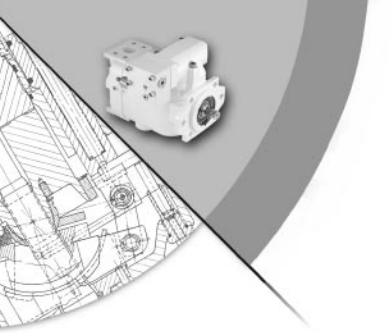
Oilgear

PVG Open Loop Pumps

Bulletin 47019-H



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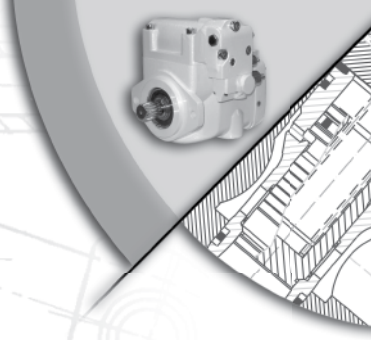


PERFORMANCE ASSURANCE –
STANDARD WITH EVERY OILGEAR COMPONENT

Every Oilgear product is shipped to you with our Performance Assurance — a corporate commitment to stay with your installation until our equipment performs as specified.

Hydraulic equipment and systems have been Oilgear's primary business since 1921. For decades, we have developed hydraulic techniques to meet the unique needs and unusual fluid power problems of machinery builders and users worldwide, matching fluid power systems to a tremendous range of applications and industries. Our exclusive Performance Assurance program is built upon that strong foundation.

As a customer, you also benefit from access to Oilgear's impressive technical support network. You'll find factory trained and field-experienced application engineers on staff at every Oilgear facility. They are backed by headquarters staff who can access the records and knowledge learned from decades of solving the most difficult hydraulic challenges.

When your design or purchase is complete, our service is just beginning. If you ever need us, our Oilgear engineers will be there, ready to help you with the education, field service, parts and repairs to assure that your installation runs smoothly— and keeps right on running.

PVG Open Loop Pumps

Computer optimized, high pressure high volume pump, with Oilgear's time proven rotating group.

- Provides double the horsepower in the same package.
- Provides reduced shifting time for high response systems.

Four-way pilot operated control.

- Provides fast on and off stroke time.
- Maintains constant pressure over full volume range.
- Delivers high performance in a compact package.

SAE Heavy duty shaft.

- Allows high thru torque capability.
- Dual units can handle full pressure and volume.

Sealed front shaft bearings.

- Enables operation with low viscosity or other special fluids.

SAE keyed or SAE splined shaft.

Swashblock with polymerous bearings.

- Allows running on low viscosity or other special fluids.
- Permits constant control reaction with low hysteresis.
- Eliminates troublesome yoke bearings
- Provides long life.

Hardened steel shoes with specially designed face for increased fluid retention, running on hardened swashblock surface.

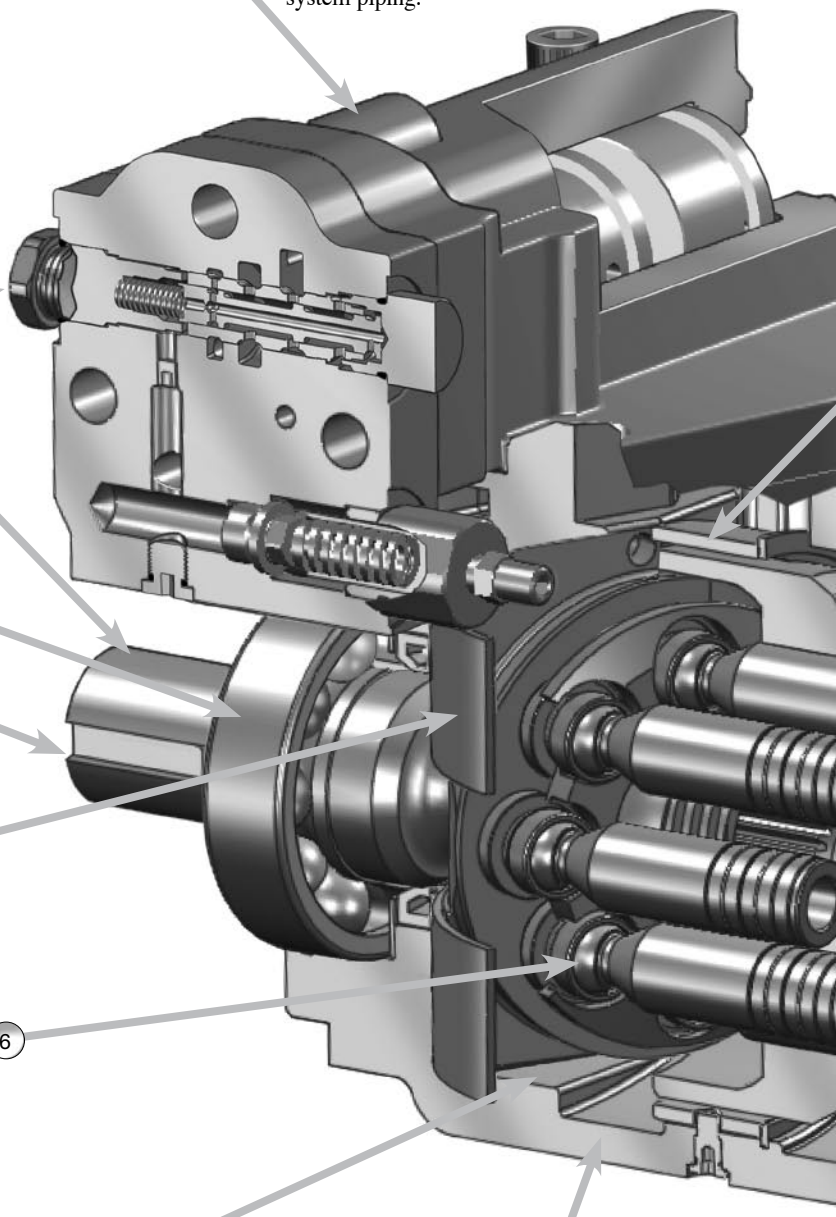
- Provides a higher degree of contaminate resistance.
- Allows higher pressure operation.
- Enables operation with low viscosity or other special fluids.
- Provides long life.

Patented pressure lubricated swashblock.

- Delivers high performance for high pressure high cycle operation.
- Pressure lubricated upper and lower saddle bearings provide for long life.

Large control selection.

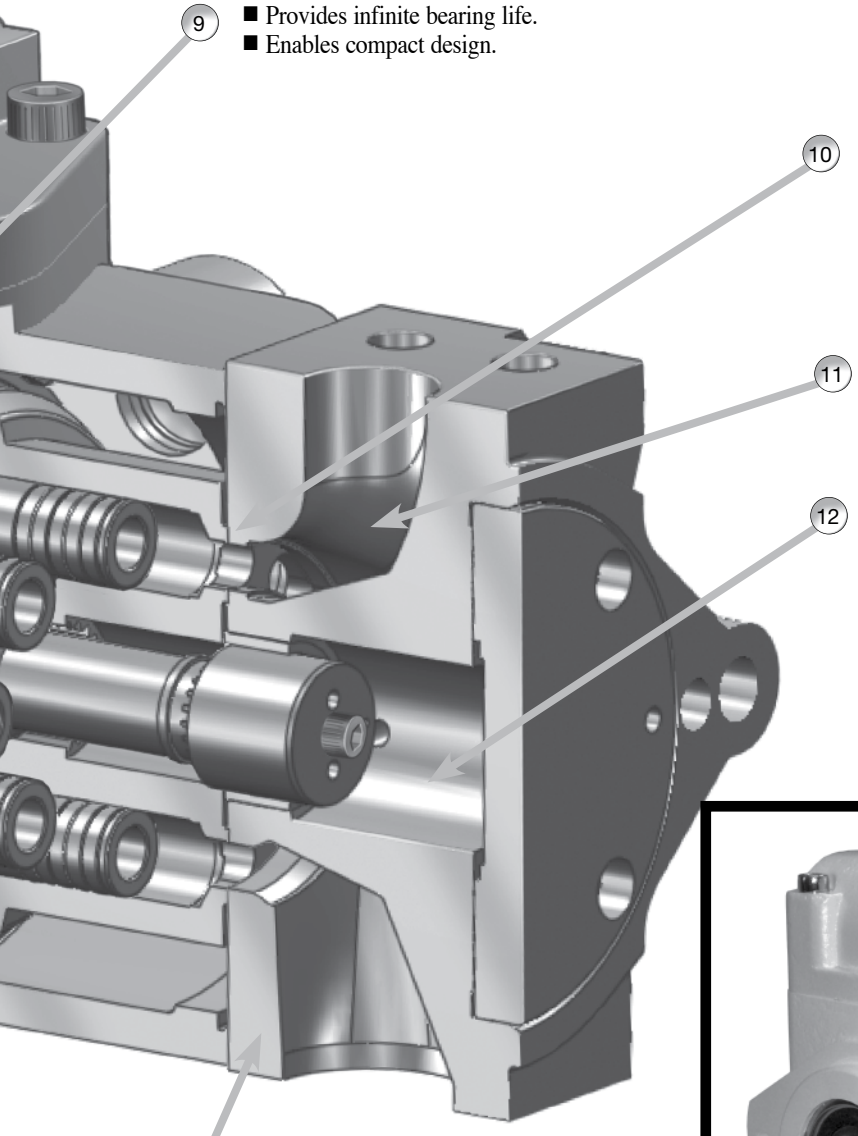
- Pressure and volume controls are available with a large variety of options.
- Field interchangeability without disconnecting from drive or system piping.



Rugged cylinder design.

- Hardened nodular iron construction for improved performance and contamination resistance.

Cylinder mounted polymerous journal bearings.
- Allows operaton with low viscosity or other special fluids.
- Provides infinite bearing life.
- Enables compact design.

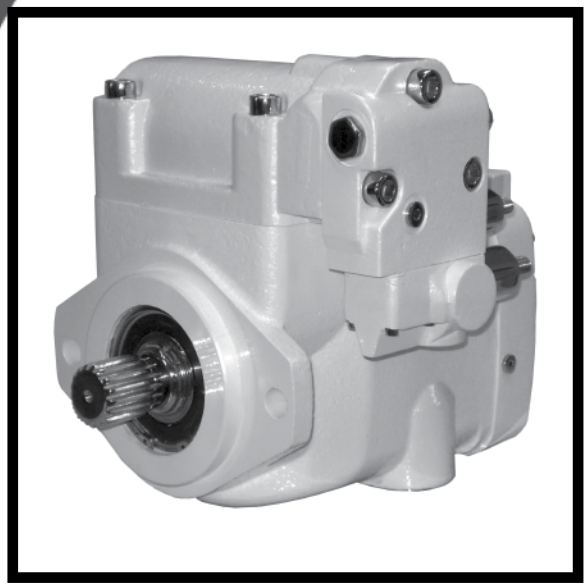


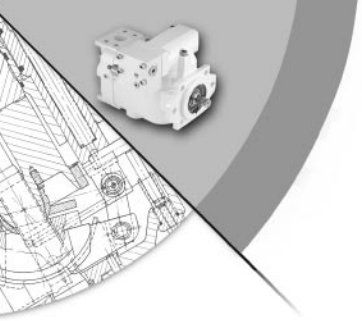
Hardened cylinder surface running on hardened valve plate “hard-on-hard”.
- Provides greater resistance to contamination.
- Provides long life.
- Allows operation with low viscosity or other special fluids.

Valve plate selection.
- Rear or top and bottom port connections available.

Thru-shaft availability.
- Allows for multiple pump installation from a single drive shaft.
- Dual configuration with capability of full load on both pumps.
- Has provisions for mounting “AA” thru “C” sizes for rear pumps.

Quiet valve plate design.
- Minimizes noise at typical electric motor speeds.
- Nodular iron construction for long life.





Nominal Performance Specifications

UNIT SIZE	THEORETICAL MAXIMUM DISPLACEMENT		RATED CONTINUOUS PRESSURE		PEAK PRESSURE		FLOW RATE at 1800 rpm, rated cont. pressure & 14.7 psia (bar abs) inlet conditions		MAXIMUM SPEED	POWER INLET at rated cont. pressure & 1800 rpm	
	in^3/rev.	ml/rev.	psi	bar	psi	bar	gpm	l/min	rpm	hp	kw
048	2.93	48,0	5000	344,8	5800	400,0	21.1	79,9	2700	73	54,5
065	3.98	65,0	5000	344,8	5800	400,0	28.8	108,9	2700	100	74,6
075	4.60	75,4	3750	258,6	4250	293,1	33.3	126,0	2700	89	66,4
100	6.00	98,3	5000	344,8	5800	400,0	42.4	160,5	2400	150	111,9
130	7.94	130,2	3750	258,6	4250	293,1	57.6	218,0	2400	150	111,9

Case pressure should be less than 25 psi (1,7 bar).
For higher pressure, consult factory.
Higher speeds available – consult factory.

Nominal Dimensions

	LENGTH		WIDTH		HEIGHT		WEIGHT*		
UNIT SIZE	in.	mm.	in.	mm.	in.	mm.	lbs.	kg.	FACE MOUNTING
048, 065 & 075	12.0	303,9	6.9	174,5	6.3	160,4	68	31	SAE “B” 2 & 4 Bolt
100 & 130	13.0	330,5	8.4	212,9	7.3	185,7	115	52	SAE “C” 2 Bolt

All dimensions (without controls) are approximate. For detailed dimensions, contact your Oilgear Representative.
*P-1 control and rear ported valve plate.

SHAFT TORQUE RATINGS

PVG 100/130

5250 IN-LB = MAXIMUM ALLOWABLE TORQUE APPLIED TO REAR OUTPUT

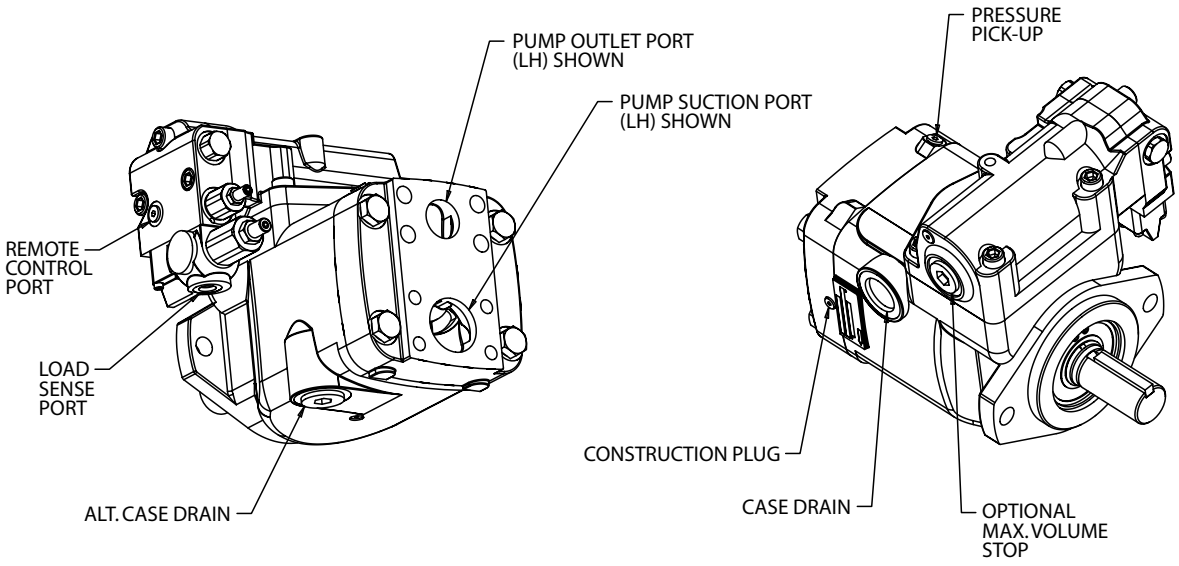
MODEL CODE DESIGNATOR	SHAFT SIZE	ALLOWABLE INPUT TORQUE IN-LB
"Y"	1.50" KEY LONG	10,500
"Z"	1.50" KEY SHORT	6,000
"S"	SPLINE 17 TOOTH 12/24 DP	10,500
"K"	SPLINE 14 TOOTH 12/24 DP	7,000
"R"	SPLINE 13 TOOTH 8/16 DP	10,500

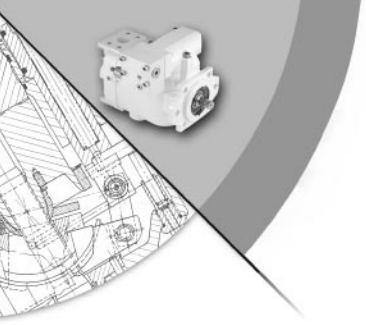
PVG 048/065/075

3500 IN-LB = MAXIMUM ALLOWABLE TORQUE APPLIED TO REAR OUTPUT

MODEL CODE DESIGNATOR	SHAFT SIZE	ALLOWABLE INPUT TORQUE IN-LB
"Y"	1.00" KEY LONG	3,500
"S"	SPLINE 15 TOOTH 16/32 DP	7,000
"K"	SPLINE 13 TOOTH 16/32 DP	3,500
"R"	SPLINE 14 TOOTH 12/24 DP	7,000
"B"	1.25" KEY	6,400

PRESSURE PICK-UP POINTS FOR INSTRUMENTATION





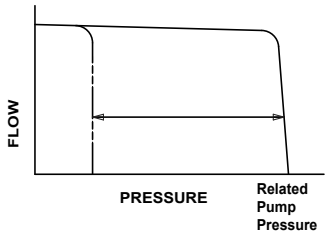
Pump Controls**

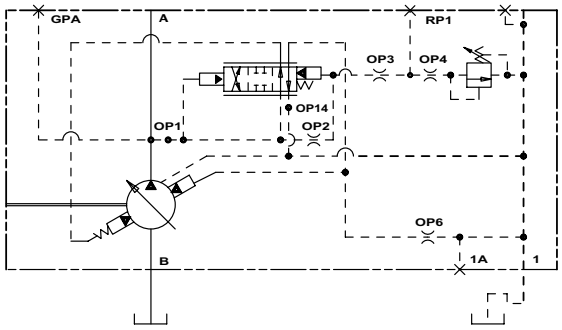
PRESSURE*

Pressure Compensator **"P-1"**

Ensures maximum pump flow until unit reaches preset control pressure setting then regulates output flow to match the requirements of the system while maintaining preset output pressure.

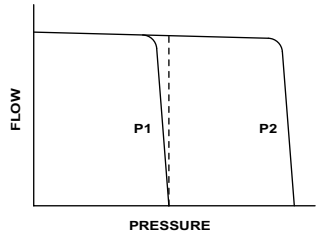
Can be adjusted from 200 psi working pressure up to the maximum pressure rating of pump.

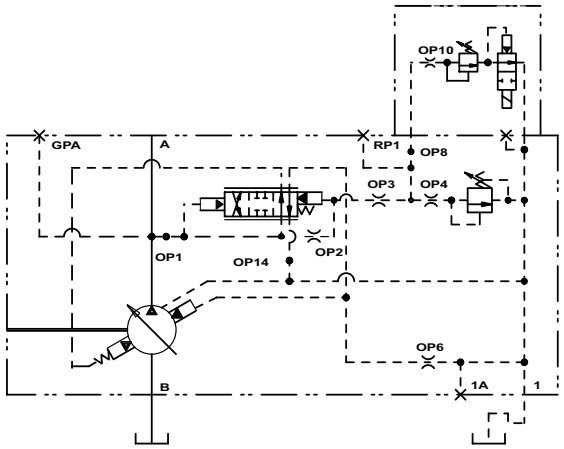




Dual Pressure Compensator **"P-2"**

Provides two independently adjustable pressure compensated settings as selected by an integral solenoid.

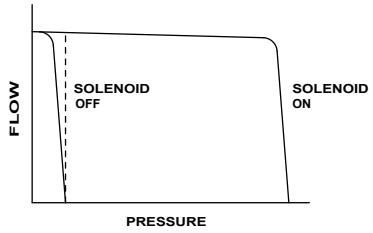


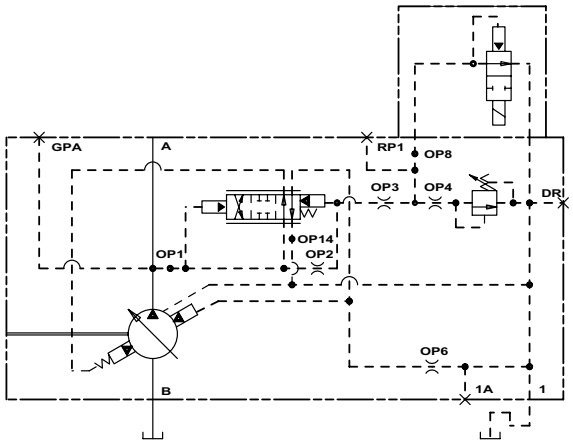


PRESSURE*

Soft Start Pressure Compensator **"P-C"**

Pump starts "softly" by going quickly at low pressure to a reduced flow setting, thereby reducing start up torque requirements.

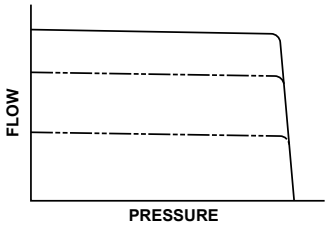


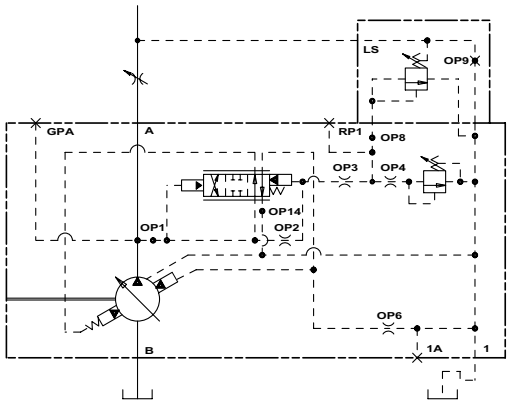


VOLUME/PRESSURE SENSING*

Load Sensing **"P-F"**

A constant flow output is maintained for a given flow control valve setting regardless of changes in drive speed and/or working pressure.





* Be sure system and pumps are protected with a high pressure relief valve against overloads.

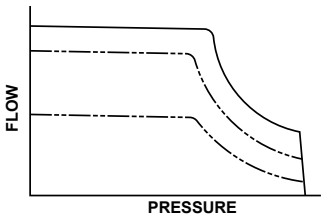
** For detailed circuits of a particular size pump and control combination, contact your Oilgear Representative.

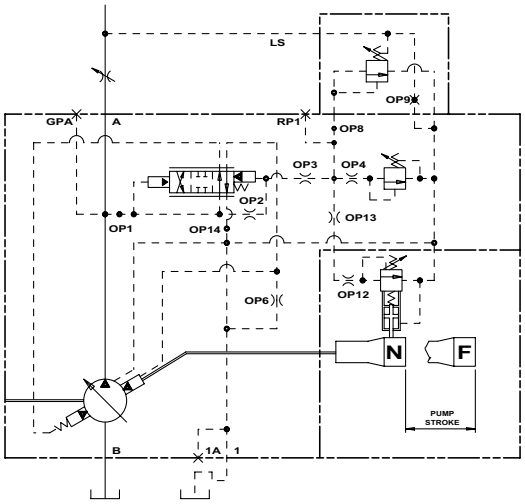
Pump Controls**

VOLUME/PRESSURE SENSING/HORSEPOWER*

Horsepower Limiter with Load Sensing **"P/G"**

Load sensing control matches flow and pressure to load demand until (limited) horsepower setting is reached. Control then automatically reduces delivery as system pressure rises.

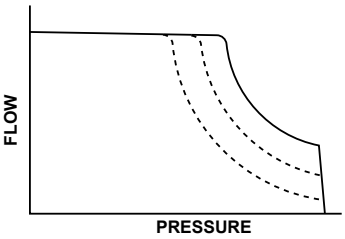


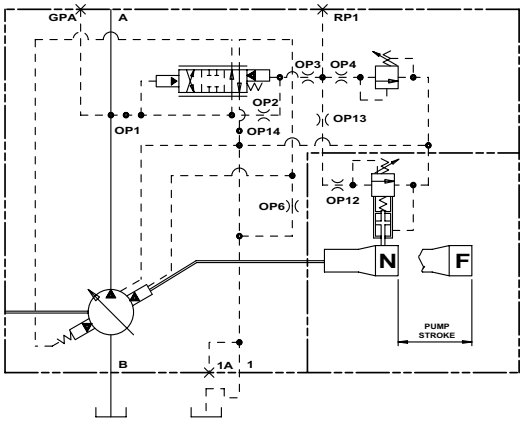


HORSEPOWER/PRESSURE SENSING*

Horsepower Limiter **"P/H"**

Automatically reduces delivery, as unit pressure rises, to limit horsepower consumption.

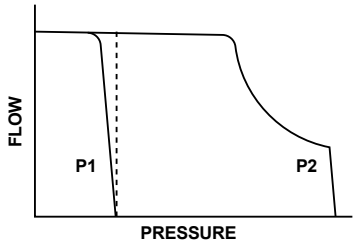


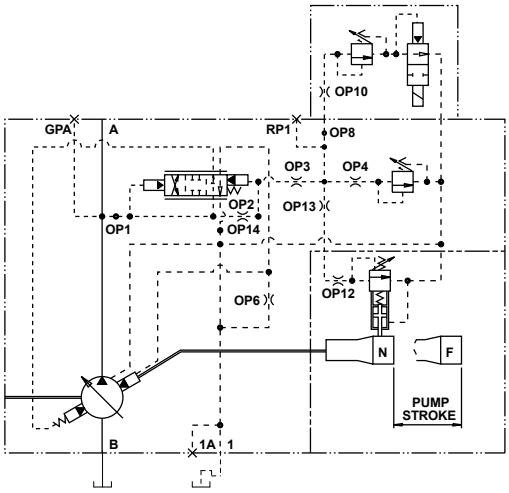


HORSEPOWER/PRESSURE SENSING*

Dual Pressure Compensator w/Horsepower **"P-2/H"**

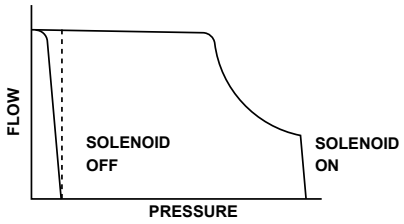
Provides two independently adjustable pressure compensated settings as selected by an integral solenoid. Automatically reduces delivery, as unit pressure rises, to limit horsepower consumption.

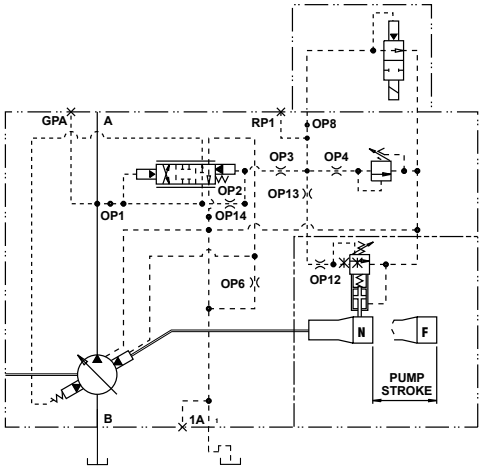




Soft Start Pressure Compensator w/Horsepower **"P-C/H"**

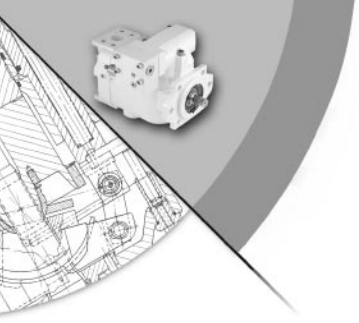
Pump starts "softly" by going quickly at low pressure to a reduced flow setting, thereby reducing start up torque requirements. Automatically reduces delivery, as unit pressure rises, to limit horsepower consumption.





* Be sure system and pumps are protected with a high pressure relief valve against overloads.

** For detailed circuits of a particular size pump and control combination, contact your Oilgear Representative.

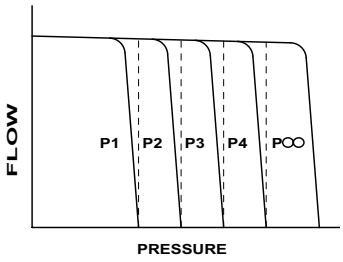


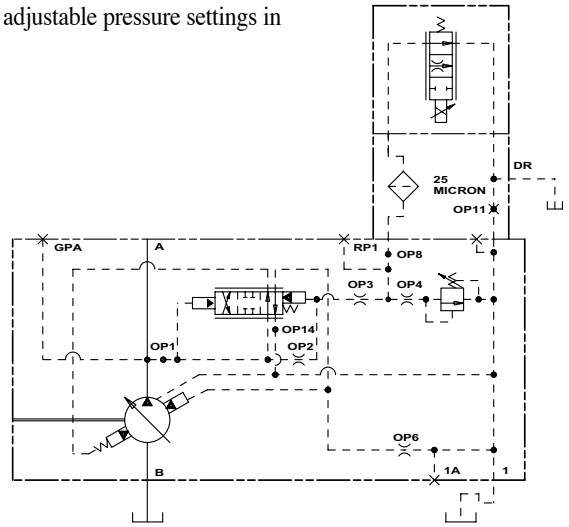
Pump Controls**

ELECTRONIC*

Electronic Proportional Pressure Compensator **"P/A" "P/B"**

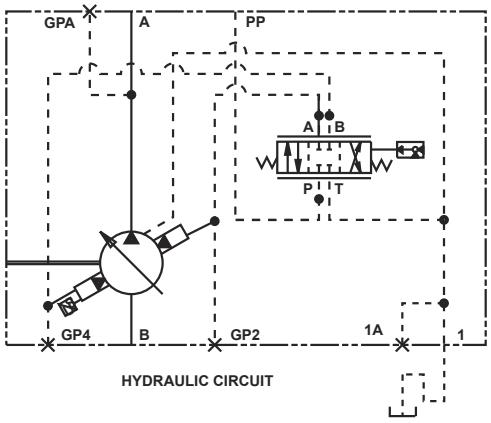
Provides an infinite number of independent remotely adjustable pressure settings in response to an electrical command.





Electronic Servo Valve **"V-M" "V-S"**

An electrohydraulic servo valve positions the swashplate mechanism with a closed-loop position control (with LVDT feedback) providing a highly accurate remote variable delivery control.

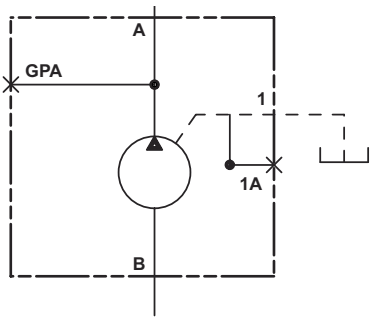


HYDRAULIC CIRCUIT

VOLUME*

Fixed Volume **"F"**

Fixed displacement units available with stroke setting of three quarters and full volume.



* Be sure system and pumps are protected with a high pressure relief valve against overloads.

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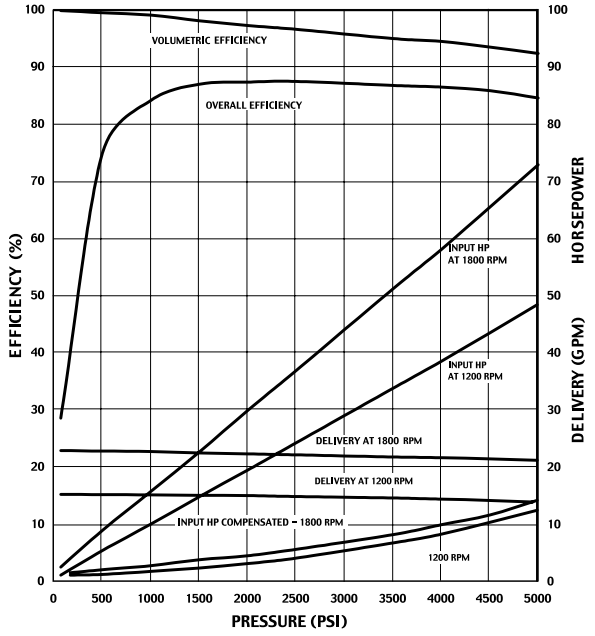
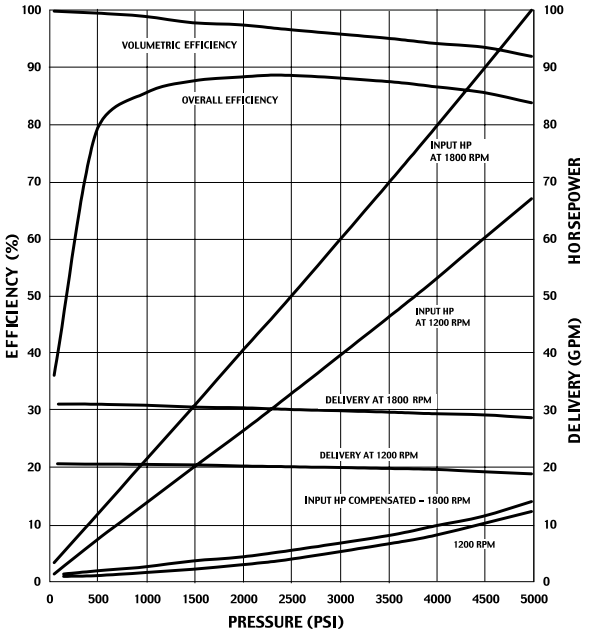
PERFORMANCE

Performance curves are based on a viscosity of 160 SSU.

PVG-048



PVG-065



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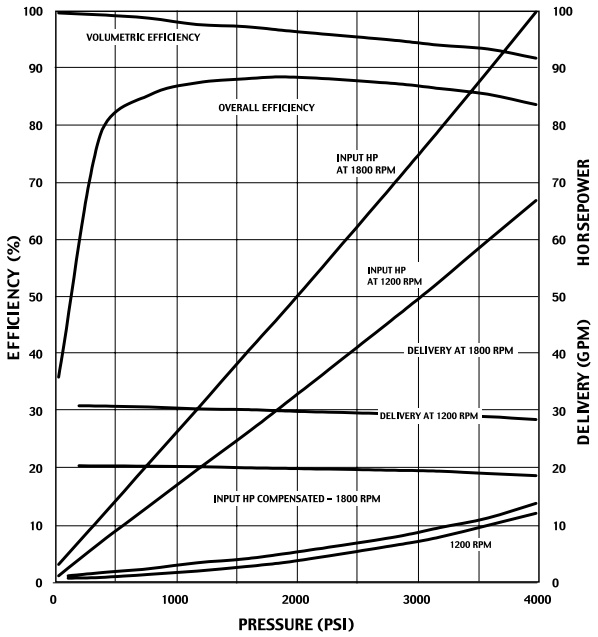

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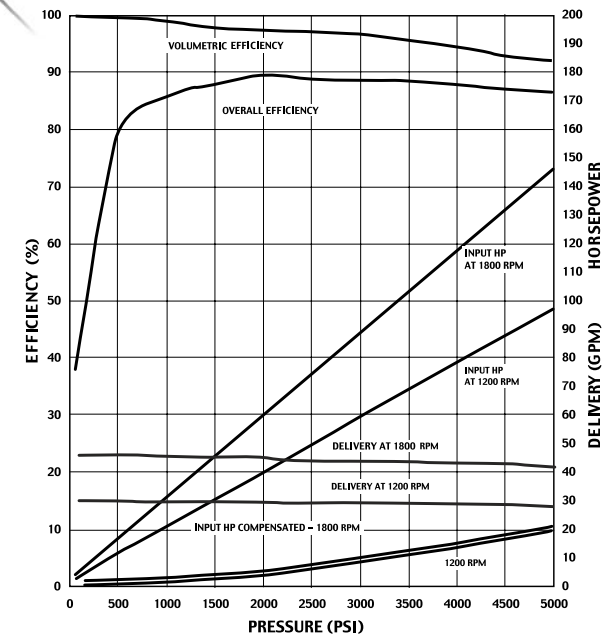

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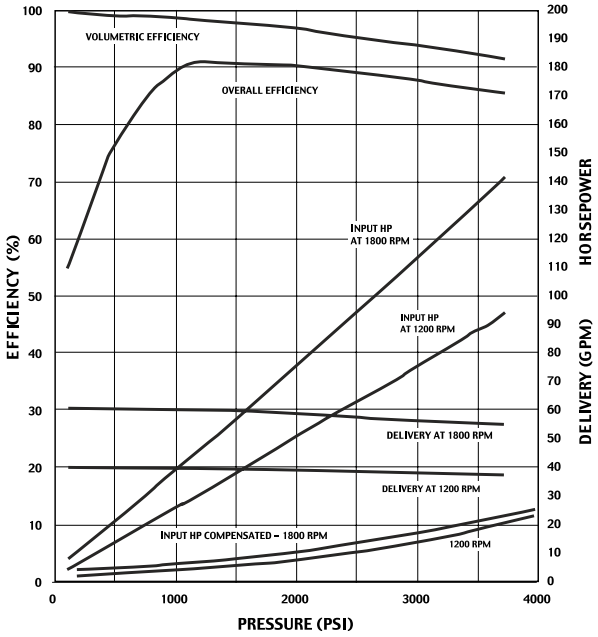
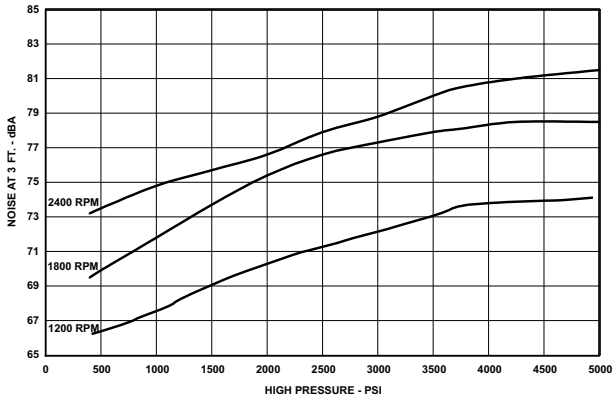


SOUND

All of the sound curves are based on pump delivering full volume.

PVG-048



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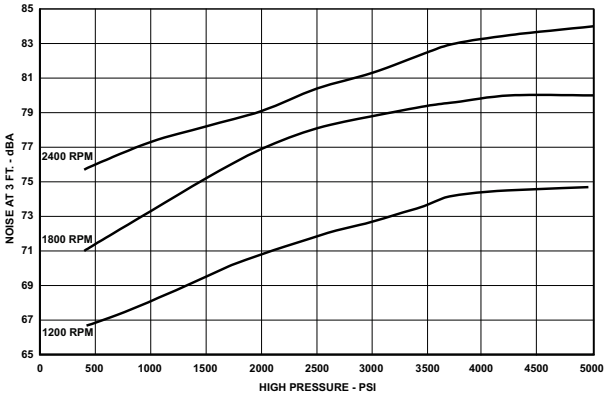

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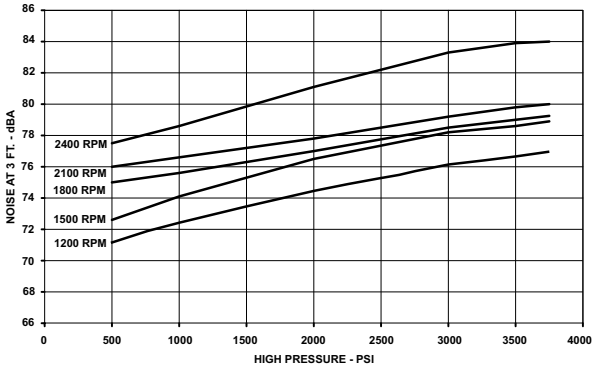

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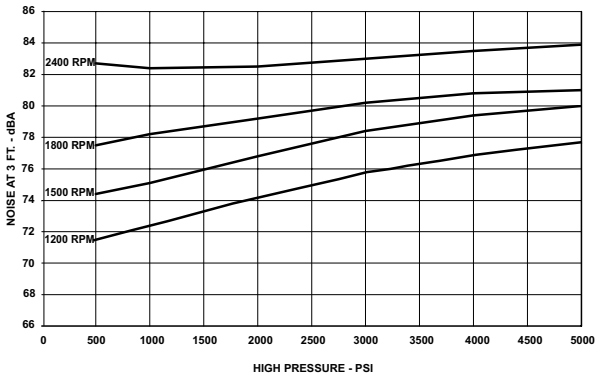

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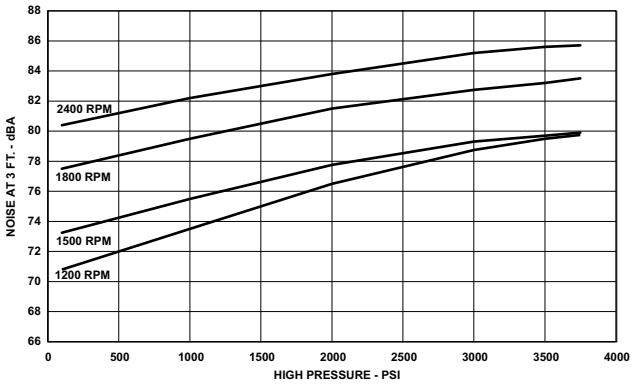
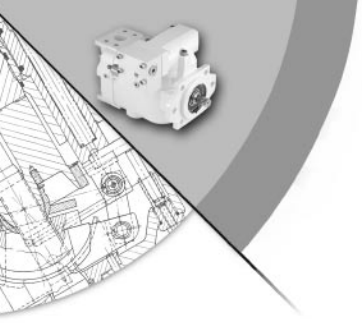
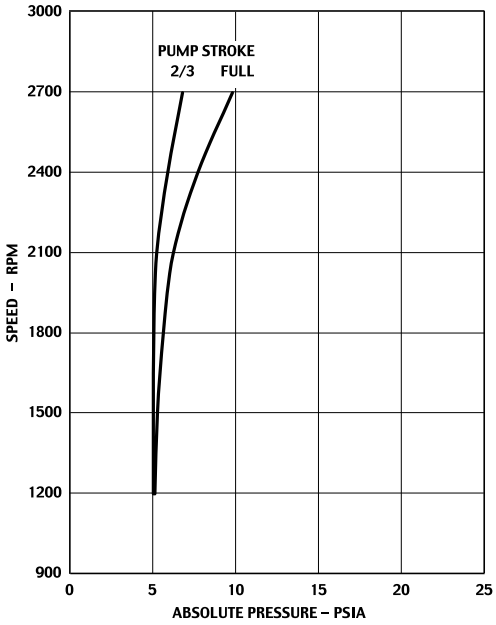




INLET SUCTION/SUPERCHARGE

Inlet/supercharge and sound curves are based on a viscosity of 500 SSU.

PVG-048



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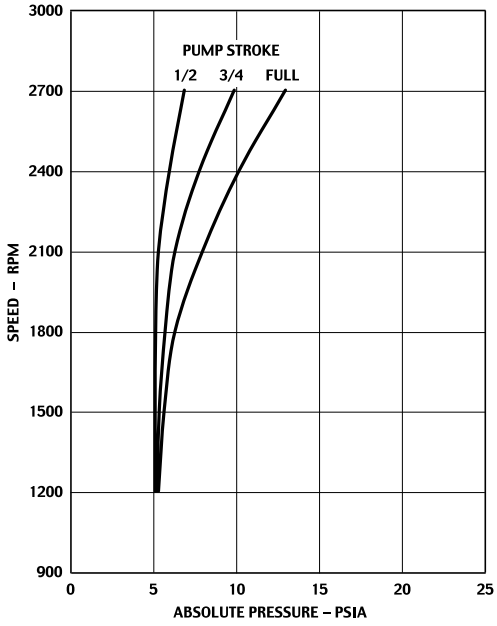

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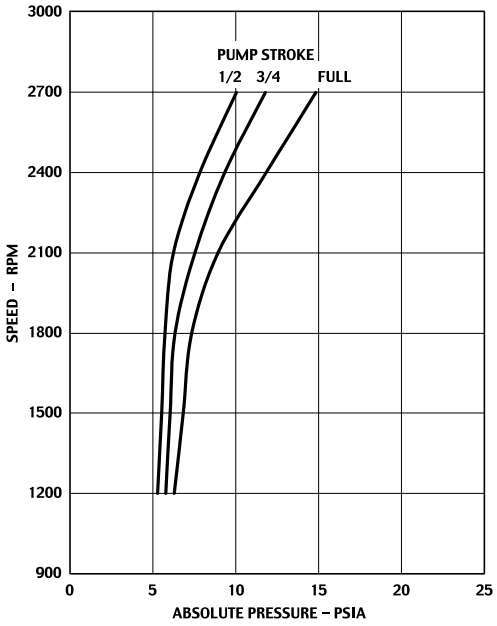
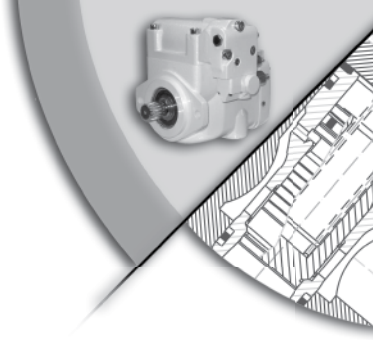
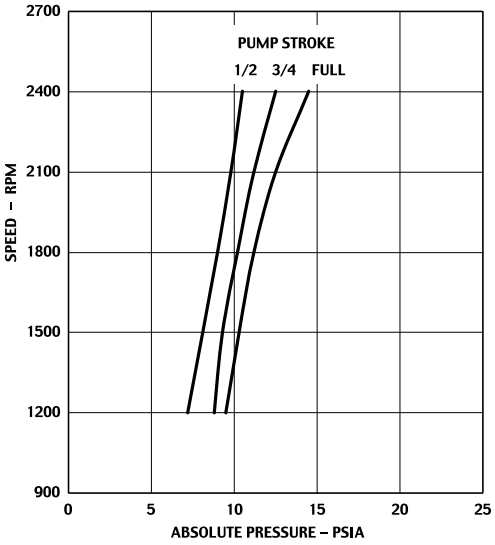
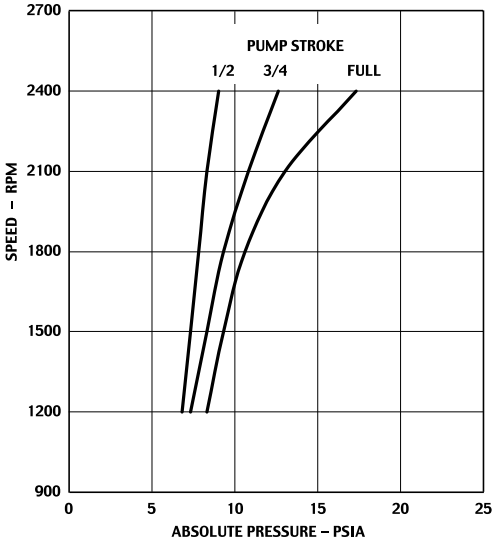


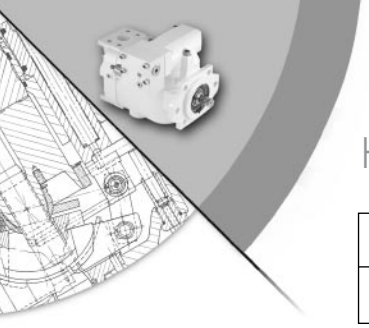


PVG-100



PVG-130





HOW TO ORDER

BLOCK NUMBER EXPLANATION	1	2	3	-	4	-	5	6	7	-	8	9	10	11	-	12	-	13	14	-	15	/	16
VARIABLE PUMP EXAMPLE	P	V	G	-	100	-	F1	U	V	-	L	D	F	Y	-	P	-	1NN	SN	-	NN	/	NN

1 = UNIT
P = Pump

2 = TYPE
V = Variable

3 = DESIGN TYPE
G = Type

4 = UNIT SIZE
048 = 48 ml/rev.
065 = 65 ml/rev.
075 = 75 ml/rev.
100 = 100 ml/rev.
130 = 130 ml/rev.

5 = DESIGN SERIES
F1 = Series 100/130
B2 = Series 048/065/075

6 = DESIGN SERIES MODIFIER
U = SAE Conn. & Mounting

7 = SEALS
V = Viton (Standard)
B = Buna-N
P = EPR

8 = ROTATION
L = Left-hand (CCW)
R = Right-hand (CW)

9 = VALVE PLATE TYPE
D = One-way Service; Side Ported (thru shaft)
G = One-way Service; Side Ported
S = One-way Service; Rear Ported

10 = CONNECTION TYPE
F = Flange

11 = SHAFT END DESIGNATOR **(See Table 1)**

12 = CONTROL TYPE
N = None
F = Fixed
P = Pressure Compensating
R = Solenoid Operated Volume
V = Electrohydraulic (with feedback)

13 = CONTROL MODIFIER

13					
a	b	c	/	d	e

F CONTROL ONLY

075 = 75% Stroke
100 = Full Stroke

P CONTROL ONLY

13a = PRESSURE COMPENSATOR OPTIONS
1 = Single Setting
2 = Dual Setting
A = Normally Open Proportional Device
B = Normally Closed Proportional Device
C = Single Pressure with Soft Starting, N.O.

13b = SOLENOID VOLTAGE
N = None Required
0 = 115/60 - 110/50 VAC
1 = 230/60 - 220/50 VAC
2 = 12 VDC
3 = 24 VDC

13c = CONNECTOR
N = None Required
R = .500 NPT w/o Lite
*W = .500 NPT w/Lite
S = PG-11 w/o Lite
*L = PG-11 w/Lite
*Not Available w/P-A or P-B
/OMIT IF NOT REQUIRED

13d = CONTROL MODIFIER
**F = Load Sensing Option
**G = Horsepower Limiting with Load Sensing Option (PVG 100/130 Only)
H = Horsepower Limiter Option (PVG 100/130 Only)
**K = Load Sense w/Minimum Standby Option
**L = Load Sense w/Horsepower and Minimum Standby Option
**Not Available with pressure compensator options 2, A, B or C

13e = INPUT HORSEPOWER @ 1800 RPM
Example: for size 100 or 130 limited to 100 HP Input
100 = 100 HP Input (74.6 kw)

R CONTROL ONLY

13a = TYPE
U = Two Volume Control

13b = SOLENOID VOLTAGE
0 = 115/60 - 110/50 VAC
1 = 230/60 - 220/50 VAC
2 = 12 VDC
3 = 24 VDC

13c = CONNECTOR
R = .500 NPT w/o Lite
W = .500 NPT w/Lite
S = PG-11 w/o Lite
L = PG-11 w/Lite

V CONTROL ONLY

13a = TYPE
M = With Direct Operated Servo Valve
S = With Servo Valve

13b = SIZE
20 = Servo Valve Size 20 (Type M)
25 = Servo Valve Size 25 (Type S)

14 = VOLUME STOPS
NN = No Volume Stop
SA = Minimum Volume Stop (for "V" Control Only)
SB = Maximum and Minimum Volume Stop (for "R" Control Only)
SN = Maximum Volume Stop (Not available for "V" Control)

OMIT THE FOLLOWING IF NOT REQUIRED

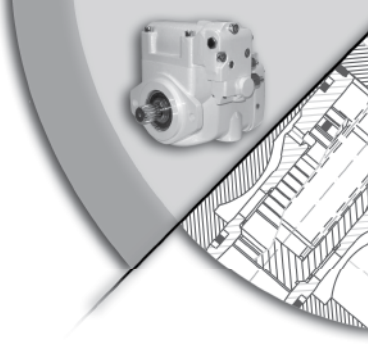
15 = AUXILIARY ADAPTERS
AA = Coupling & Adapter SAE A-A (splined)
AN = Coupling & Adapter SAE A (splined)
BB = Coupling & Adapter SAE B-B (splined)
BN = Coupling & Adapter SAE B (splined)
CN = Coupling & Adapter SAE C (splined)
CP = Cover plate (standard top & bottom ported pump)
NN = None

16 = OPTIONAL GEAR PUMPS
05 = 0.488 cipr (8 ml/rev.)
07 = 0.672 cipr (11ml/rev.)
10 = 0.976 cipr (16 ml/rev.)
14 = 1.403 cipr (23 ml/rev.)
20 = 2.015 cipr (49 ml/rev.)

Table 1 Shaft End Designator

	UNIT SIZE	
	048/065/075	100/130
Y	SAE B-B Key, Full Length	SAE C-C Key, Full Length
Z	N/A	SAE C-C Key, 1" Shorter than "Y"
S	SAE B-B Spline, Loose Fit	SAE C-C Spline, Loose Fit
K	SAE B Spline, Loose Fit	SAE C Spline, Loose Fit
B	SAE C Key	N/A
R	SAE C Spline, Loose Fit	SAE D Spline, Loose Fit

* Subject to change without notice.



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