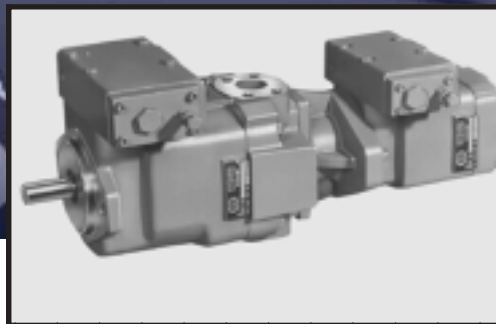
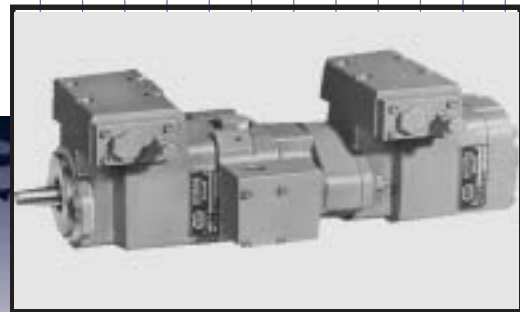


# Oilgear

PVWW

OPEN LOOP PUMPS

FOR FLUIDS CONTAINING WATER



# PERFORMANCE ASSURANCE IS STANDARD WITH EVERY OILGEAR COMPONENT

Every Oilgear pump manufactured is shipped with a corporate commitment to stay with the installation until it performs as specified.

This total dedication to performance is based upon experience gained since 1921 in matching fluid power system to a tremendous range of machines and applications.

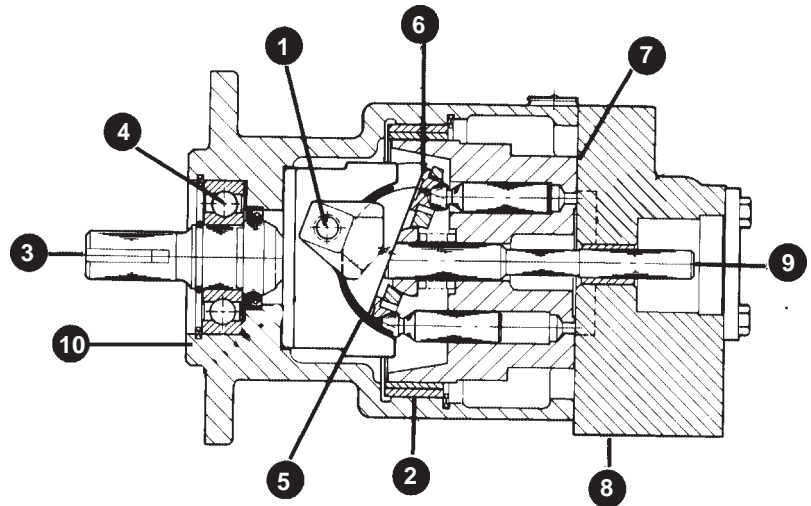
Oilgear's Performance Assurance is made possible because of the many hydraulic techniques learned over the years in supplying machinery builders and users with unique solutions to hundreds of unusual fluid power problems.

Historically, Oilgear has concentrated its energies on hydraulic equipment and systems. Every Oilgear facility is staffed with factory trained and field experienced application engineers. These men are backed by a head-quarters engineering staff who has access to the records and knowledge generated from these historically successful solutions.

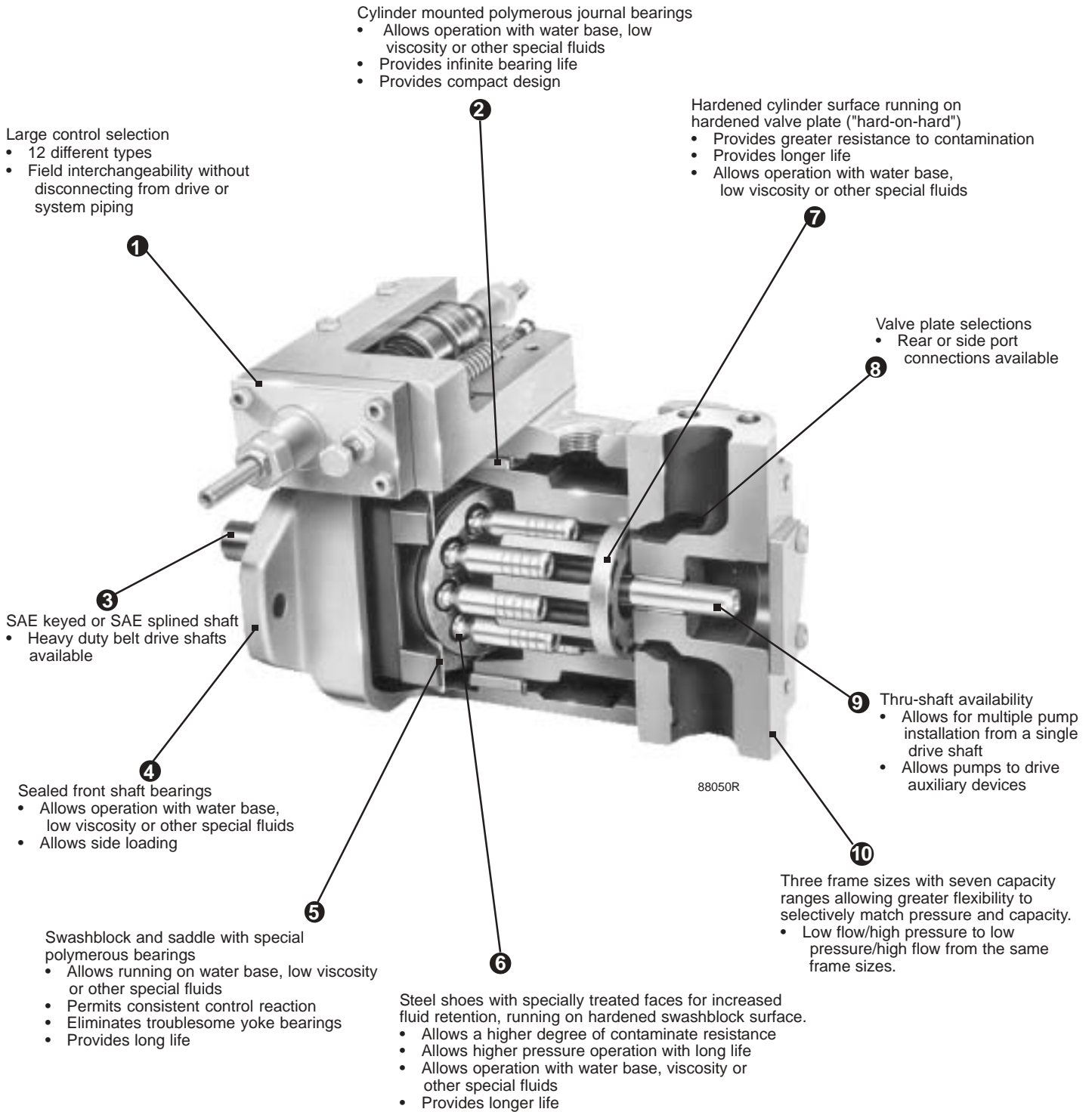
Performance Assurance doesn't stop with the design of the system or the sale of the component. It guarantees that Oilgear engineers will be there— when they are needed— supplying the education, field service, parts and repairs, to make sure each runs smoothly— and keeps on running.

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# PVWW OPEN LOOP PUMP



# SPECIFICATIONS

## 27—30 SSU VISCOSITY FLUID

FRAME SIZE	UNIT SIZE	MAXIMUM DISPLACEMENT		RATED CONTINUOUS PRESSURE		MAXIMUM PRESSURE		FLOW RATE at 1800 rpm, rated continuous pressure & 14,7 psia (1 bar <sub>abs</sub> ) inlet condition		MAXIMUM SPEED at 1800 rpm and 14,7 psia inlet condition	POWER INPUT at rated continuous pressure and 1800 rpm	
		in <sup>3</sup> /rev	ml/rev	psi	bar	psi	bar	gpm	l/min	rpm	hp	kw
<b>A</b>	06	0.86	14,1	3000	206,9	3500	241,4	5.5	20,8	1800	12.9	9,6
	10	1.35	22,1	2000	137,9	2500	172,5	9.0	34,1	1800	13.3	9,9
<b>B</b>	15	2.06	33,8	3000	206,9	3500	241,4	12.7	48,1	1800	30.4	22,7
	20	2.83	46,4	2000	137,9	2500	172,5	20.3	76,9	1800	27.8	20,7
<b>C</b>	34	4.67	76,5	3000	206,9	3500	241,4	32.6	123,6	1800	68.4	51,0
	45	6.00	98,3	2000	137,9	2500	172,5	42.8	162,2	1800	59.7	44,5
	60	7.94	130,2	1200	82,8	1500	103,4	56.5	214,2	1800	51.1	38,1

\*Higher pressure available— consult factory.

Note: Minimum speed 600 rpm.

For units to be run with conventional (oil) hydraulic fluids, please see Oilgear Bulletin 47014 (PVW Pumps) or Bulletin 47015 (PVWH Pumps).

# PUMP CONTROLS PRESSURE\*

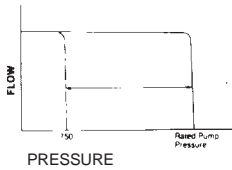
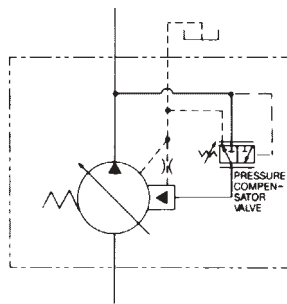
## Pressure Compensator

"CN"

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 750 psi working pressure up to the maximum pressure rating of applicable pump.

A remote control module "VSR" can be used to adjust the "CN" Control.



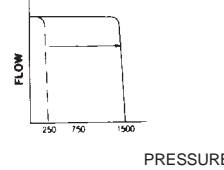
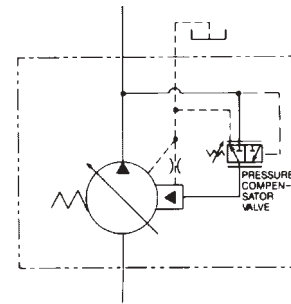
509820

## Low Pressure Compensator

"CL"

Works the same as the "CN" control except it provides a lower minimum pressure. Can be adjusted from 250 psi working pressure up to a maximum of 1500 psi.

A remote control module "VSR" can be used to adjust the "CL" Control.

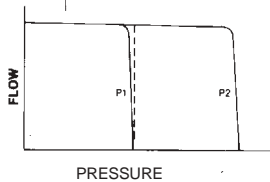
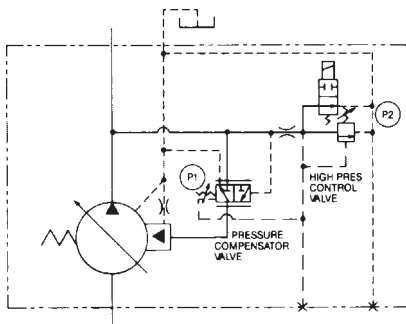


509820

## Dual Pressure Compensator

"C2"

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

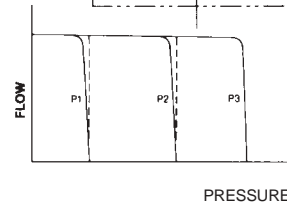
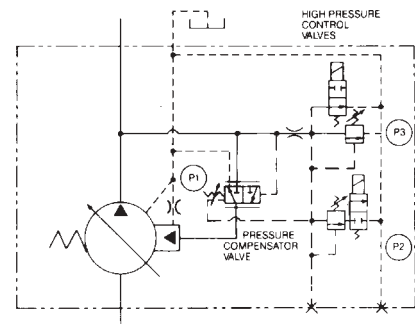


509819

## Triple Pressure Compensator

"C3"

Provides three independently adjustable pressure compensated deliveries as selected by integral solenoids.



509819

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

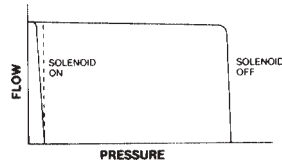
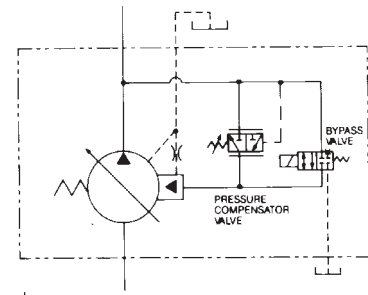
# PUMP CONTROLS

## PRESSURE \* (Cont'd)

### Soft Start Pressure Compensator

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

While a standard compensator adjuster is supplied, a remote control module "VSR" can also be used to adjust the "CU" control.



"CU"

E51316

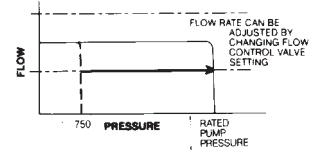
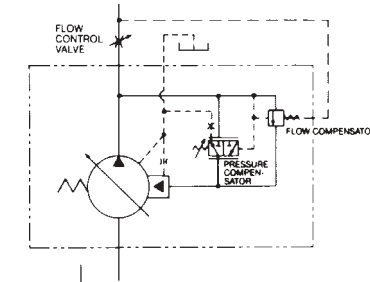
# VOLUME/PRESSURE

## SENSING\*

### Load Sensing

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

Remote control module "VSR" can also be used to adjust the pressure compensator action of "CF" controlled pumps.



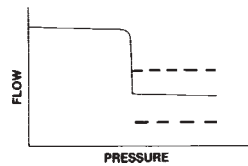
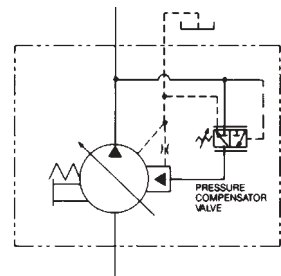
"CF"

509816

### High-Low Pressure Compensator

Ensures maximum pump flow until unit reaches preset control pressure setting, then partially de-strokes the pump to provide a minimum variable adjustment preset flow rate regardless of system pressure.

Remote control module "VSR" can also be used to adjust the pressure compensator action of "CH" controlled pumps

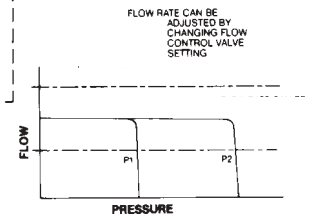
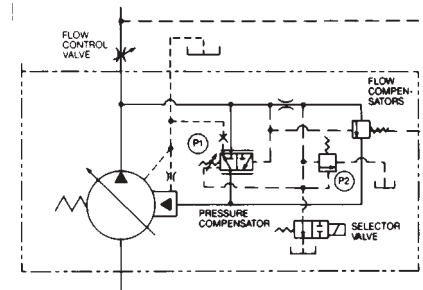


"CH"

E51340

### Dual Pressure Compensator with Load Sensing

Maintains a constant flow rate at up to either of two independent adjustable pressures as selected by an integral solenoid.



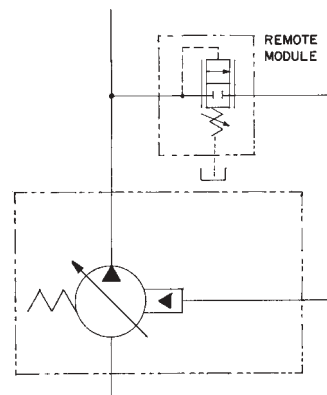
"2F"

E51215

### Remote Operator

Remote control module to adjust "CF", "CH", "CL", "CN", and "CU" controlled pumps. When system pressure reaches the setting of the remote control module, the control then regulates output to match the requirements of the system while maintaining preset output pressure.

"VSR"



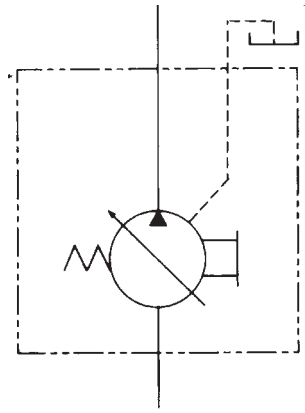
\*Be sure system and pumps are protected against overloads with a high pressure relief valve.

# VOLUME\*

## Handwheel

Provides simple manual handwheel adjustment of delivery.

"HN"

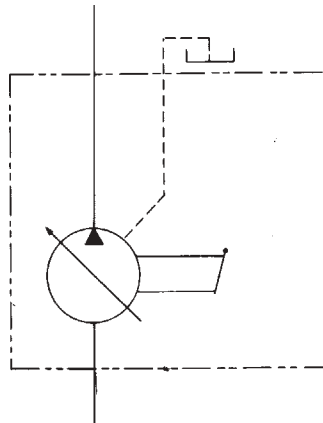


509815

## Lever Operated

Varies displacement proportional to the rotation of a pintle.

"MN"



509818

## Fixed Displacement

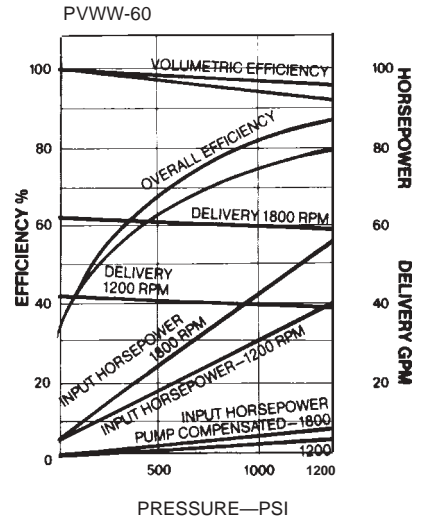
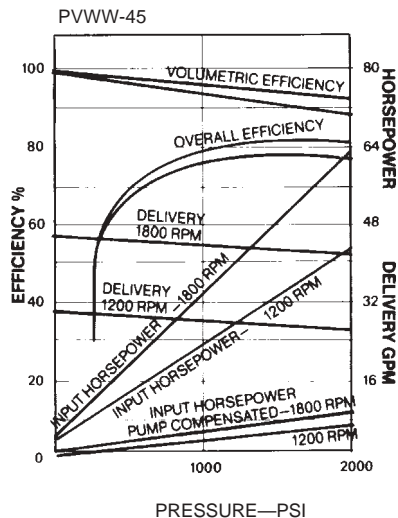
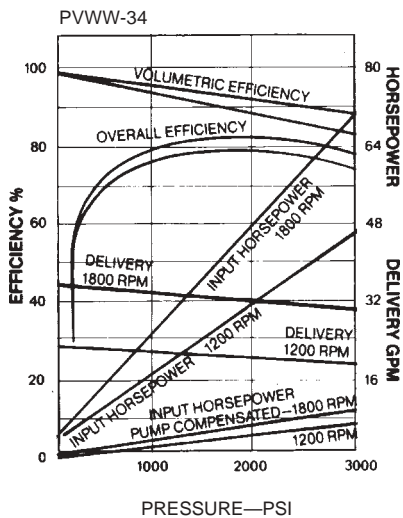
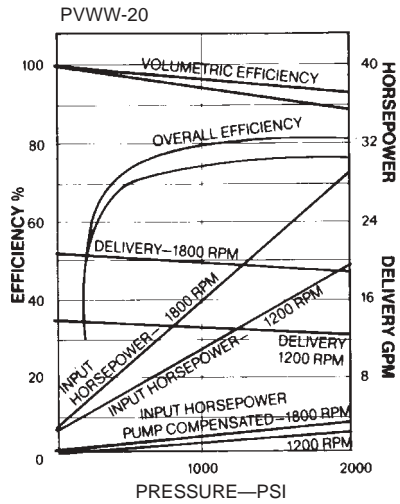
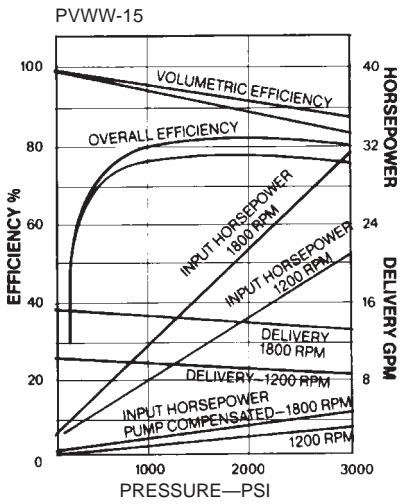
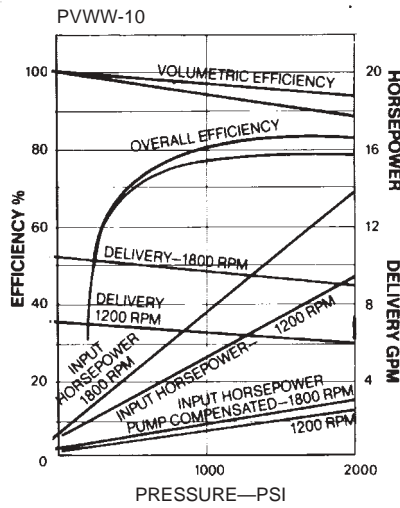
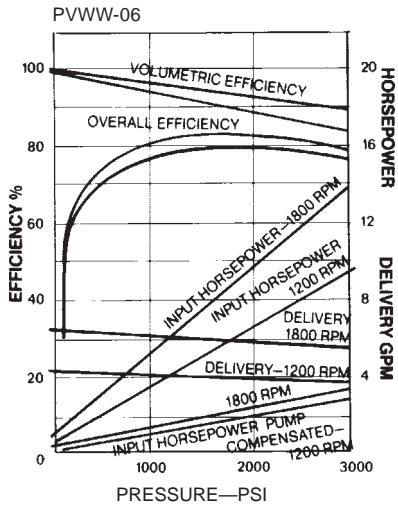
"NN"



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

# PERFORMANCE CURVES

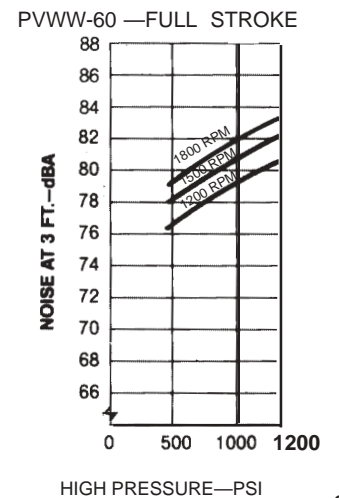
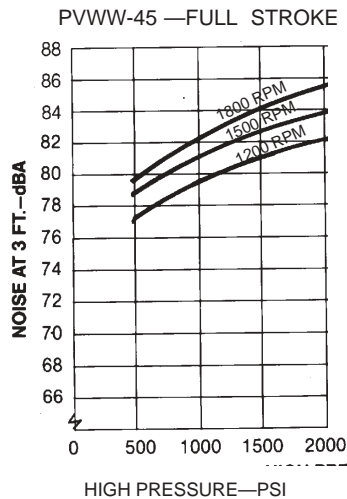
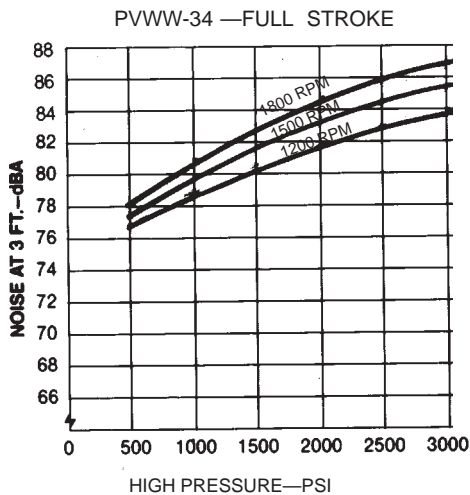
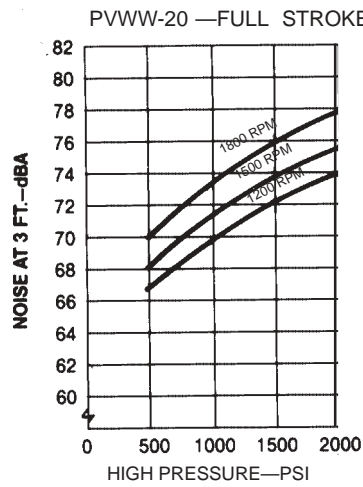
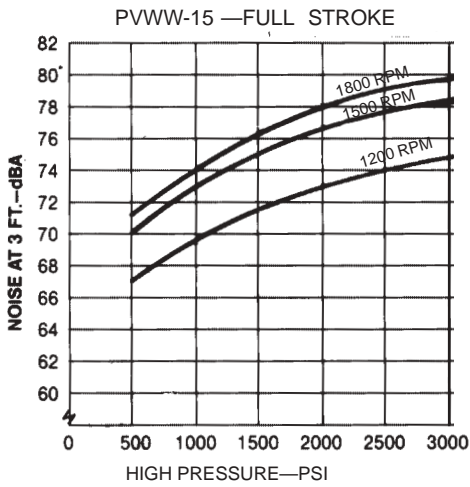
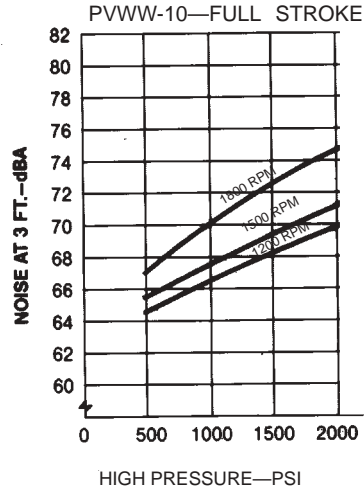
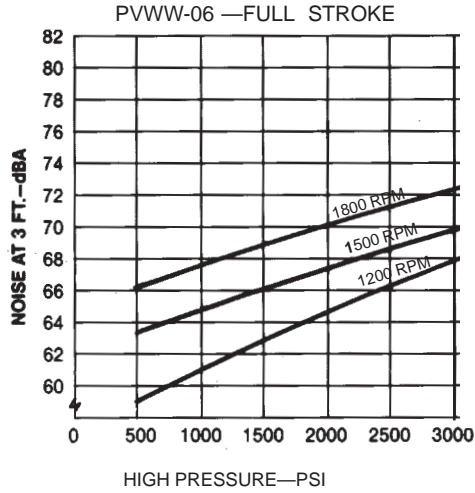
The following single pump curves are based on a fluid temperature of 95°F (27 SSU) and flooded inlet.





# SOUND CURVES

All of the following sound curves are based on pump delivering full volume from port "A". Single microphone noise taken in semi-reverberant room at three feet from pump surface. Tolerance on curves is +3 dBA.



# MULTIPLE PUMPS

## PUMP COMBINATIONS

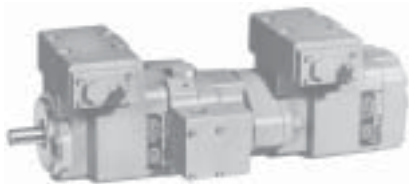
Two or more Oilgear axial piston variable delivery pumps can be integrally coupled together and driven from a single shaft.

Pump deliveries can be combined for large volume circuits or deliveries can be used individually. See page 4 for individual pump ratings.

The front pump can be used at full rated output while the rear pumps are governed by the thru shaft torque listed in the table, on page 11.

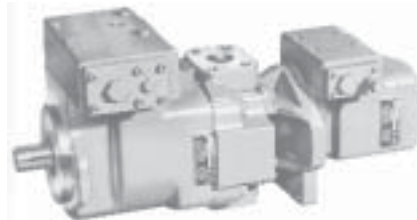


89031



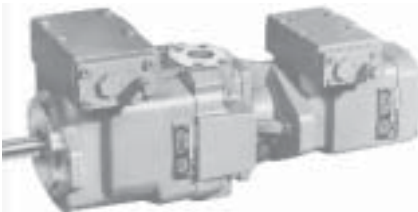
Front pump frame size A  
with second pump frame size A

55269



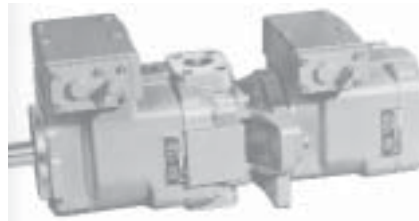
Front pump frame size C with  
second pump frame size A

55275



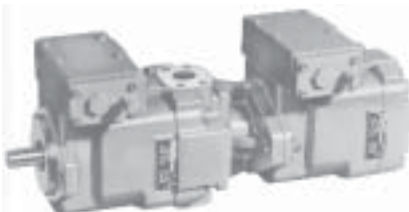
Front pump frame size B with  
second pump frame size A

55271



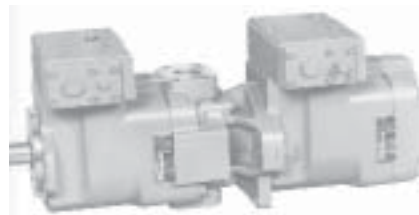
Front pump frame size C with  
second pump frame size B

55277



Front pump frame size B with  
second pump frame size B

55273



Front pump frame size C with  
second pump frame size C

55279

## THRU SHAFT SIZING/COMPATIBILITY

PISTON PUMP FRAME SIZE	INPUT TORQUE									ALLOWABLE THRU SHAFT TORQUE	
	PUMP SIZE	RATED PRESSURE		INPUT TORQUE (T <sub>p</sub> ) @ RATED PRESSURE		PEAK PRESSURE		INPUT TORQUE @ PEAK PRESSURE		STANDARD SHAFT	
		psi	bar	in-lb.	Nm.	psi	bar	in-lb.	Nm.	in-lb.	Nm.
<b>A</b>	06	3000	206,9	452	50,9	3500	241,4	527	59,3	200	22,5
	10	2000	137,9	466	52,5	2500	172,5	588	66,2		
<b>B</b>	15	3000	206,9	1063	119,7	3500	241,4	1244	140,0	500	56,3
	20	2000	137,9	973	109,5	2500	172,5	1215	136,8		
<b>C</b>	34	3000	206,9	2395	269,6	3500	241,4	2795	314,7	900	101,4
	45	2000	137,9	2100	236,4	2500	172,5	2600	292,7		
	60	1200	82,8	1722	193,9	1500	103,4	2125	239,2		

ACTUAL INPUT TORQUE CALCULATION  

$$T_A = T_R \times \frac{\text{ACTUAL OPERATING PRESSURE} \times \% \text{ FULL DELIVERY}}{\text{RATED PRESSURE} \quad 100\%}$$

NOTE: When applying a thru shaft driven Oilgear pump or a thru shaft driven pump from other manufacturers, it must be determined that its actual input torque does not exceed the allowable thru shaft torque given in the table above. Use the formula given to determine actual input torque if the pump is applied at other than rated values.

NOTE: If more than one pump is to be thru shaft driven, their combined actual input torques must not exceed the above values if their highest loads are experienced simultaneously.

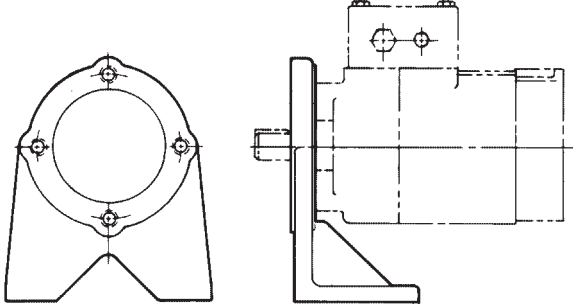
# MOUNTING BRACKETS FOR PVWW PUMPS

Piston Pump Frame Size

---

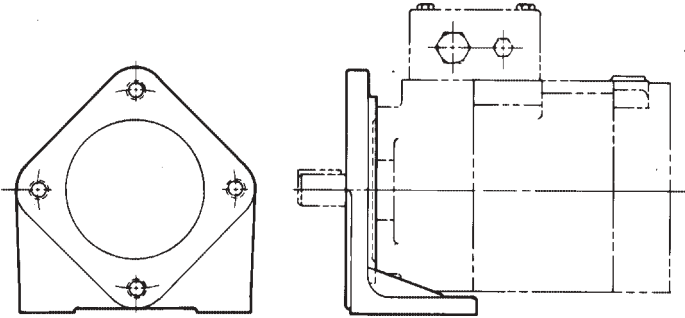
**A**

06, 10



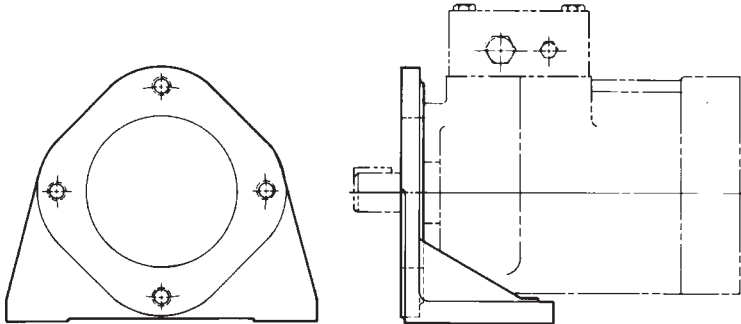
**B**

15, 20



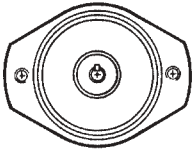
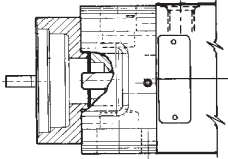
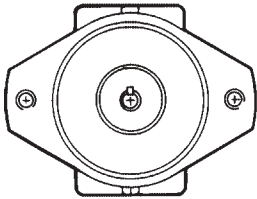
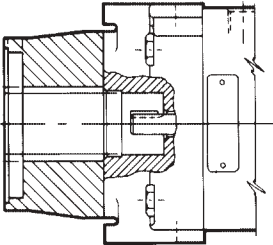
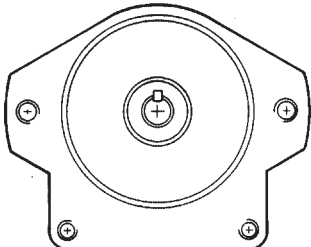
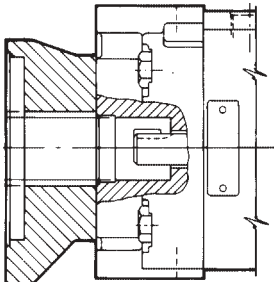
**C**

34, 45, 60



# SAE ADAPTERS FOR PVWW PUMPS

Installation adapters for single pumps with thru shaft and side ports. (E60240)

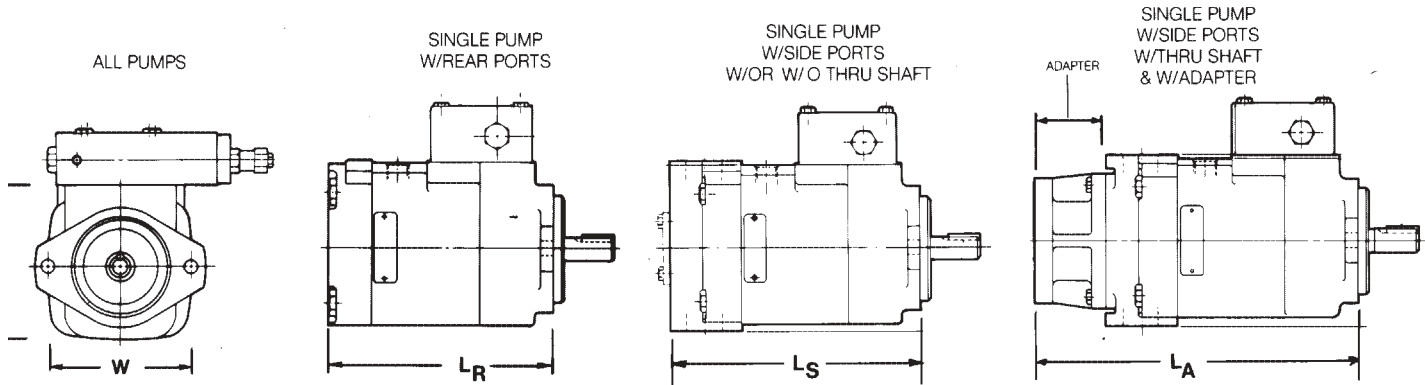
Piston Pump Frame Size	For Mounting The Following	To Piston Pump Size	Order Code No.		
<b>A</b>			06, 10 Piston Pump	06, 10	AA
<b>B</b>			06, 10 Piston Pump	15, 20	AA
			15, 20 Piston Pump	15, 20	AB
<b>C</b>			06, 10 Piston Pump	34, 45, 60	AA
			15, 20 Piston Pump	34, 45, 60	AB
			34, 45, 60 Piston Pump	34, 45, 60	AC

(E60203)

Contact your Oilgear Representative for detailed dimensions.

# SIZE AND WEIGHTS

## SINGLE PUMPS



### DIMENSIONS AND WEIGHTS

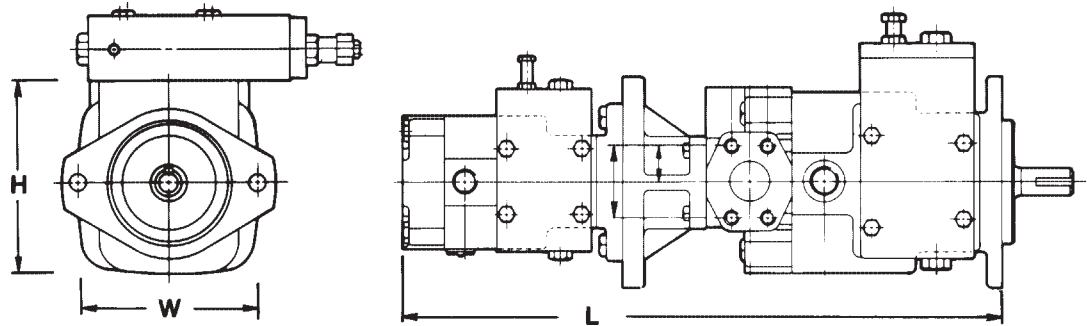
FRAME SIZE	PVWW PUMP SIZE	HEIGHT		WIDTH		LENGTH						WEIGHT	
		H		W		L <sub>R</sub>		L <sub>S</sub>		L <sub>A</sub>		SINGLE PUMP W/REAR PORTS	
		inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	lb	kg
<b>A</b>	06 & 10	4.50	114,3	4.32	109,7	7.20	182,9	8.07	205,0	9.39	238,5	32	14,5
<b>B</b>	15 & 20	6.11	155,2	5.80	147,3	8.50	215,9	9.63	244,6	12.36	313,9	68	30,9
<b>C</b>	34, 45 & 60	7.18	182,4	6.76	171,7	10.44	265,2	11.50	292,1	14.00	355,6	103	46,8

All dimensions are approximate, for detailed dimensions contact your Oilgear Representative.

Length Example  
SINGLE PUMP  
\*With rear ports.  
PVWW-15-RSAY-CNN  
Size 15 (L<sub>R</sub>) length = 8.50 inches (215,9 mm)

\*With side ports, w/wo thru shaft  
PVWW-15-RDFY-CNNNTK  
Size 15 (L<sub>S</sub>) length = 9.63 inches (244,6 mm)  
\*With side ports, with thru shaft and adapter  
PVWW-15-RDFY-CNNNTK-AG  
Size 15 (L<sub>A</sub>) length = 12.36 inches (313,9 mm)

# MULTIPLE PUMPS



## DIMENSIONS AND WEIGHTS

FRAME SIZE	PVWW DUAL PUMP SIZES	W WIDTH		L LENGTH		H HEIGHT		WEIGHT	
		inch	mm	inch	mm	inch	mm	lb.	kg
<b>A/A</b> <b>B/A</b>	06 or 10 & 06 or 10	4-1/4	107	16 - 5/8	422	4-1/4	113	72	33
	15 or 20 & 06 or 10	5-3/4	146	19 - 1/2	495	6	155	108	49
<b>B/B</b> <b>C/A</b>	15 or 20 & 15 or 20	5-3/4	146	21	533	6	155	144	66
	34, 45 or 60 & 06 or 10	7-1/8	181	21-1/4	539	7-1/4	184	143	65
<b>C/B</b> <b>C/C</b>	34, 45 or 60 & 15 or 20	7-1/8	181	22 - 1/2	572	7-1/4	182	179	82
	34, 45 or 60 & 34, 45 or 60	7-1/8	181	24 - 1/2	622	7-1/4	182	214	97

All dimensions are approximate, for detailed dimensions of these or other multiple combinations including other types of auxiliary pumps, contact your Oilgear Representative.

Length Example:

### DUAL PUMP

Two variable delivery pumps

PVWW-45-LDFS-CHSNTK-/PVWW-20-LSAY-CNSNNN

Size 45 pump ( $L_A$ ) length = 14 inches (355,6 mm) plus

Size 20 pump ( $L_R$ ) length = 8.50 inches (215,9 mm) =  
22.50 inches (571,5 mm)

### Three variable delivery pumps

PVWW-45-LDFS-CNSNTK-/PVWW-20-LDFY-CF

SNTK-/PVWW-10-LDAY-MNSNNN-CP

Size 45 pump ( $L_A$ ) length = 14.00 inches (355,6 mm) plus

Size 20 pump ( $L_A$ ) length = 12.36 inches (313,9 mm) plus

Size 10 pump ( $L_R$ ) length = 7.20 inches (182,9 mm) =  
33.56 inches (857,4 mm)

# HOW TO ORDER

BLOCK NUMBER EXPLANATION	1	2	3		4		5	6	7		8	9	10		11
TRIPLE PUMP EXAMPLE	P	V	WW	—	45	—	L	DF	S	—	CN	SN	TK	—	/
DUAL PUMP EXAMPLE	P	V	WW	—	45	—	L	DF	S	—	CN	SN	TK	—	/
SINGLE PUMP W/THRU-SHAFT EXAMPLE	P	V	WW	—	34	—	R	DF	S	—	CN	NN	TK	—	AT
SINGLE PUMP WITH SIDE PORTS EXAMPLE	P	V	WW	—	10	—	L	DA	Y	—	CN	SN	TK	—	CP
SINGLE PUMP WITH REAR PORTS EXAMPLE	P	V	WW	—	06	—	L	SA	Y	—	CN	SN	NN		

**1** = UNIT  
P = Pump

**2** = TYPE  
F = Fixed  
V = Variable

**3** = DESIGN SERIES  
WW = Water Base Series

**4** = SIZE (1800 rpm)  
06 = 6 gpm  
10 = 10 gpm  
15 = 15 gpm  
20 = 20 gpm  
34 = 34 gpm  
45 = 45 gpm  
60 = 60 gpm

**5** = ROTATION (from shaft end)  
L = Left Hand (CCW)  
R = Right Hand (CW)

**6** = PORT TYPE & LOCATIONS  
DA = Side Location w/SAE St.  
Thread Ports (for sizes 06, 10)

DF = Side Location w/SAE Flanged  
Ports (for sizes 15, 20, 34,  
45, 60)

SA = Rear Location w/SAE  
St. Thread for sizes 06, 10,  
15, 20; w/SAE St. Thread  
(Pressure Port) & w/SAE Flanged  
(Suction Port) for sizes 34, 45 & 60.  
Rear Ports can not be used with  
thru-shaft (multiple) units.

DR = Flanged/Top & bottom with  
relief valve (for sizes 15, 20, 34  
& 45). See Bulletin RV-1 for  
dimensions.

GA = Side Location w/SAE St.  
Thread Ports (for non-thru  
shafted size 06 & 10)

TA = Side Location w/SAE  
St. Thread Ports (for  
thru shafted size 06 & 10).

**7** = INPUT SHAFT END  
Y = Keyed (SAE)  
S = Splined (SAE), Mobile  
D = Splined (SAE), Industrial  
B = Keyed (belt driven,  
size 06 thru 20)  
C = Splined (belt driven,  
size 06 thru 20)

**8** = CONTROL TYPES  
Pressure

\*CN = Pressure Compensator  
\*CL = Low Pressure Compensator  
C2 = Dual Pressure Compensator  
C3 = Triple Pressure Compensator  
\*CU = Soft Start Pressure  
Compensator  
\*CH = High-Low Pressure  
Compensator

Volume/Pressure Sensing

\*CF = Load Sensing  
2F = Dual Pressure Compensator  
with Load Sensing

Volume

HN = Handwheel  
MN = Lever Operator  
NN = Fixed Displacement

**9** = VOLUME STOPS

SA = Minimum Volume Stop  
(not available with CU,  
CF, 2F or HN controls)

SB = Minimum & Maximum  
Volume Stop (not available  
with CU, HP, CF or 2F  
controls)

SN = Maximum Volume Stop  
(Not available with CU, CH,  
CF, 2F or HF controls)

NN = No stops



1	2	3		4		5	6	7		8	9	10		11	1	2	3		4		5	6	7		8	9	10		11
P	V	WW	—	20	—	L	DF	Y	—	C2	SN	TK	—	/	P	V	WW	—	10	—	L	DA	Y	—	CH	SN	TK	—	CP
P	V	WW	—	10	—	L	DA	Y	—	C2	SN	TK	—	CP															

- 10** = THRU SHAFT TYPE  
 NN = None (Single units w/rear ports only)  
 TK = Mounting for Key or Tang Driven Auxiliary Devices (not available for 06/10 sizes)  
 TH = Mounting for Spline Driven Auxiliary w/high strength shaft  
 Note: when using high strength shaft "TH", splined input shaft must be ordered.

- 11** = COUPLING and ADAPTERS  
 (Optional when not ordering multiple pump)  
 AA = For mounting PVWW-06, 10 (SAE A 2-bolt)  
 AB = For mounting PVWW-15, 20 (SAE B 2-bolt)  
 AC = For mounting PVWW-34, 45, 60 (SAE C 2-bolt)  
 CP = Cover plate  
 VA = For mounting PVWW-06 or 10 (SAE A 2-bolt) to "TH" shaft  
 VB = For mounting PVWW-15, or 20 (SAE B 2-bolt) to "TH" shaft  
 VC = For mounting PVWW-34, 45 or 60 (SAE C 2-bolt) to "TH" shaft

\* FOR REMOTE CONTROL ADJUSTMENT (optional)  
 Order line mounted sequence valve as a separate item.  
 For additional information on this module, see DS-82318.

# Oilgear

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