

THE WORLD DEMANDS  
**OILGEAR**

# PVV PUMPS

Compact, field proven  
high horsepower pumps



**MAKING MACHINES GO AND PROBLEMS GO AWAY®**

910007



**MAKING MACHINES GO  
AND PROBLEMS GO AWAY®**

## THE WORLD DEMANDS OILGEAR

Oilgear has a rich legacy of more than 100 years manufacturing pumps and hydraulic equipment. We pride ourselves on **MAKING MACHINES GO AND PROBLEMS GO AWAY®**. For decades, Oilgear has developed hydraulic techniques to meet the unique needs for many equipment manufacturers and end users worldwide.



**OILGEAR  
TRAVERSE CITY, MI USA**



**OILGEAR  
FREMONT, NE USA**



**OILGEAR TOWLER  
UK**



**OILGEAR  
SOUTH KOREA**



**OILGEAR  
CHINA**



**OILGEAR  
SPAIN**

## Global Service Network

**No matter where you are, Oilgear can quickly and efficiently provide service to you.**

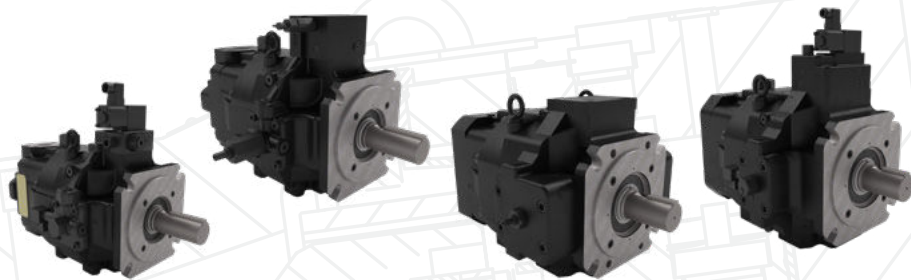
Oilgear's large pump manufacturing centers are in Traverse City, Michigan and Leeds, England. Further domestic manufacturing capacity and product specialization are provided by our Fremont, Nebraska, pump manufacturing facility. We also have manufacturing and field service centers in Germany, France, Spain, China and Korea.

## Engineering and Application Expertise

Oilgear's engineering capabilities are second to none. Our application and field engineers are factory-trained and have spent years, often decades, working in the market segments they service. Every Oilgear engineer brings this personal experience to the meeting table, plus the collective knowledge gained from Oilgear's more than 100 years of servicing the general industry with innovative fluid power solutions.

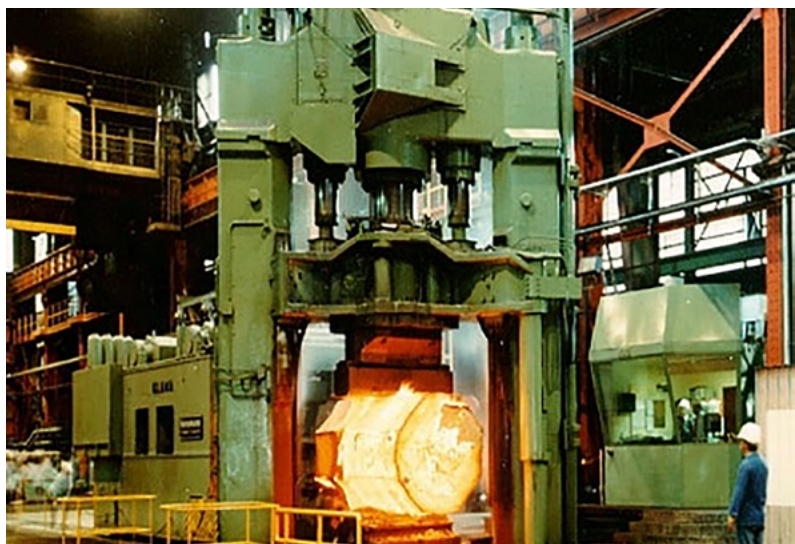






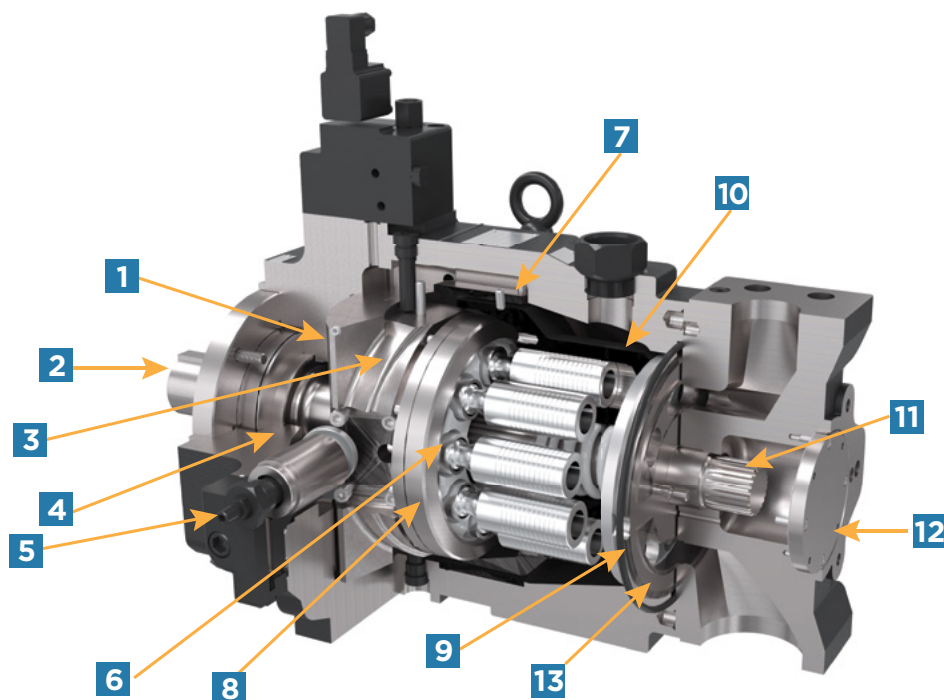
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## Field-Proven Performance

- Up to 587 horsepower (438 kw) in a small package enables compact, light weight installation package
- Proven design rotating group with 25 years of heavy duty applications.
- Engineered with proven materials and robust design.



- 1 Swashblock and integral saddle with special polymerous bearings allows running with low viscosity or other special fluids
- 2 Keyed or splined shaft
- 3 Patented pressure lubricated swashblock design provides high performance for high cycling operation
- 4 Sealed front shaft bearing allows operation with low viscosity or other special fluids
- 5 Adjustable minimum and maximum volume stops (standard)
- 6 Piston shoes run on flat steel thrust plate - Hydrostatically balanced piston shoe assembly provides long life
- 7 Cylinder mounted polymerous journal bearing enables operation with low viscosity or other special fluids
- 8 Industry proven mechanically retained shoe mechanism allows speeds up to 1800 rpm
- 9 Replaceable hardened cylinder wear plate and bronze port plate provides greater resistance to contamination
- 10 Rugged cylinder design hardened nodular iron construction for improved performance and contamination resistance
- 11 Thru-shaft torque capability enables multiple pump installation from a single shaft
- 12 Valve plate selection: Rear or top and bottom port connections available
- 13 Quiet port plate design minimizes noise at typical electric motor speeds

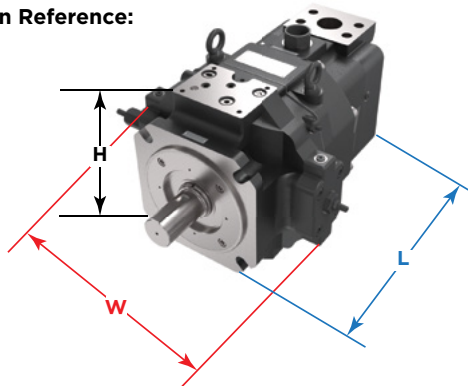


## PVV FAMILY SPECIFICATIONS

MODEL		PVV-200	PVV-250	PVV-440	PVV-540
Theoretical Displacement in <sup>3</sup> /rev [cc/rev]		12.20 [200]	15.26 [250]	26.90 [440]	33.00 [540]
Rate Pressure - Continuous PSI [BAR] Rated		6,000 [414]	5,000 [345]	6,500 [450]	5,000 [345]
Rate Pressure - Peak PSI [BAR] Rated		6,500 [450]	5,800 [400]	7,250 [500]	5,800 [400]
Rated Flow At Continuous Rated Pressure	1000 RPM GPM [LPM]	47 [178]	59 [223]	104 [394]	129 [488]
	1200 RPM GPM [LPM]	58 [219]	72 [273]	125 [473]	155 [587]
	1500 RPM GPM [LPM]	72 [273]	91 [344]	Consult Oilgear Tech Support	Consult Oilgear Tech Support
	1800 RPM GPM [LPM]	86 [326]	109 [413]	Consult Oilgear Tech Support	Consult Oilgear Tech Support
Maximum Speed RPM		1800	1800	1200	1200
Power Input At Continuous Rated Pressure	1000 RPM HP [kW]	185 [138]	203 [152]	489 [365]	460 [343]
	1200 RPM HP [kW]	223 [166]	242 [180]	587 [438]	547 [408]
	1500 RPM HP [kW]	278 [208]	302 [225]	Consult Oilgear Tech Support	Consult Oilgear Tech Support
	1800 RPM HP [kW]	330 [246]	362 [270]	Consult Oilgear Tech Support	Consult Oilgear Tech Support
Dimensions	Width in. [mm]	16.31 [414.3]		21.11 [536.2]	
	Length in. [mm]	17.14 [435.4]		20.93 [531.6]	
	Height in. [mm]	12.01 [305.1]		15.40 [391.2]	
	Weight lbs. [kg]	355 [161]		735 [333]	
Face Mtg. Flange		ISO 200 4-Bolt or SAE E		ISO 250 4-Bolt	

NOTE: PVV-440 is supercharged only (2-8 bar).

Dimension Reference:



# PVV | MODEL ORDERING INFORMATION

**VARIABLE PUMP**  
**EXAMPLE** PVV — 540 — B2 U V — L D F Y — P — 1NN SN — NN

**BLOCK NUMBER** 1 — 2 — 3 4 5 — 6 7 8 9 — 10 — 11 12 — 13

11a 11b 11c /11d 11e 11f

## 1 = UNIT, TYPE & DESIGN SERIES

**PVV** PVV Variable Displacement Pump

## 2 = UNIT TYPE

<b>200</b>	200 ml/rev.
<b>250</b>	250 ml/rev.
<b>440</b>	440 ml/rev.
<b>540</b>	540 ml/rev.

## 3 = DESIGN SERIES

<b>B2</b>	Series (Subject to change)
<b>D1</b>	540V Controls
<b>A2</b>	440

## 4 = DESIGN SERIES MODIFIER

<b>A</b>	SAE Mounting & BSPP Ports (200/250 only)
<b>B</b>	ISO Mounting & BSPP Ports
<b>S</b>	SAE Mounting & SAE Ports (200/250 only)
<b>U</b>	ISO Mounting & SAE Ports (not available w/440)

## 5 = SEALS

<b>V</b>	Viton (Standard)
<b>B</b>	Buna Nitrile
<b>E</b>	Butyl
<b>P</b>	EPR

## 6 = ROTATION

<b>L</b>	Left Hand (CCW)
<b>R</b>	Right Hand (CW)

## 7 = VALVE PLATE TYPE One-Way Service

<b>D</b>	Top & Bottom Ported (not available with 440)
<b>S</b>	Rear Ported

## 8 = CONNECTION TYPE

<b>F</b>	Flange (Flanges are customer supplied)
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## 9 = SHAFT END DESIGNATOR

<b>Y</b>	Keyed (ISO) (Standard)
<b>S</b>	Splined (SAE)
<b>T</b>	Keyed (SAE)

## 10 = CONTROL TYPE

<b>A</b>	Force Amplifier (not available w/440)
<b>F</b>	Fixed (screw adjustable)
<b>P</b>	Pressure Compensating (not available w/440)
<b>R</b>	Two Position Solenoid Selector
<b>V</b>	Electrohydraulic (w/Feedback)

## FOR CONTROL TYPE P ONLY

### 11a= COMPENSATOR OPTIONS

<b>1</b>	Single Setting
<b>2</b>	Dual Setting
<b>3</b>	Triple Setting
<b>A</b>	Normally Open Proportional Device
<b>B</b>	Normally Closed Proportional Device
<b>C</b>	Single Pressure with Soft Start
<b>D</b>	Dual Pressure with Soft Start
<b>E</b>	Triple Pressure with Soft Start
<b>R</b>	Remote Control

### 11b= SOLENOID VOLTAGE

<b>N</b>	None Required
<b>0</b>	115/60 - 110/50 VAC
<b>1</b>	230/60 - 220/50 VAC
<b>2</b>	12 VDC
<b>3</b>	24 VDC

### 11c= CONNECTOR

<b>N</b>	None Required
<b>R</b>	.500 NPT w/o Lite
<b>W</b>	.500 NPT w/Lite
<b>S</b>	PG-11 w/o Lite
<b>L</b>	PG-11 w/Lite

### 11d= CONTROL MODIFIER

<b>F</b>	Load Sense Option
<b>G</b>	Load Sense w/Horsepower Limiting Option
<b>H</b>	Horsepower Limiting Option

### 11e= INPUT HORSEPOWER OVER-RIDE

<b>100</b>	100 HP Input (Specify 1800 RPM HP)
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## 12 = VOLUME STOPS

<b>SN</b>	Maximum
<b>SA</b>	Minimum
<b>SB</b>	Maximum and Minimum

## 13 = VALVE PLATE ADAPTER - FOR TOP & BOTTOM PORTED VALVE PLATE ONLY

<b>NN</b>	None
<b>CP</b>	Cover Plate
<b>AN</b>	SAE A; 2 Bolt Mounting (200/250 only)
<b>AA</b>	SAE AA; 2 Bolt Mounting (200/250 only)
<b>BN</b>	SAE B; 2 Bolt Mounting
<b>BB</b>	SAE BB; 2 Bolt Mounting (200/250 only)
<b>CN</b>	SAE C; 2 Bolt Mounting

## FOR CONTROL TYPE R ONLY

### 11a= TYPE

<b>U</b>	Two Volume Control
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### 11b= SOLENOID VOLTAGE

<b>0</b>	115/60 - 110/50 VAC
<b>1</b>	230/60 - 220/50 VAC
<b>2</b>	12 VDC
<b>3</b>	24 VDC

### 11c= CONNECTOR

<b>N</b>	None Required
<b>R</b>	.500 NPT w/o Lite
<b>W</b>	.500 NPT w/Lite
<b>S</b>	PG-11 w/o Lite
<b>L</b>	PG-11 w/Lite
<b>B</b>	.500 NPT Conduit Box

## FOR CONTROL TYPE V ONLY

### 11a= TYPE

<b>M20</b>	Integral 20 Liter SV
<b>R</b>	Remote Mounted SV

### 11b= (REMOTE ONLY) PUMP MOUNTING

<b>N</b>	Outside of Reservoir
<b>T</b>	"In-Tank" Mounting

### 11c= (REMOTE ONLY) VISUAL STROKE INDICATOR

<b>N</b>	None Required
<b>L</b>	Cable Mounting Arranged For Indicator on Left Side of Pump Facing Drive Shaft
<b>R</b>	Cable Mounting Arranged For Indicator on Right Side of Pump, Facing Drive Shaft

### 11d= (INTEGRAL SV ONLY) CONTAMINATION FUSE

<b>F</b>	Fuse Included
<b>OMIT</b>	NO FUSE

For non-standard requests,  
please contact technical sales.  
Subject to change without notice.



# PVV | MODEL ORDERING INFORMATION

**VARIABLE PUMP**  
**EXAMPLE** PVV — 540 — B2 U V — L D F Y — A — RRG/P-F SN — NN

**BLOCK NUMBER** 1 — 2 — 3 4 5 — 6 7 8 9 — 10 — 11 12 — 13

11a 11b 11c /11d 11e 11f

## 1 = UNIT, TYPE & DESIGN SERIES

**PVV** PVV Variable Displacement Pump

## 2 = UNIT TYPE

<b>200</b>	200 ml/rev.
<b>250</b>	250 ml/rev.
<b>440</b>	440 ml/rev.
<b>540</b>	540 ml/rev.

## 3 = DESIGN SERIES

<b>B2</b>	Series (Subject to change)
<b>D1</b>	540V Controls
<b>A2</b>	440

## 4 = DESIGN SERIES MODIFIER

<b>A</b>	SAE Mounting & BSPP Ports (200/250 only)
<b>B</b>	ISO Mounting & BSPP Ports
<b>S</b>	SAE Mounting & SAE Ports (200/250 only)
<b>U</b>	ISO Mounting & SAE Ports (not available w/440)

## 5 = SEALS

<b>V</b>	Viton (Standard)
<b>B</b>	Buna Nitrile
<b>E</b>	Butyl
<b>P</b>	EPR

## 6 = ROTATION

<b>L</b>	Left Hand (CCW)
<b>R</b>	Right Hand (CW)

## 7 = VALVE PLATE TYPE One-Way Service

<b>D</b>	Top & Bottom Ported (not available with 440)
<b>S</b>	Rear Ported

## 8 = CONNECTION TYPE

<b>F</b>	Flange (Flanges are customer supplied)
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## 9 = SHAFT END DESIGNATOR

<b>Y</b>	Keyed (ISO) (Standard)
<b>S</b>	Splined (SAE)
<b>T</b>	Keyed (SAE)

## 10 = CONTROL TYPE

<b>A</b>	Force Amplifier (not available w/440)
<b>F</b>	Fixed (screw adjustable)
<b>P</b>	Pressure Compensating (not available w/440)
<b>R</b>	Two Position Solenoid Selector
<b>V</b>	Electrohydraulic (w/Feedback)

## FOR CONTROL TYPE A ONLY

### 11a = OPERATOR

<b>E</b>	Proportional Coil Amplifier Connector (Open Loop) obsolete
<b>F</b>	Proportional Coil Operator w/ Amplifier Connector & D.C.D.T (Closed Loop) obsolete
<b>R</b>	Remote Pressure Signal 150 to 650 PSI (10 to 45 Bar)
<b>P</b>	Pull Type Manual Stem Operator
<b>M</b>	Push Type Manual Stem Operator

### 11b = SIGNAL OUTPUT

<b>R</b>	Rising Signal/Increases Stroke
<b>F</b>	Falling Signal/Increases Stroke

### 11c = CONTROL BIAS

<b>F</b>	Spring Bias to Full Stroke (Standard)
<b>G</b>	With Sequence Valve for Standby Pilot
<b>H</b>	Ext. Pilot Pressure Port w/Checks

### 11d = UNIT

<b>P</b>	Pressure Over-ride Modifiers
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### 11e = PRESSURE OVER-RIDE OPTIONS

<b>F</b>	Single Setting Flange Mount with System Safety
<b>G</b>	Multi Compensator or System Relief Settings Via Pilot Control Module; Flange Mount

### 11f = INPUT HORSEPOWER OVER-RIDE

<b>H100</b>	100 HP Input (Specify 1800 RPM HP)
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## FOR CONTROL TYPE F ONLY

### 11abc = STROKE

<b>100</b>	Full Stroke
<b>075</b>	75% Stroke
<b>050</b>	50% Stroke, etc.

## 12 = VOLUME STOPS

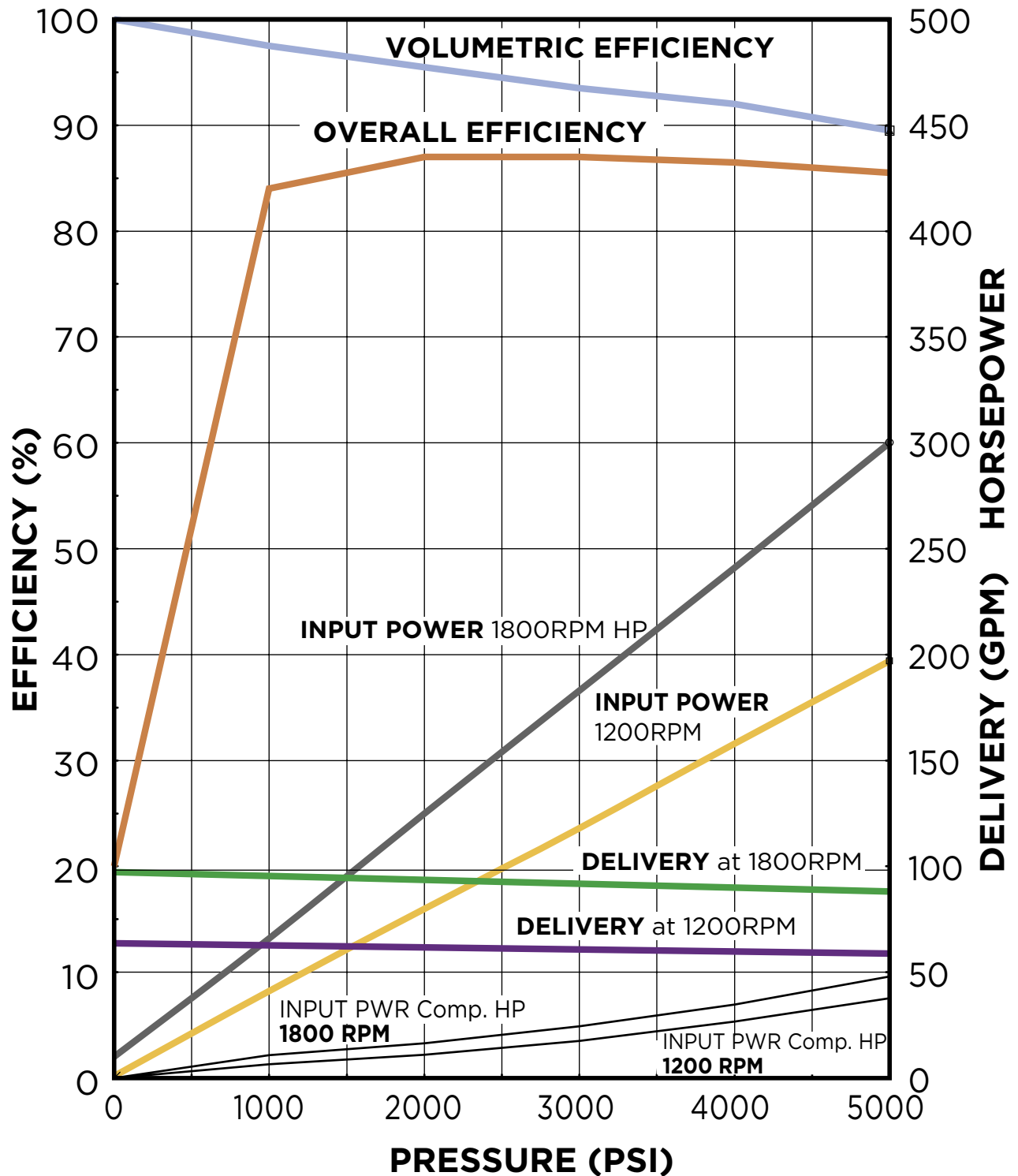
<b>SN</b>	Maximum
<b>SA</b>	Minimum
<b>SB</b>	Maximum and Minimum

## 13 = VALVE PLATE ADAPTER - FOR TOP & BOTTOM PORTED VALVE PLATE ONLY

<b>NN</b>	None
<b>CP</b>	Cover Plate
<b>AN</b>	SAE A; 2 Bolt Mounting (200/250 only)
<b>AA</b>	SAE AA; 2 Bolt Mounting (200/250 only)
<b>BN</b>	SAE B; 2 Bolt Mounting
<b>BB</b>	SAE BB; 2 Bolt Mounting (200/250 only)
<b>CN</b>	SAE C; 2 Bolt Mounting

For non-standard requests, please contact technical sales.  
Subject to change without notice.

**PERFORMANCE DATA**



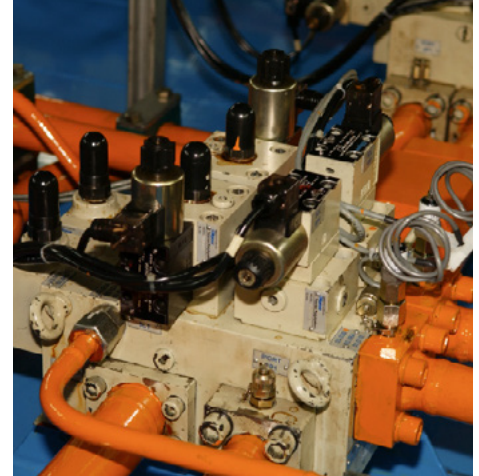




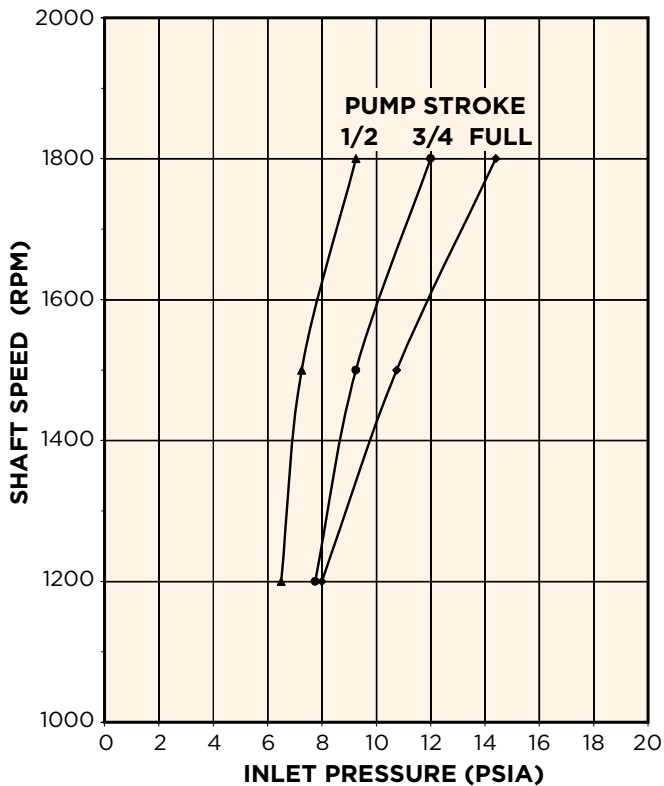
# PVV-200

## CONNECTIONS TABLE

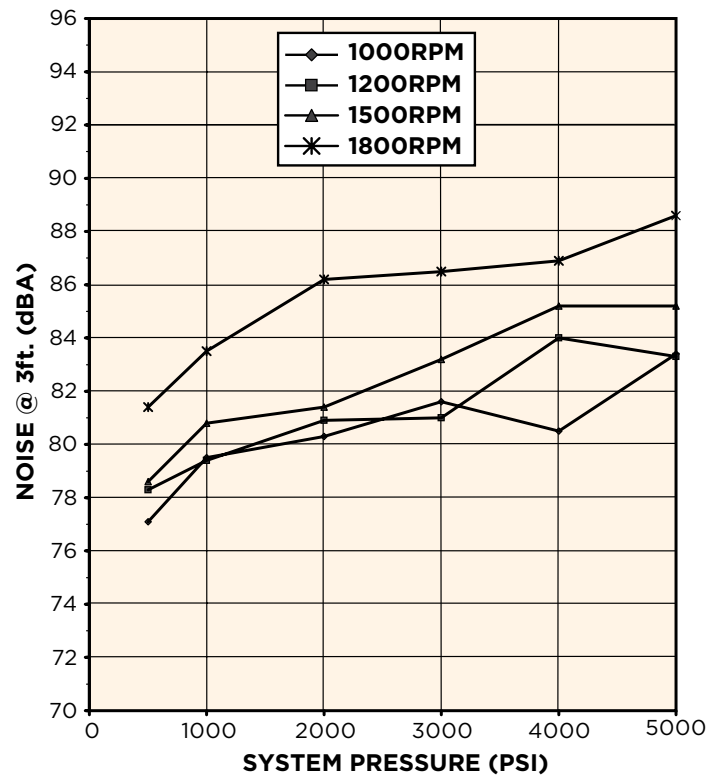
DESIGN SERIES	A	B	S	U
INLET	3" SAE Code 61 (M16 BOLTS)	3" SAE Code 61 (M16 BOLTS)	3" SAE Code 61 (5/8" BOLTS)	3" SAE Code 61 (5/8" BOLTS)
OUTLET	2" SAE Code 62 (M20 BOLTS)	2" SAE Code 62 (M20 BOLTS)	2" SAE Code 62 (3/4" BOLTS)	2" SAE Code 62 (3/4" BOLTS)
CASE DRAIN	1.25" BSP Threaded Port	1.25" BSP Threaded Port	#20 SAE Threaded Port Adapter	#20 SAE Threaded Port Adapter



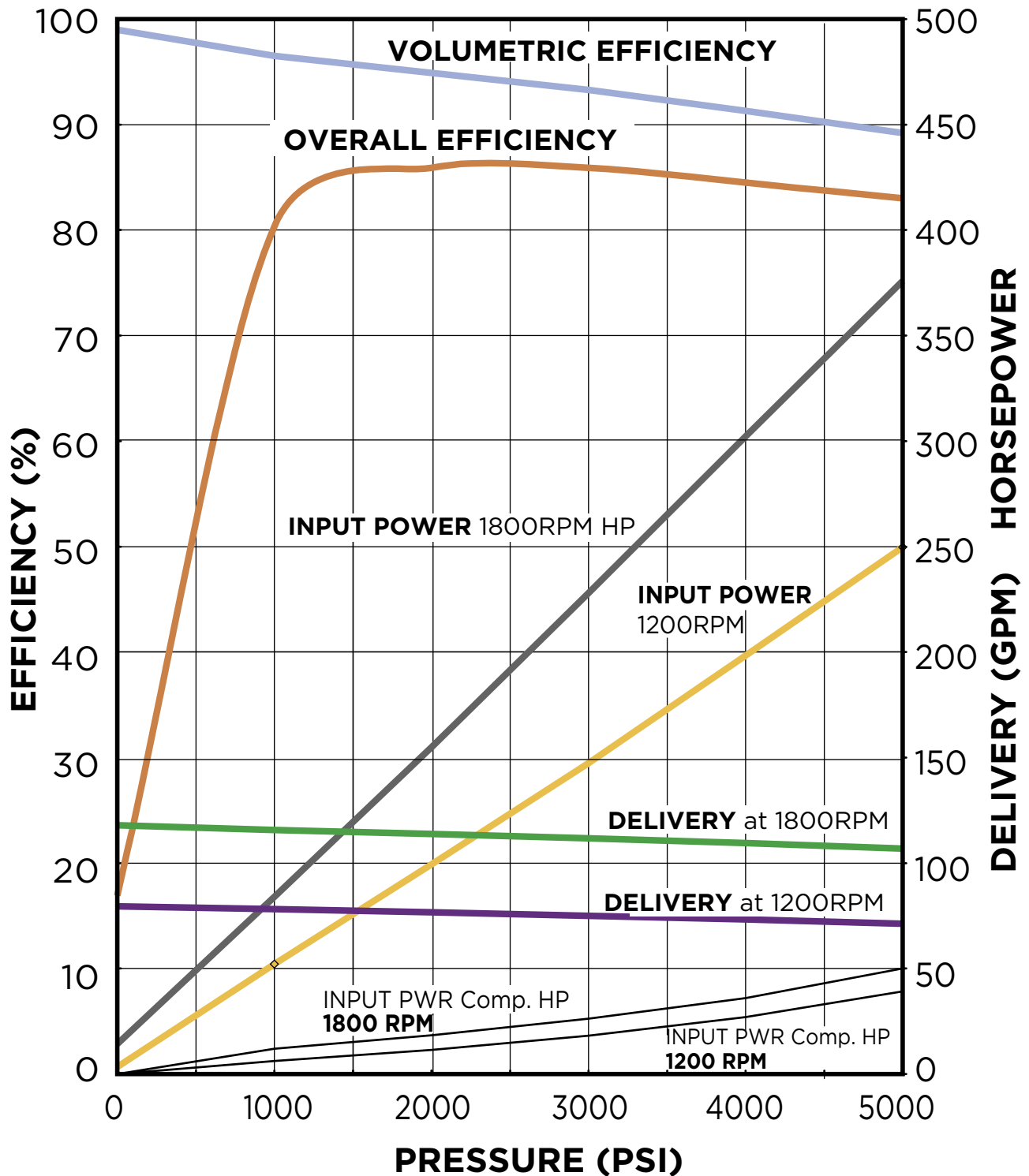
## INLET DATA



## SOUND DATA



**PERFORMANCE DATA**

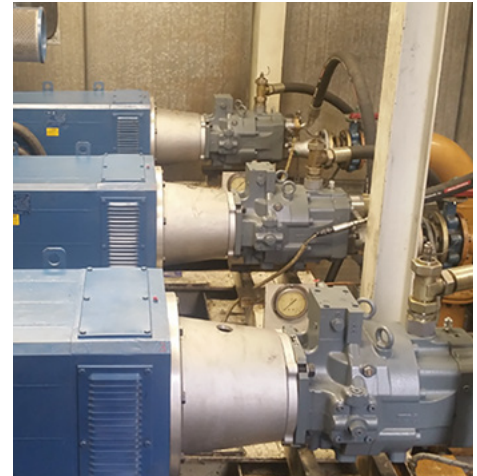




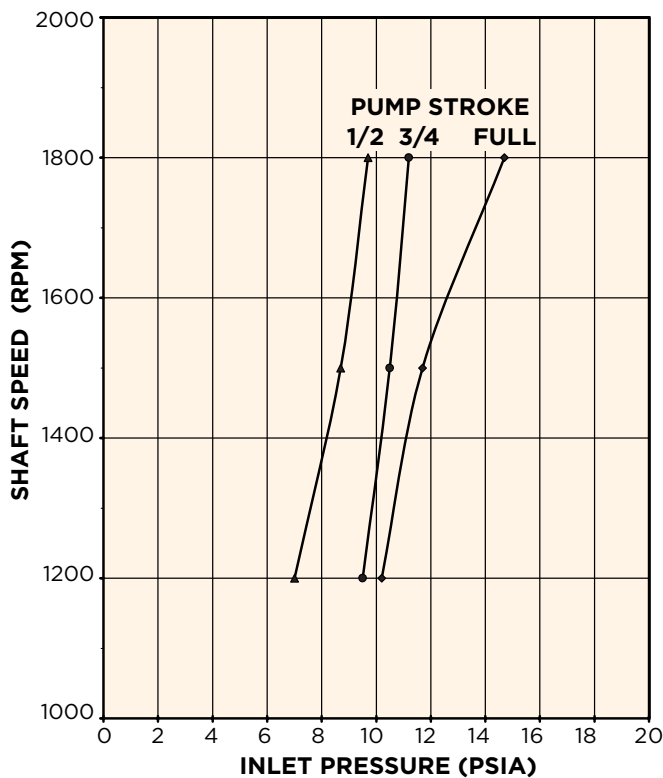
# PVV-250

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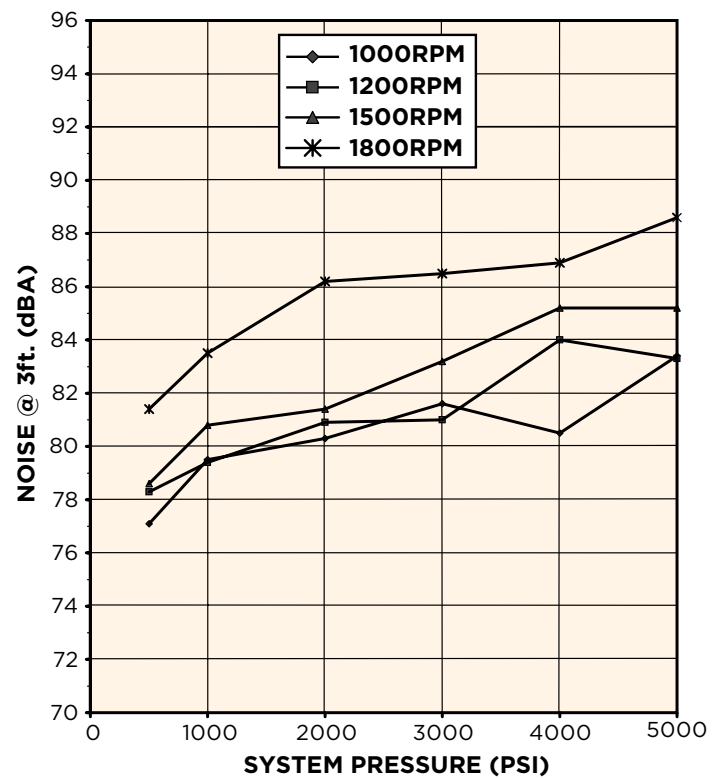
DESIGN SERIES	A	B	S	U
INLET	3" SAE Code 61 (M16 BOLTS)	3" SAE Code 61 (M16 BOLTS)	3" SAE Code 61 (5/8" BOLTS)	3" SAE Code 61 (5/8" BOLTS)
OUTLET	2" SAE Code 62 (M20 BOLTS)	2" SAE Code 62 (M20 BOLTS)	2" SAE Code 62 (3/4" BOLTS)	2" SAE Code 62 (3/4" BOLTS)
CASE DRAIN	1.25" BSP Threaded Port	1.25" BSP Threaded Port	#20 SAE Threaded Port Adapter	#20 SAE Threaded Port Adapter



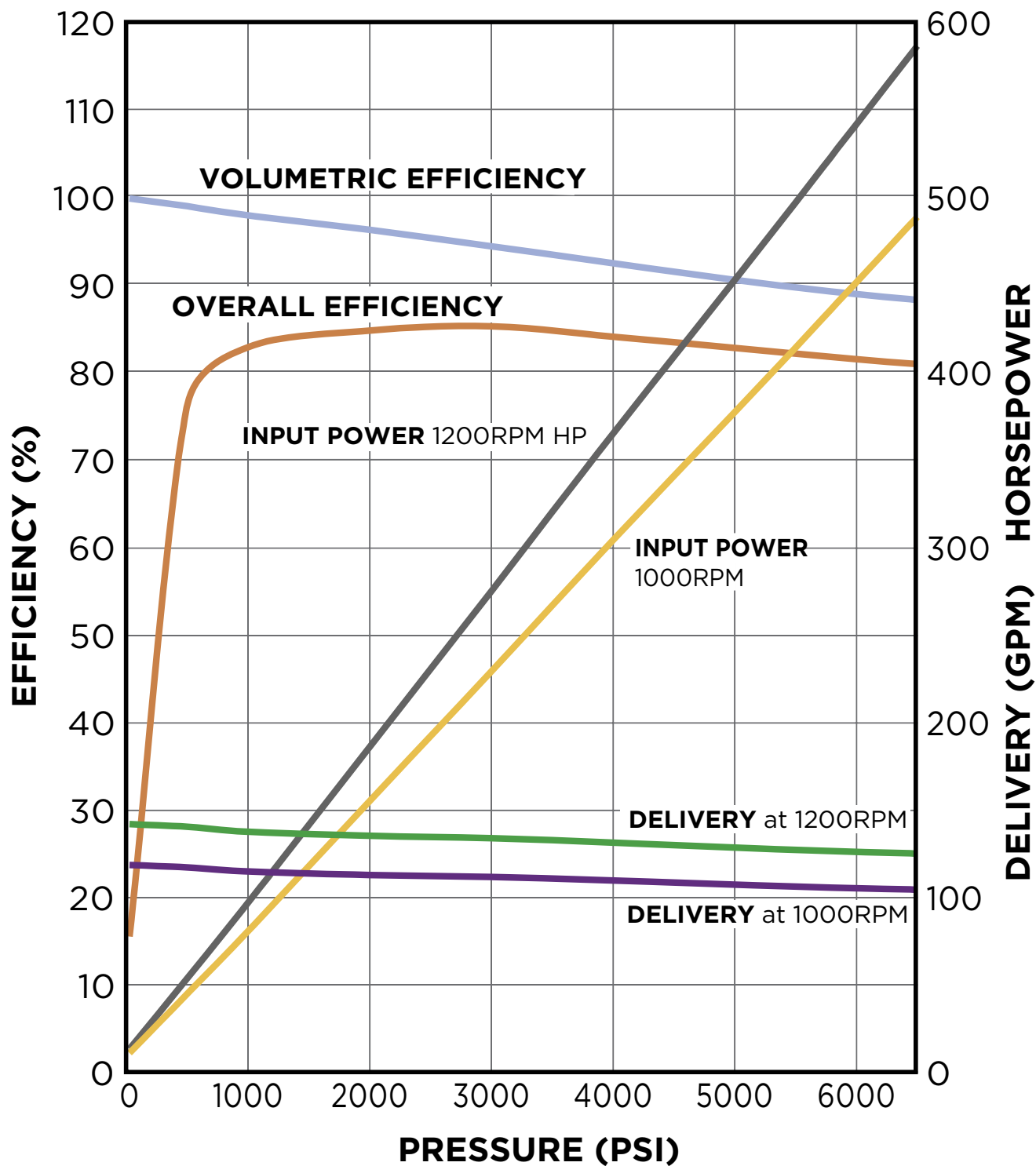
## INLET DATA



## SOUND DATA



**PERFORMANCE DATA**



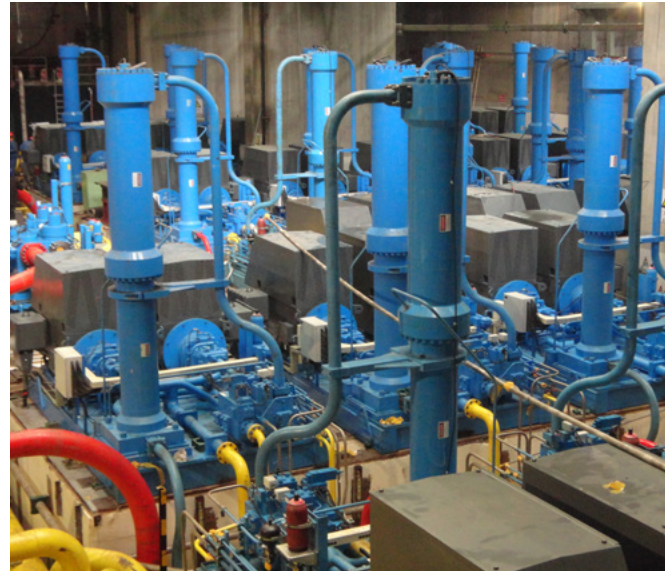




# PVV-440

## CONNECTIONS TABLE

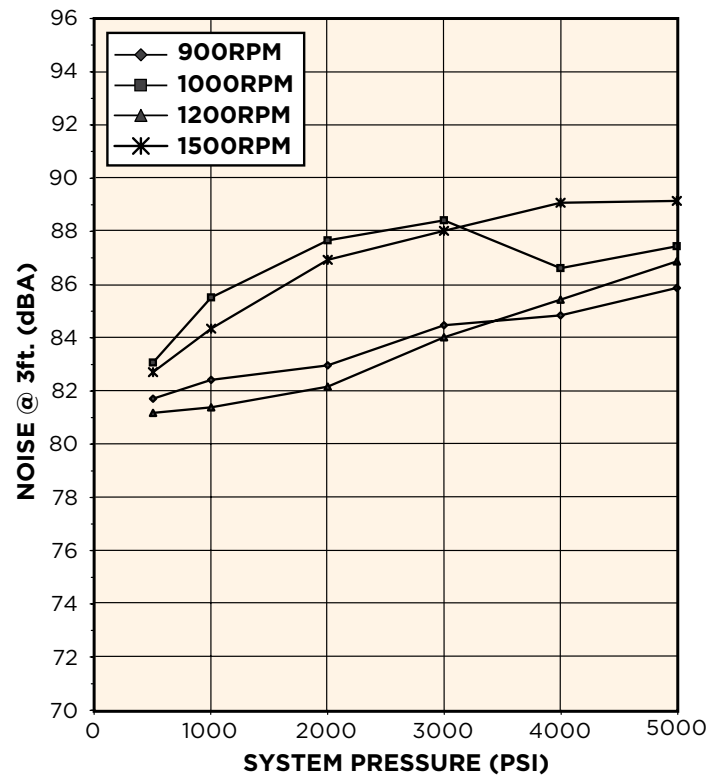
DESIGN SERIES	B
INLET	4" SAE Code 61 (M16 BOLTS)
OUTLET	Oilgear Towler HP Flange Code L700669G006 (M30 BOLTS)
CASE DRAIN	1.5" BSP Threaded Port



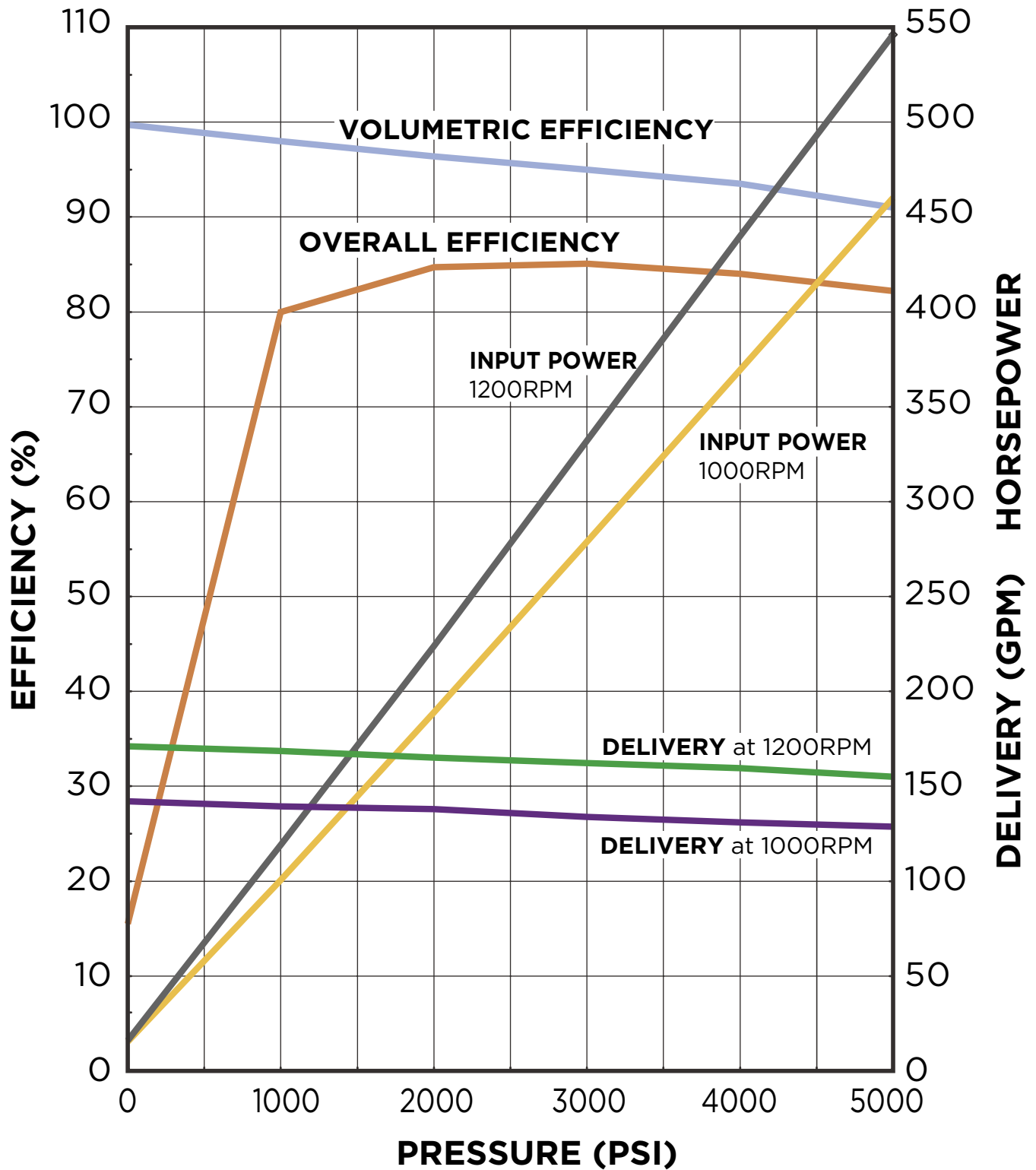
## INLET DATA

Supercharged inlet required.  
29 psia minimum. 200 psig maximum.

## SOUND DATA



**PERFORMANCE DATA**





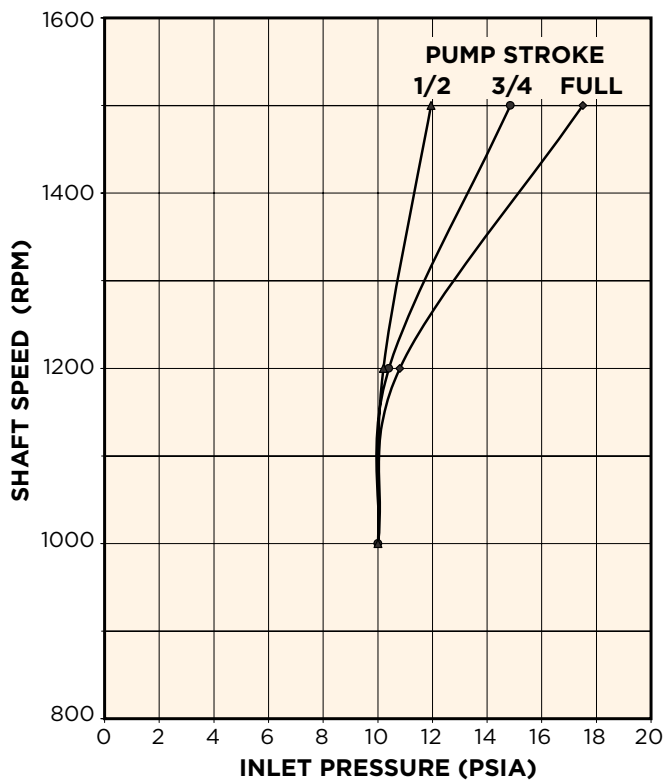
# PVV-540

## CONNECTIONS TABLE

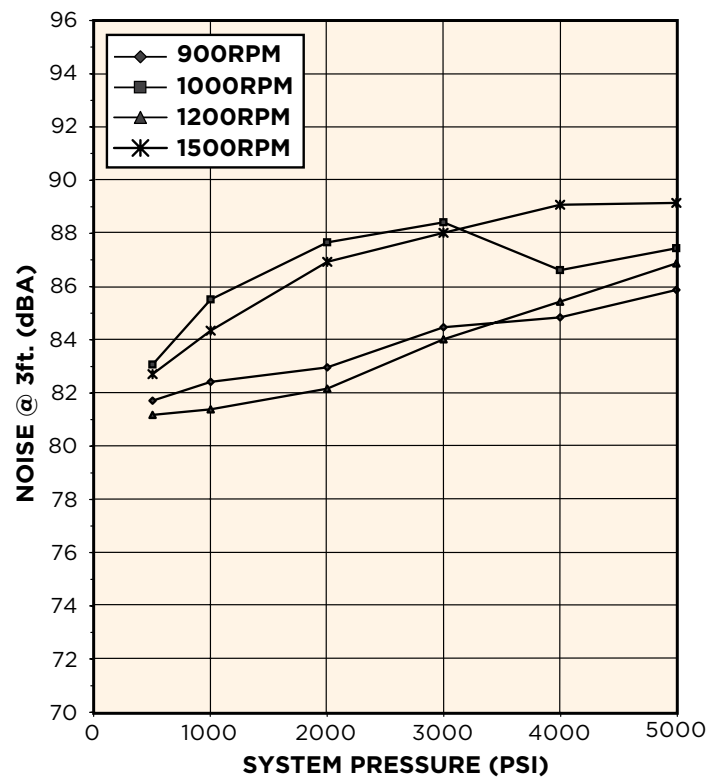
DESIGN SERIES	B	U
INLET	4" SAE Code 61 (M16 BOLTS)	4" SAE Code 61 (5/8" BOLTS)
OUTLET	2.5" SAE Code 62 (M24 BOLTS)	2.5" SAE Code 62 (7/8" BOLTS)
CASE DRAIN	1.5" BSP Threaded Port	#24 SAE Threaded Port Adapter



## INLET DATA

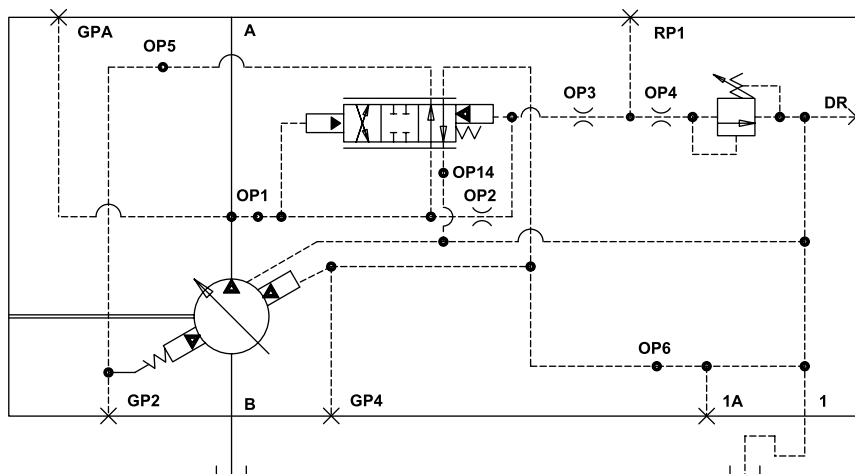


## SOUND DATA



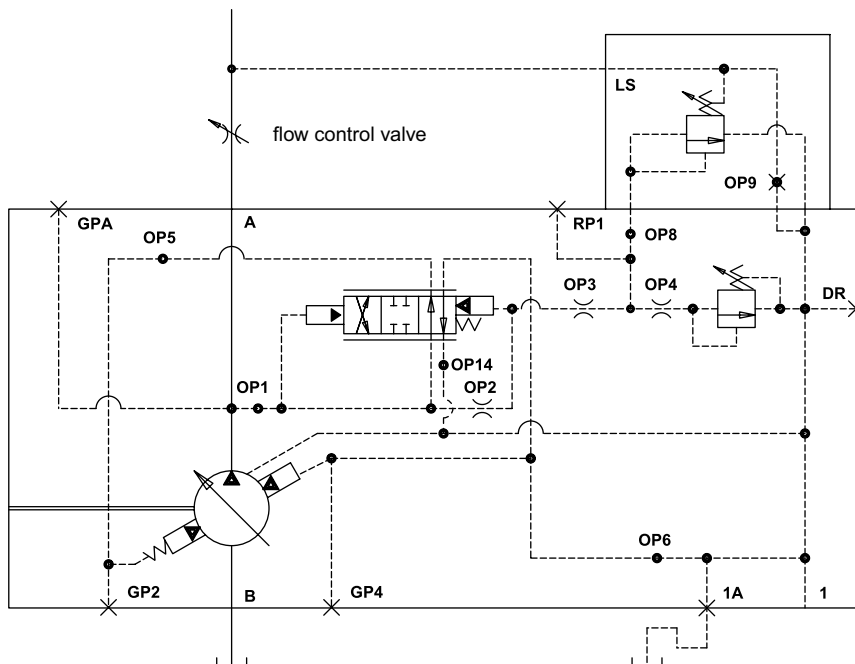
### ■ SINGLE PRESSURE COMPENSATOR P-1NN

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



### ■ SINGLE PRESSURE COMPENSATOR W/ LOAD SENSE P-1NN/F

Maintains a constant flow rate for a given flow control valve setting regardless of changes in drive speed and/or working pressure.



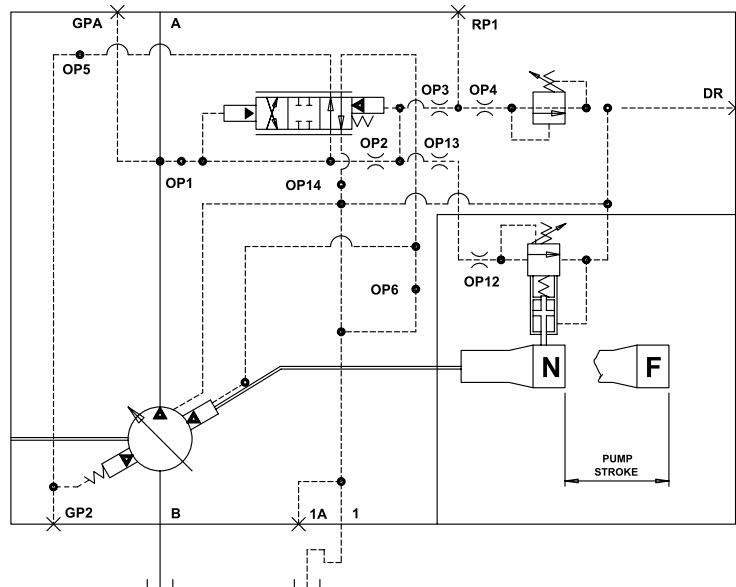
- \* Be sure system and pumps are protected against over loads with a high pressure relief valve.  
If control shifts faster than 150 milliseconds, cavitation can occur.
- # Not to be used for decompressing system.
- \*\* PVV-440 only available with F, VR, RU and VM controls.



## ■ SINGLE PRESSURE COMPENSATOR W/ HORSEPOWER LIMIT P-1NN/H

To limit horsepower consumption, pump delivery is automatically reduced as unit pressure rises.

Refer to note in "How to Order" prior to specifying input horsepower.

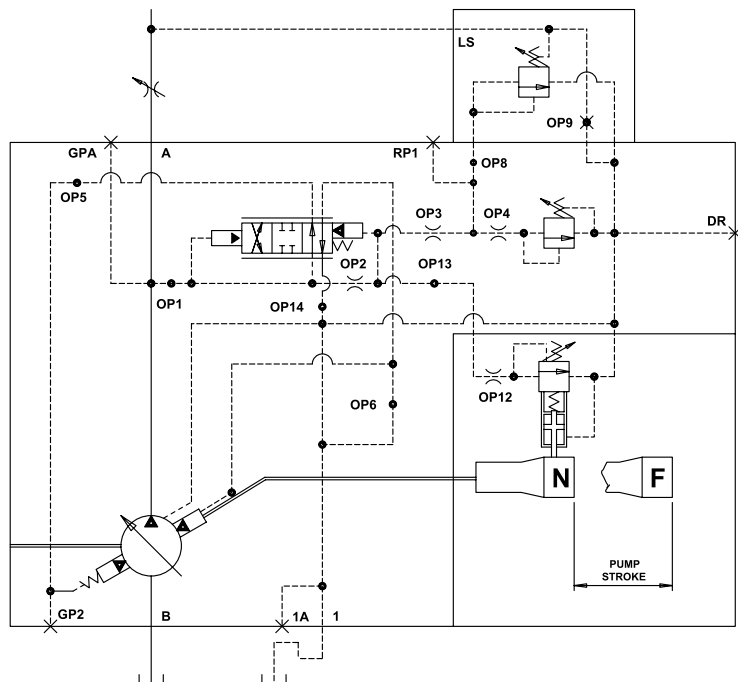


## ■ SINGLE PRESSURE COMPENSATOR W/ HORSEPOWER LIMIT & LOAD SENSE P-1NN/G

Load sensing control matches pump flow and pressure to load demand until (limited) horsepower setting is reached.

Control then automatically reduces pump delivery as system pressure rises to limit horsepower consumption.

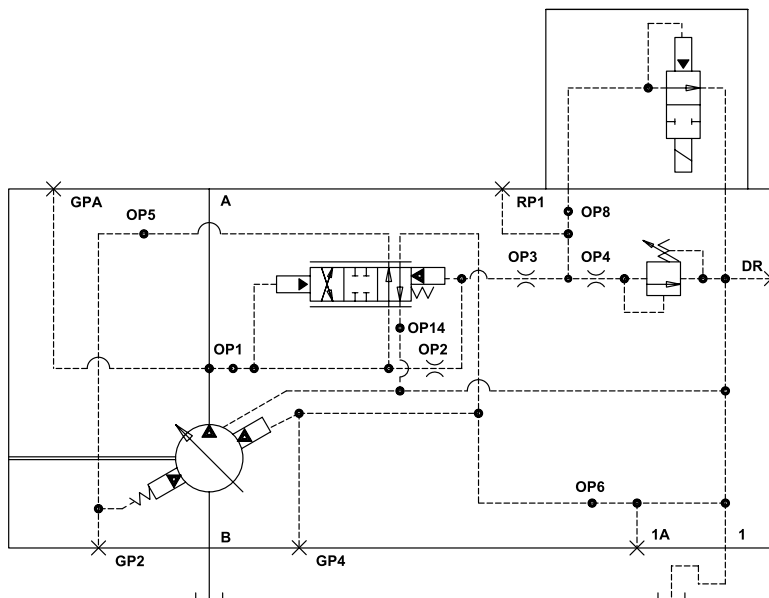
Refer to note in "How to Order" prior to specifying input horsepower.



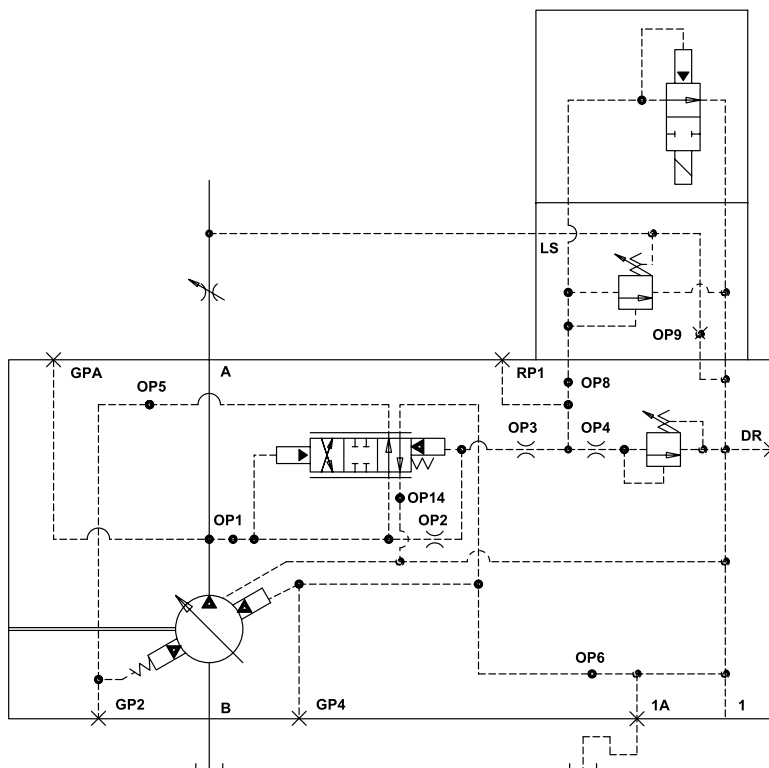
- \* Be sure system and pumps are protected against over loads with a high pressure relief valve.  
If control shifts faster than 150 milliseconds, cavitation can occur.
- # Not to be used for decompressing system.
- \*\* PVV-440 only available with F, VR, RU and VM controls.

**■ SINGLE 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. After start-up, the pressure compensator function takes over.


**■ SINGLE SOFT START W/ LOAD SENSE # P-C--/F**

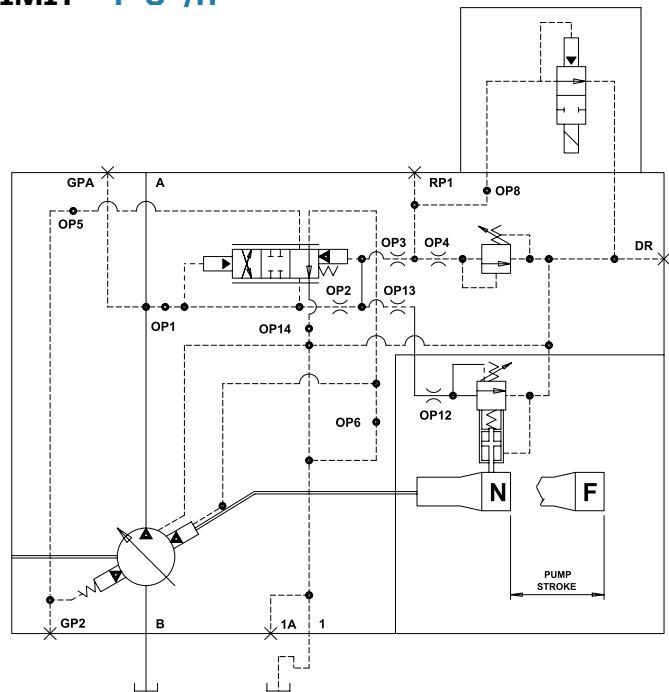
Pump starts “softly” by going quickly at low pressure to a reduced flow setting, before maintaining a constant flow rate for a given flow control valve setting regardless of changes in drive speed and/or working pressure.



- \* Be sure system and pumps are protected against over loads with a high pressure relief valve.  
If control shifts faster than 150 milliseconds, cavitation can occur.
- # Not to be used for decompressing system.
- \*\* PVV-440 only available with F, VR, RU and VM controls.

## ■ SINGLE SOFT START W/ HORSEPOWER LIMIT # P-C--/H

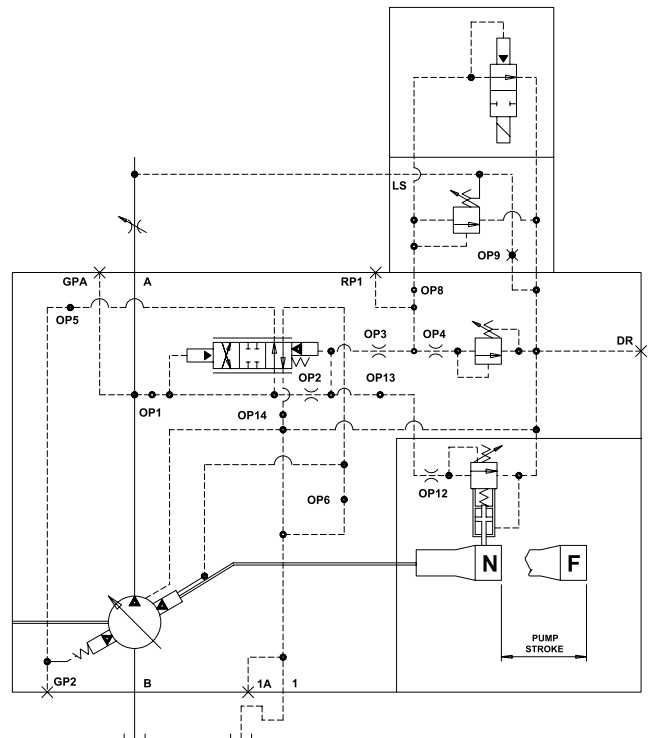
Pump starts “softly” by going quickly at low pressure to a reduced flow setting, thereby reducing start-up torque requirements, before automatically reducing pump delivery as unit pressure rises and limiting horsepower consumption.



## ■ SINGLE SOFT START W/ HORSEPOWER LIMIT & LOAD SENSE # P-C-/G

Pump starts “softly” by going quickly at low pressure to a reduced flow setting, thereby reducing start-up torque requirements before load sensing control matches flow and pressure to load demand until (limit) horsepower setting is reached.

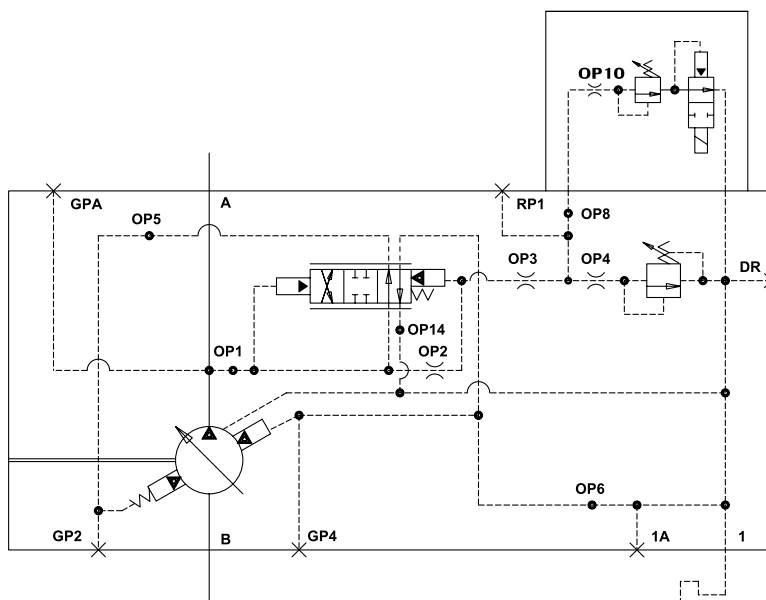
Control then automatically reduces pump delivery as system pressure rises to limit horsepower consumption.



- \* Be sure system and pumps are protected against over loads with a high pressure relief valve.  
If control shifts faster than 150 milliseconds, cavitation can occur.
- # Not to be used for decompressing system.
- \*\* PVV-440 only available with F, VR, RU and VM controls.

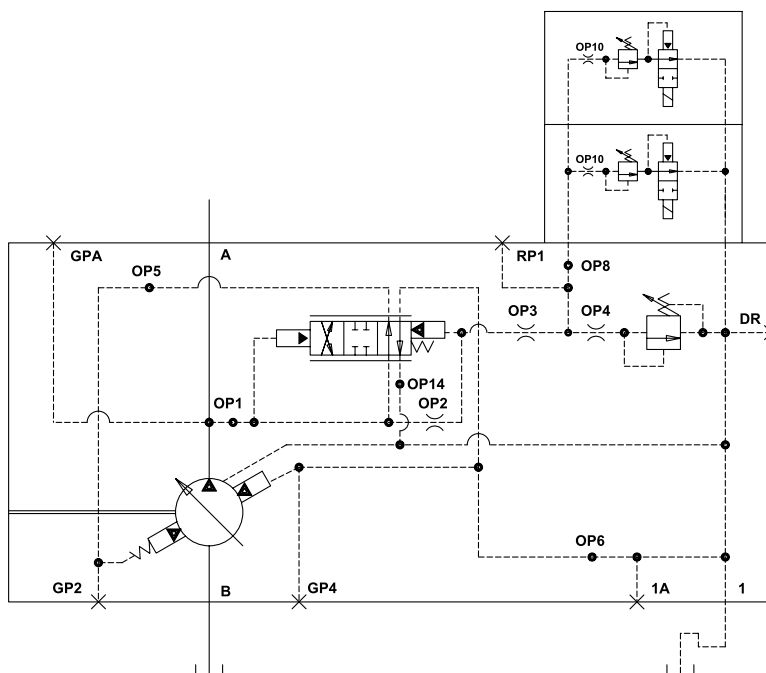
### ■ DUAL PRESSURE COMPENSATOR P-2--

Similar to “P-1NN” but provides two independently adjustable pressure compensated deliveries as selected by an integral solenoid.



### ■ TRIPLE PRESSURE COMPENSATOR P-3--

Similar to “P-1NN” but, provides three independently adjustable pressure compensated deliveries as selected by integral solenoids.

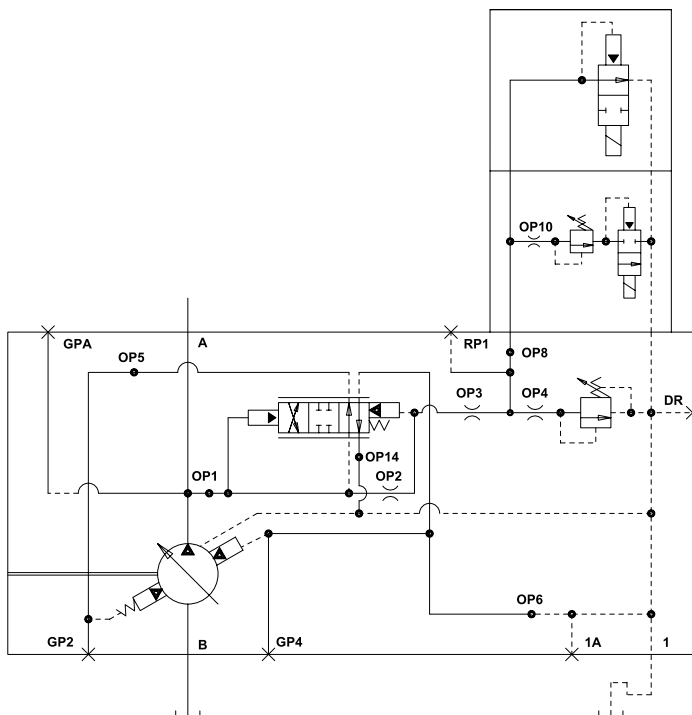


- \* Be sure system and pumps are protected against over loads with a high pressure relief valve.  
If control shifts faster than 150 milliseconds, cavitation can occur.
- # Not to be used for decompressing system.
- \*\* PVV-440 only available with F, VR, RU and VM controls.



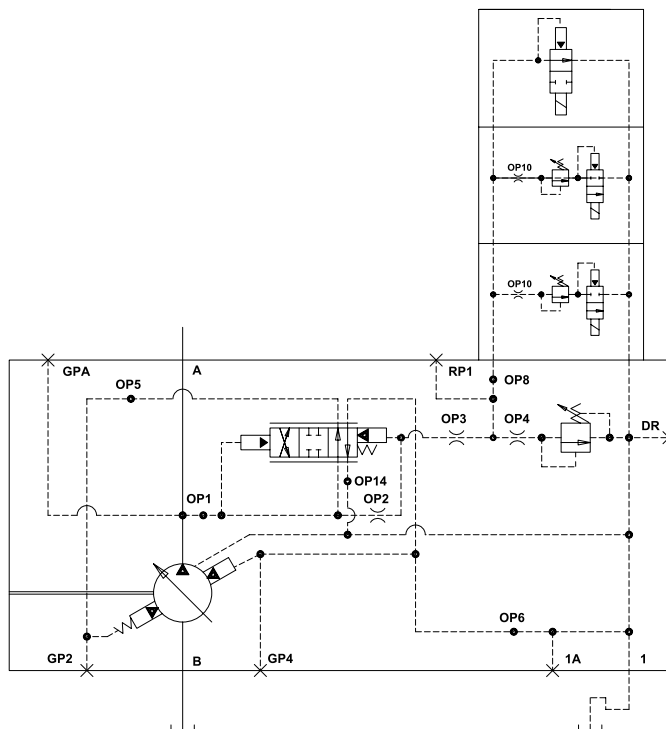
**DUAL SOFT START # P-D--**

Pump starts “softly” similar to “P-C--” but then provides two independently adjustable pressure compensated deliveries as selected by an integral solenoid.



**TRIPLE SOFT START # P-E--**

Similar to "P-C-—" but, after the soft start the unit provides three independently adjustable pressure compensated deliveries as selected by an integral solenoid.

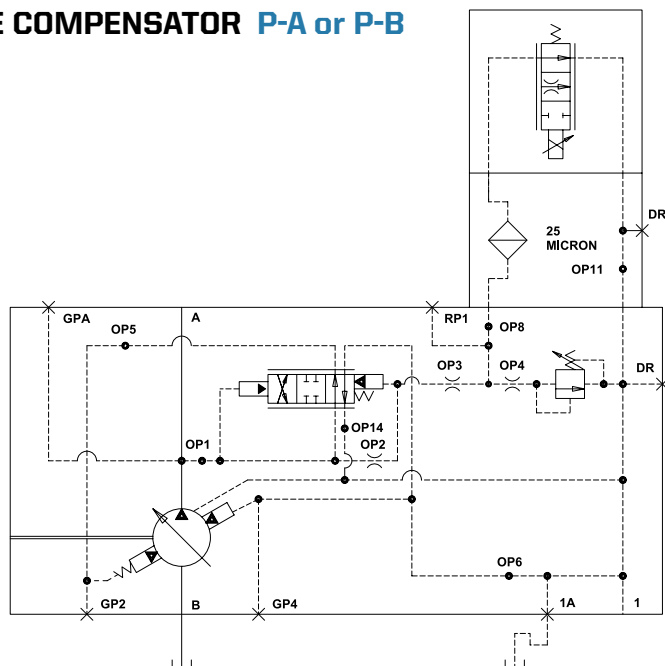


- \* Be sure system and pumps are protected against over loads with a high pressure relief valve. If control shifts faster than 150 milliseconds, cavitation can occur.
- # Not to be used for decompressing system.
- \*\* PVV-440 only available with F, VR, RU and VM controls.

## ■ ELECTRONIC PROPORTIONAL PRESSURE COMPENSATOR **P-A or P-B**

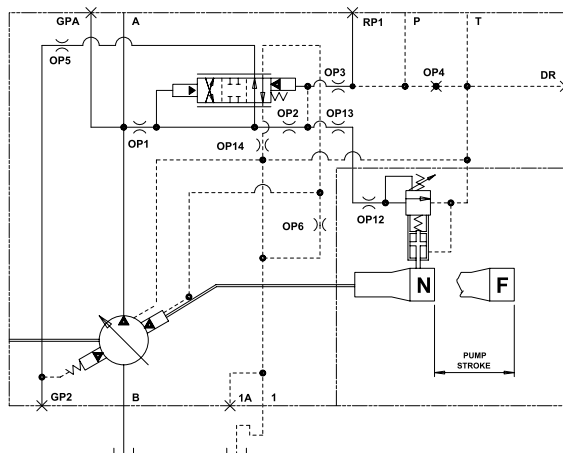
Provides an infinite number of independent remotely adjustable pressure settings in response to an electronic command.

Available in “-A, normally open” configuration (as shown) or in “-B, normally closed” configuration.



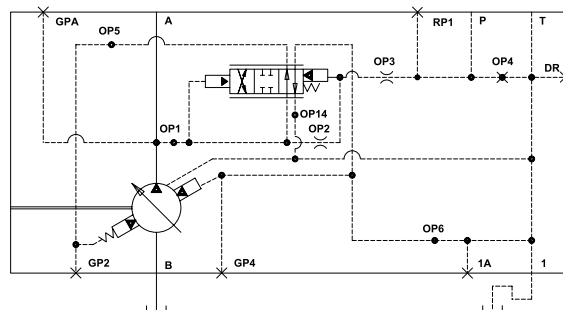
## ■ REMOTE PRESSURE COMPENSATOR W/ HORSEPOWER LIMITER **P-RNN/H**

A remote control module connected to this control can be used to adjust the pressure compensation setting and the horsepower limiter will automatically reduce pump delivery as unit pressure rises.



## ■ REMOTE PRESSURE COMPENSATOR **P-RNN**

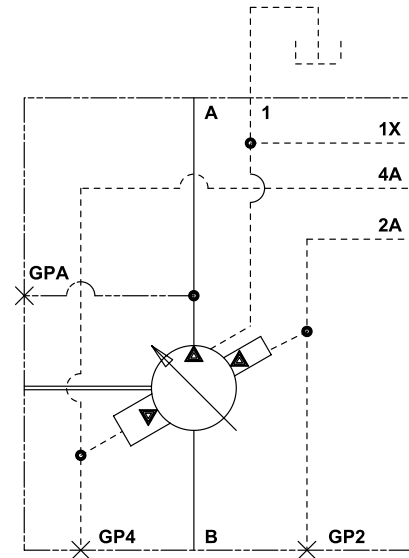
A remote control module connected to this control can be used to adjust the pressure compensation setting.



- \* Be sure system and pumps are protected against over loads with a high pressure relief valve.  
If control shifts faster than 150 milliseconds, cavitation can occur.
- # Not to be used for decompressing system.
- \*\* PVV-440 only available with F, VR, RU and VM controls.

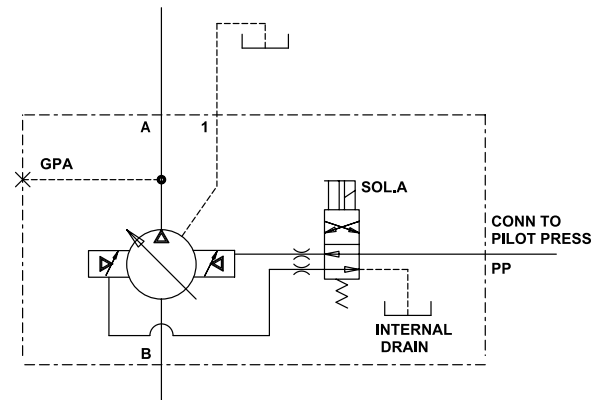
## REMOTE ELECTRONIC SERVO VALVE VR

A remote electrohydraulic servo valve can be used to position the control mechanism. Feed back from the integral LVDT can be used in an electronic closed-loop configuration to provide a highly accurate remote variable delivery control.



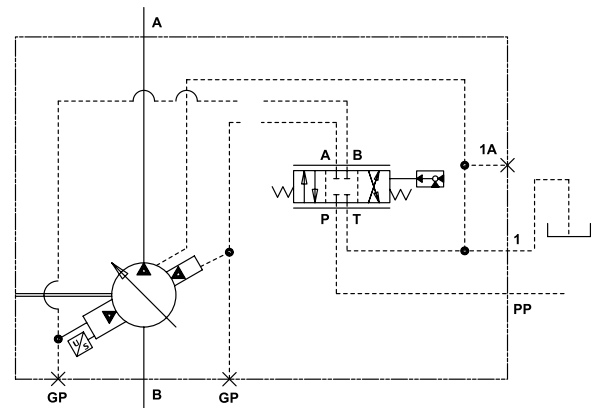
## SOLENOID OPERATED TWO VOLUMES RU

Two adjustable deliveries as selected by an integral solenoid operated valve.



## ELECTRONIC SERVO VALVE VM

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.



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

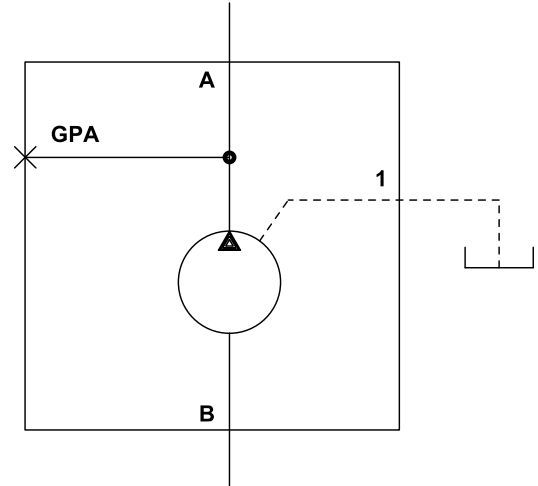
\*\* PVV-440 only available with F, VR, RU and VM controls.

# **PVV | PUMP CONTROLS\* - FIXED / FORCE AMPLIFIER\***

## **FIXED**

### **FIXED (SCREW ADJUSTABLE) F**

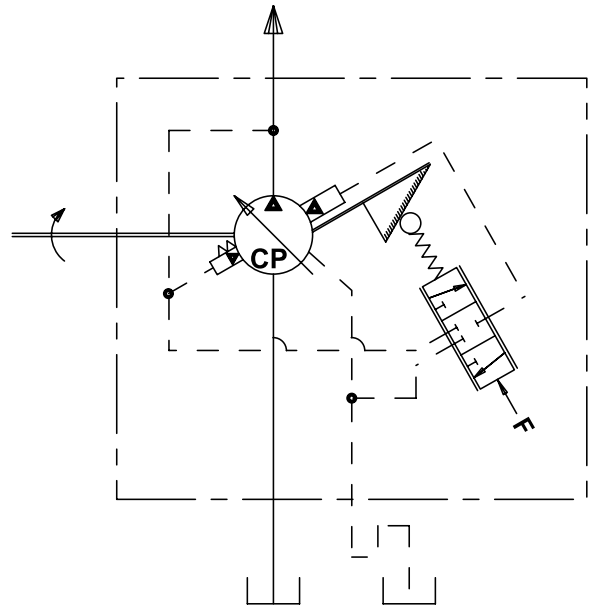
Two adjustable screws are used to “lock” (fix) pump delivery.



## **FORCE AMPLIFIER\***

### **PROPORTIONAL A**

Any 5 - 15 lb force (manual, or pilot pressure) can be applied to the stem of the amplifier valve to change the pump displacement. The control can be set up to allow either increase or decrease in stroke (delivery) with increase in force applied. For additional information on this control, varieties, use with modification horsepower limit, load sense, etc. please see Data Sheet 47428.



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

\*\* PVV-440 only available with F, VR, RU and VM controls.



## PVV | MULTIPLE PUMP COMBINATIONS

Two Oilgear “PVV” axial piston variable delivery pumps can be integrally coupled together and driven from a single shaft.

The PVV-200/-250 can be run at 150% input shaft torque with the front pump at full rated output and the rear pump at half rated output, or with the front pump at half rated output and the rear pump at full rated output (or any combination that equals 150% or less).

The PVV-540 can be run at 50% thru-shaft torque with the front pump at full rated output and the rear PVV-200/-250 pump also at full rated output. Pump deliveries can be combined for large volume circuits or deliveries can be used individually. See the following table and calculations for Allowable Thru-shaft Torque.

### How to calculate torque for each pump

$$T \text{ (in. lbs.)} = \frac{\text{Pressure (psi)} \times \text{Displacement (cu. in./rev.)}}{5.655} *$$

### Add the respective torques for each unit:

T1 = front pump torque required

T2 = second pump torque required

Tn = Additional pump or torque for any other driven device

\* Assumes 90% mechanical efficiency

**T2 + Tn Sum must be less than max rear pump drive shaft torque shown in table below:**

**T1 + T2 + Tn Sum must be less than max input shaft torque shown in table below:**

UNIT SIZE	MAX. INPUT SHAFT TORQUE (IN-LBS)	MAX REAR PUMP DRIVE SHAFT TORQUE (IN-LBS)
200 / 250	20,295	13,530
440	Thru shaft not available	---
540	43,770	14,590





Lined area for notes or calculations, consisting of 25 horizontal lines.

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