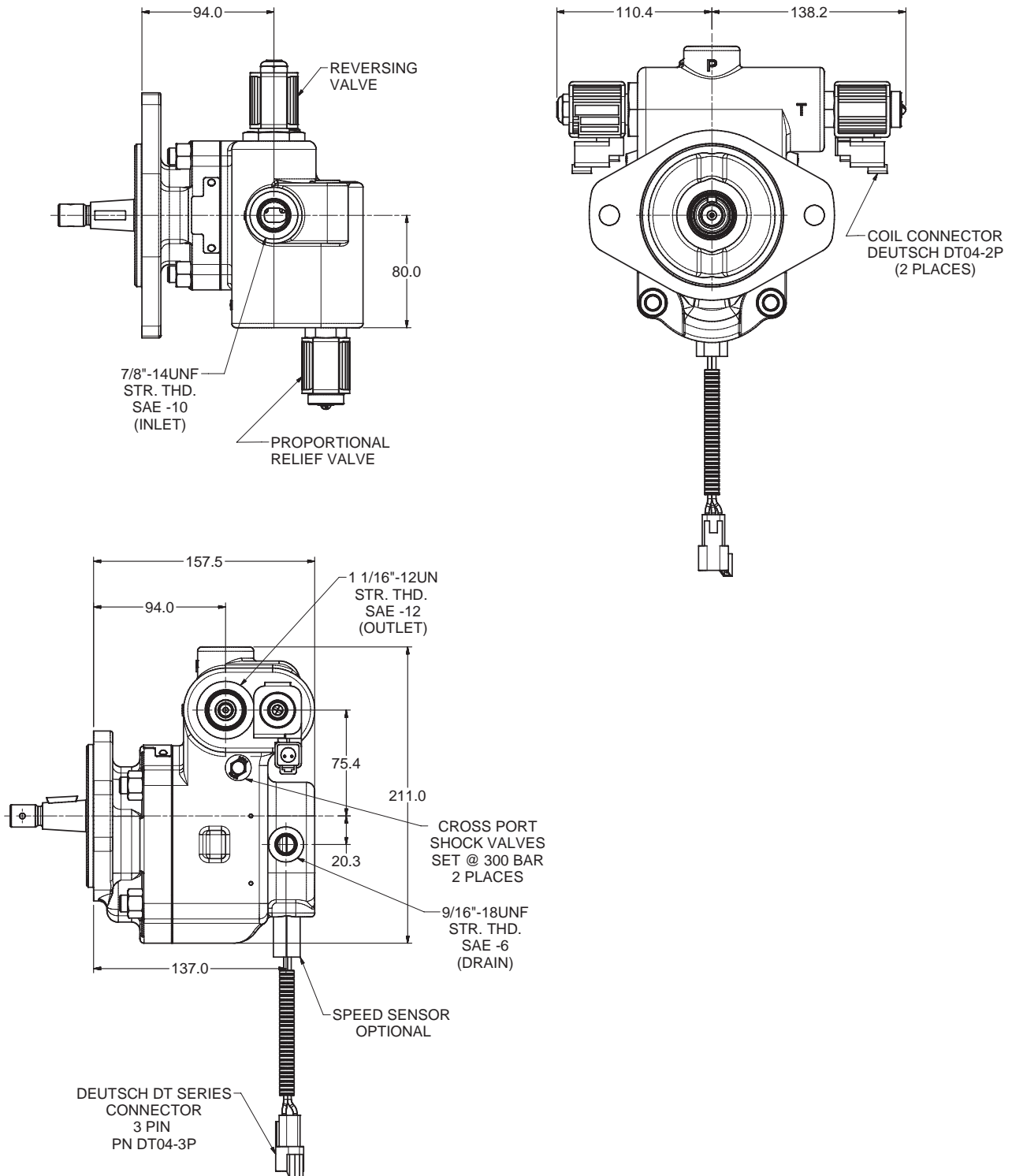
- Interlocking body design
- Cast iron construction for thermal stability
- Continuous pressures to 275 bar
- Compact design
- Speeds rated to 4000 rpm
- Heavy external bearing available for excessive radial and axial loading

**PGM620R**



**Compact Design**

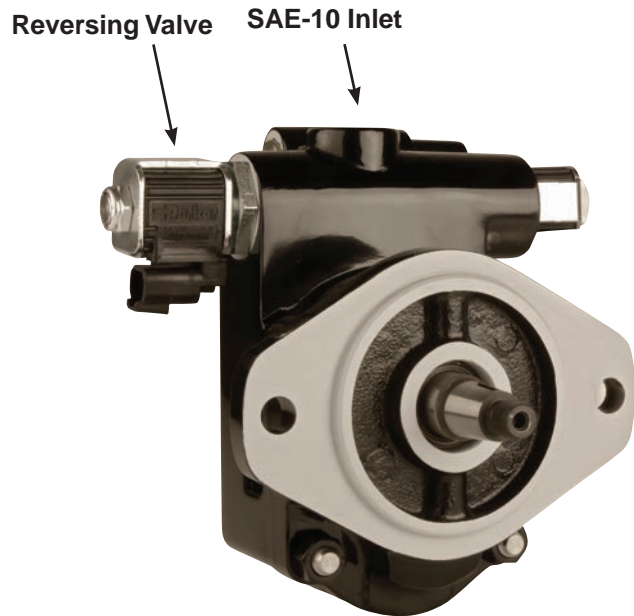
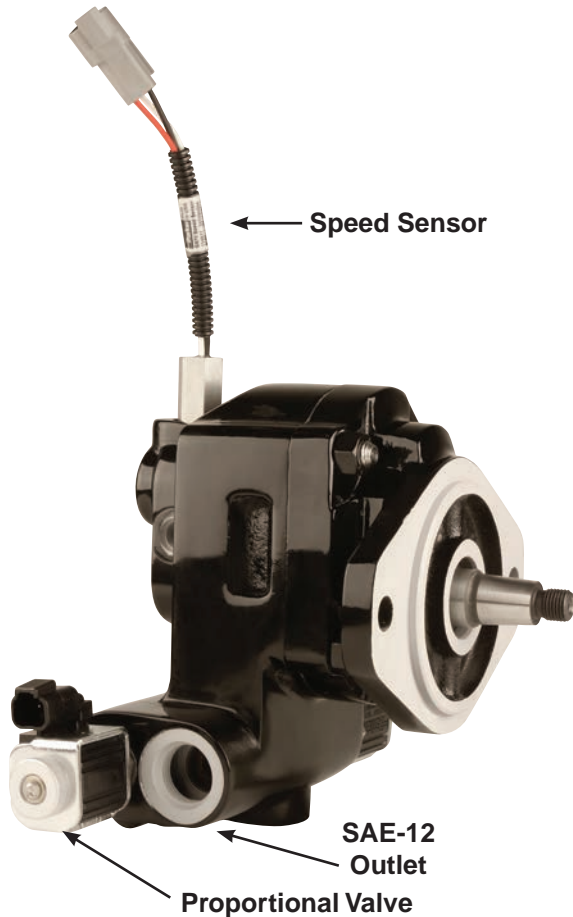
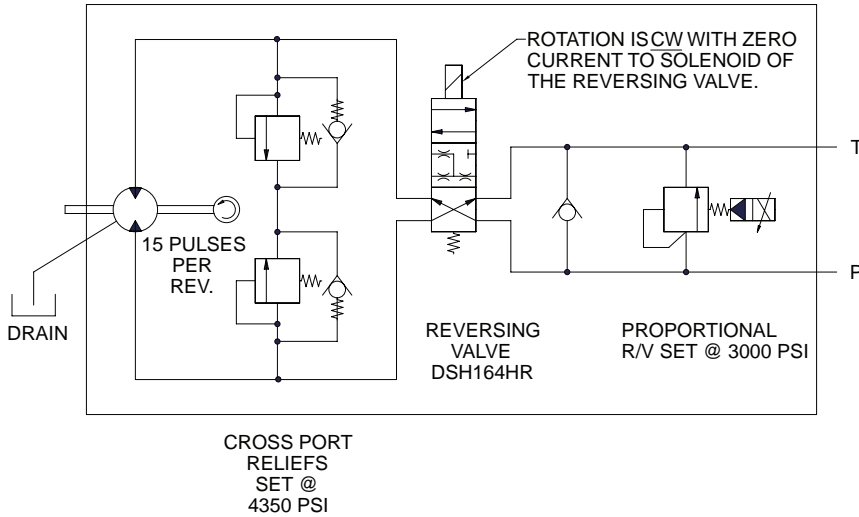
The small envelope size allows the PGM620R to fit into applications where axial space restrictions are critical. All displacements have same physical size.



**Circuit Configurations - Modularity**

The flexible design of the PGM620R allows for any combination of valve options available.

**PGM620R Schematic With All Options Installed**



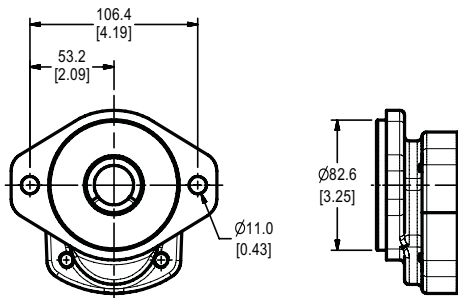
**AVAILABLE DISPLACEMENTS**

Pump Displacement	Code	0190	0230	0260	0290	0330	0370
	cc/rev	19.0	23.0	26.0	29.0	33.0	37.0
	in <sup>3</sup> /rev	1.16	1.40	1.59	1.77	2.01	2.26
Continuous Pressure	bar	275	275	275	275	275	250
	psi	3989	3989	3989	3989	3989	3626
Intermittent Pressure	bar	300	300	300	300	300	275
	psi	4351	4351	4351	4351	4351	3989

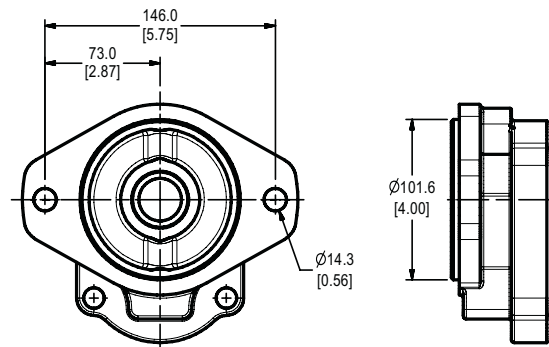
**FLANGE OPTIONS**

Dimensions are shown as  $\frac{\text{mm}}{[\text{in}]}$

**Code H2**  
 S.A.E. "A" 2-BOLT

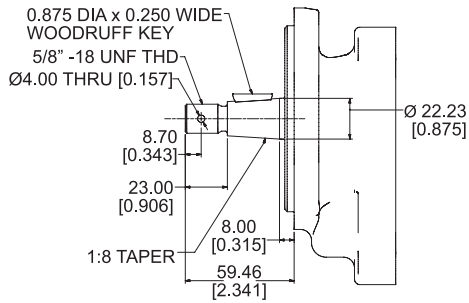


**Code H3**  
 S.A.E. „B“ 2-BOLT

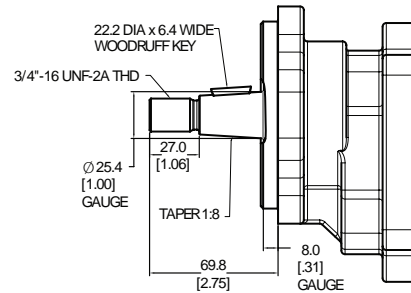


Dimensions are shown as  $\frac{\text{mm}}{\text{[in]}}$

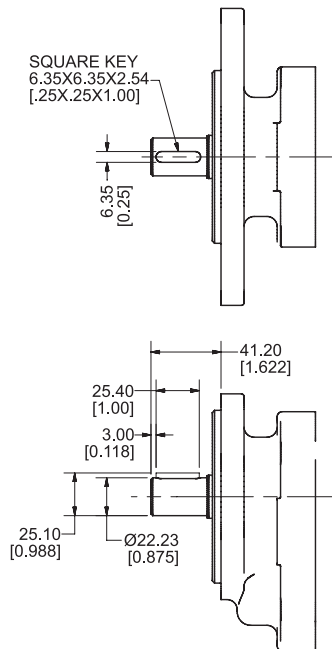
**Code R3**  
 SAE "B" TAPER w/Key



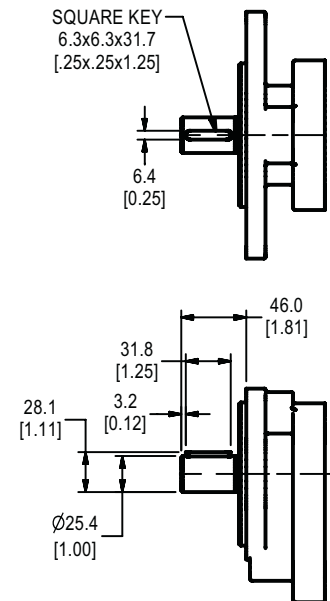
**Code R2**  
 SAE "B-B" TAPER w/Key



**Code M1**  
 Ø22.22, 6.3 KEY,  
 NO THREAD, 41.2L  
 S.A.E. "B" PARALLEL

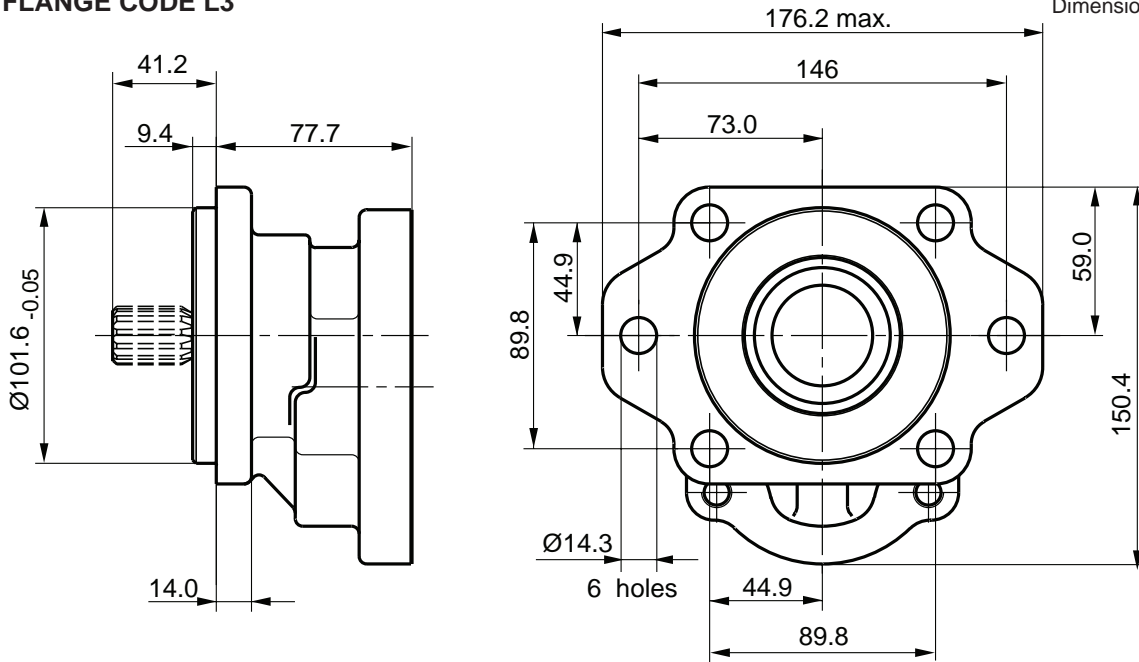


**Code M2**  
 Ø25.4, 6.3 KEY,  
 NO THREAD, 46L  
 S.A.E. "B-B" PARALLEL



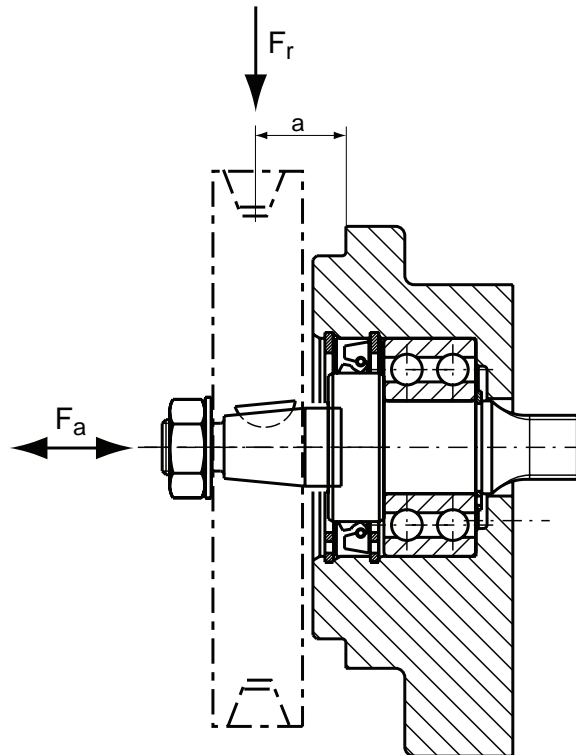
**FLANGE CODE L3**

Dimensions are shown as  $\frac{\text{mm}}{[\text{in}]}$



**Note: 22.2mm added to shaft end length and 0.7 Kg (1.5 lb) to total weight**

Consult factory for load capacity ratings



**PGM620R - FUNCTIONALITY**

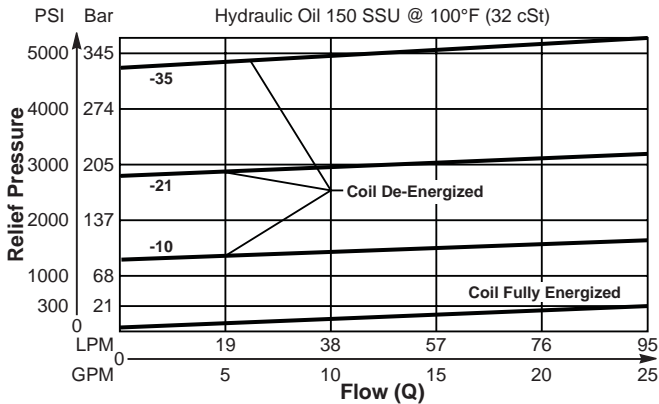
Parker is a recognized leader in integrated circuit design. The flexibility of cartridge valve systems and solutions allows the end user options to customize their fan systems for the highest performance possible.

**Performance Curves**

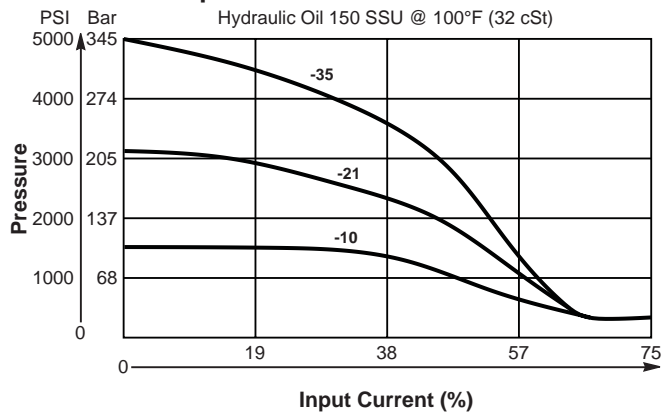
**Proportional Relief Valve AP04G2YR**

- Pilot operated spool design
- Weather resistant coil
- Factory preset
- PWM current regulator recommended
- One piece cartridge

**Relief Performance**



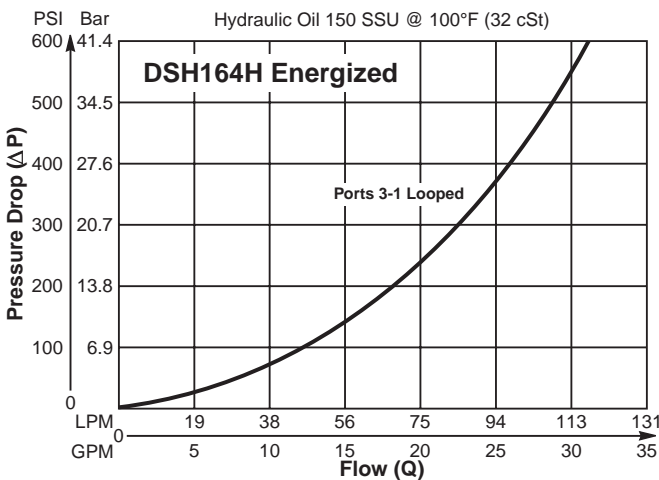
**Pressure vs. Input Current**



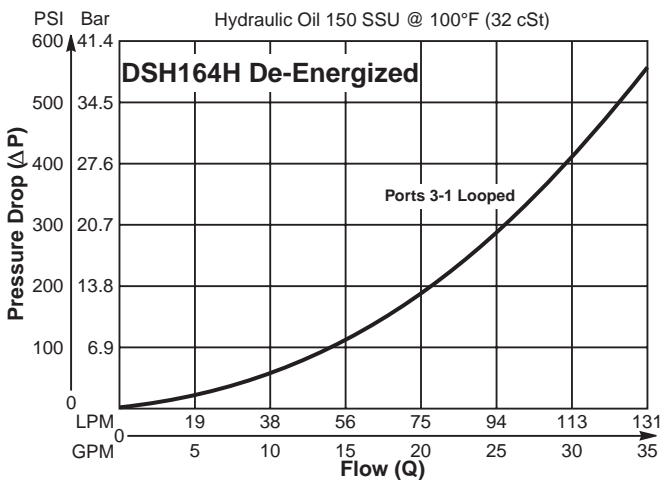
**PGM620R Valve Performance Data - Reversing Valve DSH164**

- High flow capacity
- Pilot operated spool valve
- 4-way, 3 position, closed center
- Weather resistant coil

**Pressure Drop vs. Flow (Through cartridge only)**



**Pressure Drop vs. Flow (Through cartridge only)**

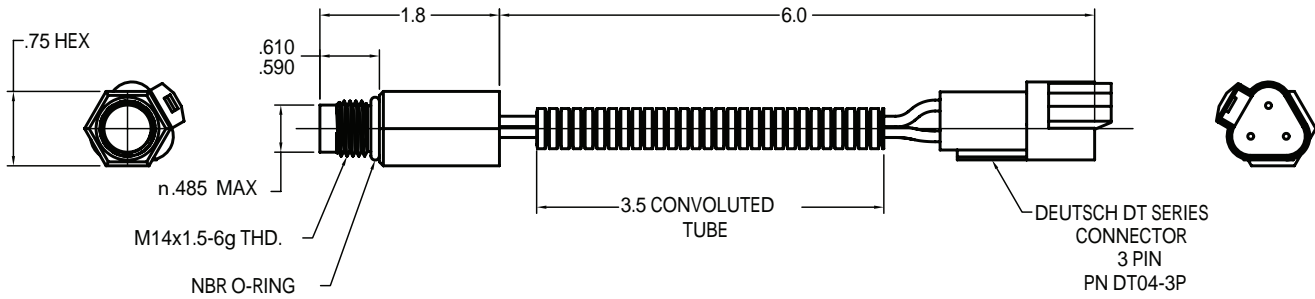


**PGM620R Reversing Options**

**SPEED SENSOR**

This rugged, weather resistant sensor uses proven reliable technology and was developed to meet the demanding needs of mobile applications.

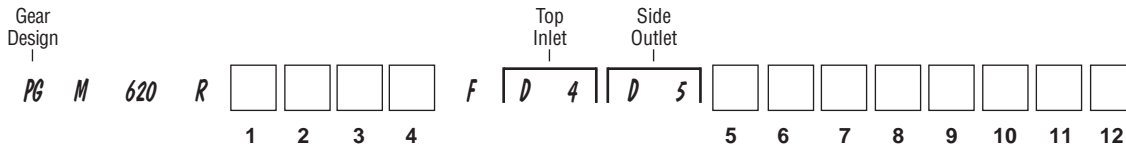
- Tough stainless steel housing
- Sealed electrical connectors
- Easy installation
- Protected against shock, vibration and electromagnetic interference
- Excellent stability
- Wide range of operating conditions (IP67)



SENSOR DATA	
SUPPLY VOLTAGE:	5-30 VDC
OPERATIONAL VOLTAGE:	5-27 VDC
SUPPLY CURRENT:	13.5 mA MAX
REVERSE POLARITY PROJECTION SWITCHING FREQUENCY:	0 TO 15 KHZ
OUTPUT:	OPEN COLLECTOR NO INTERNAL PULL-UP RESISTOR 470 OHM SERIES OUTPUT RESISTOR
SENSOR OUTPUT:	15 PULSES/REV

PIN CONNECTIONS		
A	RED	SUPPLY
B	BLACK	GROUND
C	WHITE	SIGNAL

## PGM620R How to Specify



1 Displacement	
0190	19 cc/rev (1.16 in <sup>3</sup> /rev)
0230	23 cc/rev (1.40 in <sup>3</sup> /rev)
0260	26 cc/rev (1.59 in <sup>3</sup> /rev)
0290	29 cc/rev (1.77 in <sup>3</sup> /rev)
0330	33 cc/rev (2.01 in <sup>3</sup> /rev)
0370	37 cc/rev (2.26 in <sup>3</sup> /rev)

2 Rotation	
C	Clockwise
A	Counter Clockwise

\*Note: Primary direction

3 Shaft	
M1	SAE "B" parallel key
M2	SAE "B-B", parallel key
R2	SAE "BB" taper 8:1
R3	SAE "B" taper 8:1

4 Flange	
H2	SAE "A" 2-bolt
H3	SAE "B" 2-bolt
L3	SAE "B" 2/4-bolt

\*Note: L3 flange must use V shaft seal code

Shaft Seal	
F	Viton with dirt excluder

Fixed Ports (Inlet/Outlet)	
D4	SAE-10 straight thread o-ring
D5	SAE-12 straight thread o-ring

5 Speed Sensor	
A	Yes
B	No

6 Cross Port Shock Relief Valve	
A	Yes
B	No

\*Note: Pre-set 300 BAR

7 Anti-Cavitation Check Valve	
A	Yes
B	No

8 Reversing Valve Coil	
A	24VDC with Integral 2 Pin Deutsch DT04-2P
B	12VDC with Integral 2 Pin Deutsch DT04-2P
C	24VDC with Dual Lead Wire 18AWG
D	12VDC with Dual Lead Wire 18AWG

\*Note: All Coils 19W

9 Relief Valve*	
A	Mechanical R/V with Adjustable Lock Nut
B	103 BAR Proportional R/V, 24VDC with Integral 2 Pin Deutsch DT04-2P
C	207 BAR Proportional R/V, 24VDC with Integral 2 Pin Deutsch DT04-2P
D	103 BAR PSI Proportional R/V, 12VDC with Integral 2 Pin Deutsch DT04-2P
E	207 BAR Proportional R/V, 12VDC with Integral 2 Pin Deutsch DT04-2P
F	103 BAR Proportional R/V, 24VDC with Dual Lead Wire, 18AWG
G	207 BAR Proportional R/V, 24VDC with Dual Lead Wire, 18AWG
H	103 BAR Proportional R/V, 12VDC with Dual Lead Wire, 18AWG
I	207 BAR Proportional R/V, 12VDC with Dual Lead Wire, 18AWG

\*Note: All Coils 19W

10 Mechanical R/V Pressure Setting	
XXX	3 Digit Setting in Bar (ex. 300 x 10 - 3000 PSI)
000	Proportional Valve Selected

11 Motor Drain Option	
C	SAE-6, Straight Thread O-Ring

12 Motor Drain Position	
5	Drain Right From View On Drive Shaft
6	Drain Left From View On Drive Shaft

## **PFDC Series** **Hydraulic Fan Drive Controllers**

### **Our Most Powerful Controller Yet**

The rugged enclosure houses a state-of-the-art microprocessor with SAE J1939 CAN networking. Superior control is the result of a setup package utilizing an easily understood software interface featuring real time data logging and diagnostic capability.

The controller is versatile. Cooling requirements can be derived from the J1939 CAN data and/or combination of thermistors and pressure transducers. The self-diagnostics protects the controller in the event of overheating.



### **Product Features**

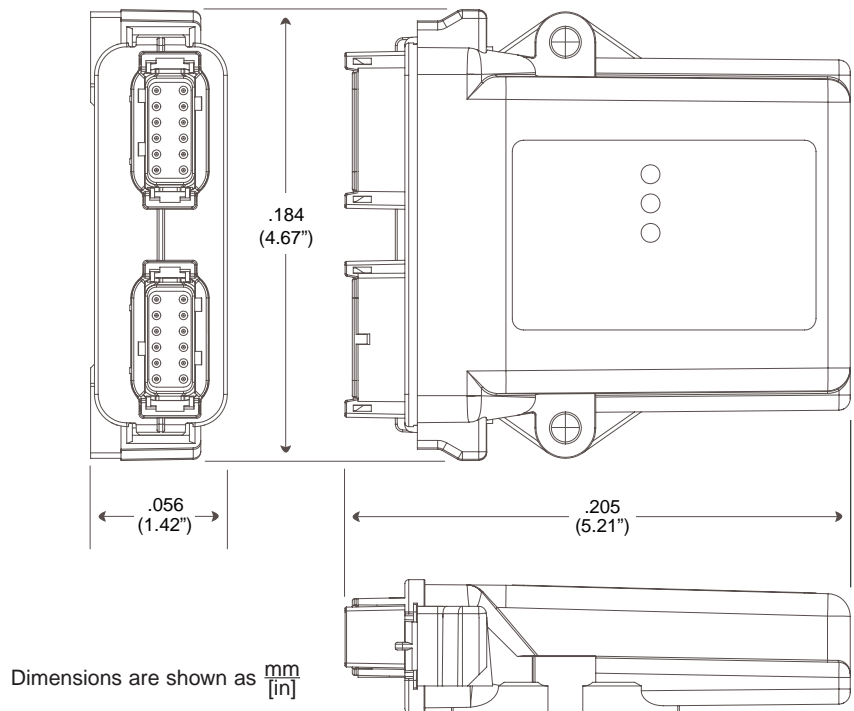
- 3 Thermistor Inputs
- Coil Current Feedback
- Manual/Automatic Reversing
- Air Conditioning Support
- Boost Solenoid Support
- Diagnostics
- Fault Logging
- Data Logging
- Adjustable PWM Driver for Proportional Valve
- Torque Limiting

## Specifications

POWER			
<b>Nominal:</b>	12/24VDC		<b>Range:</b> 9-32VDC
<b>Protection for:</b>	reverse polarity, transient immunity, and "load dump"		
INPUTS			
<b>PFDC-All:</b>	Digital	Four (4) sourced	9-32VDC (7mA @ 32VDC)
<b>PFDC-1:</b>	Thermistor	Three (3)	-40 to 150C (100K-50 Ohm, NTC)
<b>PFDC-2:</b>	Thermistor	One (1)	3V Internal Bias
<b>PFDC-2:</b>	Transducer	Two (2)	0.5 to 4.5 VDC (Pressure Transducer)
OUTPUTS			
<b>Digital:</b>	9-32VDC 3A Max	Four (4)	Sourcing/High Side Switch
<b>PWM:</b>	3 Amp max	Frequency adjustable from 10 Hz to 1000 Hz	
<b>NOTE:</b>	Output Voltage is approximately equal to Power Input Voltage		
INDICATOR LEDs			
<b>Power:</b>	Green	Indicates system power	
<b>J1939:</b>	Green	Indicates J1939 communications connect	
<b>Error:</b>	Red	Flashes on error	
COMMUNICATION PORTS			
<b>Network:</b>	J1939 CAN		
<b>Configuration:</b>	RS232	<b>NOTE:</b> Used for configuration only	
ENVIRONMENTAL			
<b>Temperature:</b>	Operating:	-40C - +85C	Storage: -40C - 85C

## Dimensions

Enclosure rated IP-67  
 Deutsch DTM Series  
 Connectors



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**1. Terms and Conditions of Sale:** All descriptions, quotations, proposals, offers, acknowledgments, acceptances and sales of Seller's products are subject to and shall be governed exclusively by the terms and conditions stated herein. Buyer's acceptance of any offer to sell is limited to these terms and conditions. Any terms or conditions in addition to, or inconsistent with those stated herein, proposed by Buyer in any acceptance of an offer by Seller, are hereby objected to. No such additional, different or inconsistent terms and conditions shall become part of the contract between Buyer and Seller unless expressly accepted in writing by Seller. Seller's acceptance of any offer to purchase by Buyer is expressly conditional upon Buyer's assent to all the terms and conditions stated herein, including any terms in addition to, or inconsistent with those contained in Buyer's offer. Acceptance of Seller's products shall in all events constitute such assent.

**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.

9/91P



**Parker Hannifin Corporation**  
 6035 Parkland Blvd.  
 Cleveland, Ohio 44124-4141  
 Telephone: (216) 896-3000  
 Fax: (216) 896-4000  
 Web site: www.parker.com

## **Parker Hannifin Corporation**

### **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 1,400 product lines that control motion in some 1,000 industrial and aerospace markets. Parker is the only manufacturer to offer its customers a choice of hydraulic, pneumatic, and electro-mechanical motion-control solutions. Our Company has the largest distribution network in its field, with over 7,500 distributors serving more than 350,000 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**

North American customers seeking product information, the location of a nearby distributor, or repair services will receive prompt attention by calling the Parker Product Information Center at our toll-free number: 1-800-C-PARKER (1-800-272-7537). In the UK, a similar service is available by calling 0500-103-203.

#### **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.



# Sales Offices Worldwide

## North America

### **Gear Pump Division Headquarters**

**101 Canterbury Road**

**Kings Mountain, NC 28086**

phone 704 730 2000

fax 704 730 5832

toll free 888 700 7411

### **Gear Pump Division Facility**

**2701 Intertech Drive**

**Youngstown, OH 44509**

phone 330 270 6000

fax 330 270 6185

toll free 888 700 7511

Parker Hannifin Corporation

**Gear Pump Division**

101 Canterbury Road

Kings Mountain, NC USA

[www.parker.com](http://www.parker.com)

