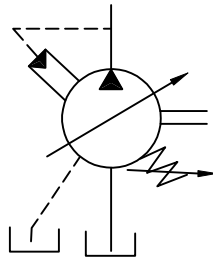
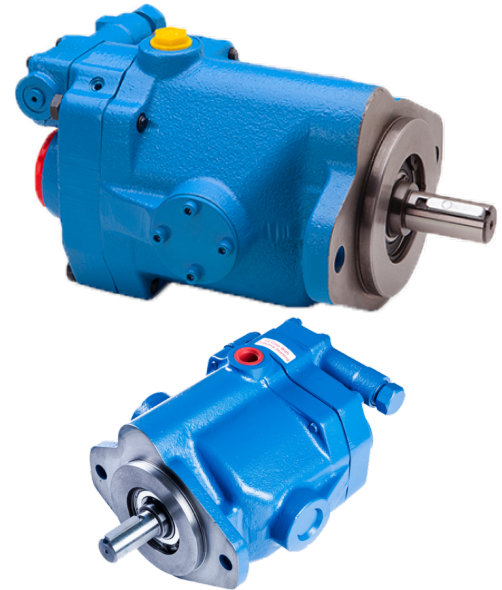


# VARIABLE DISPLACEMENT PVB5/PVB45 PISTON PUMPS

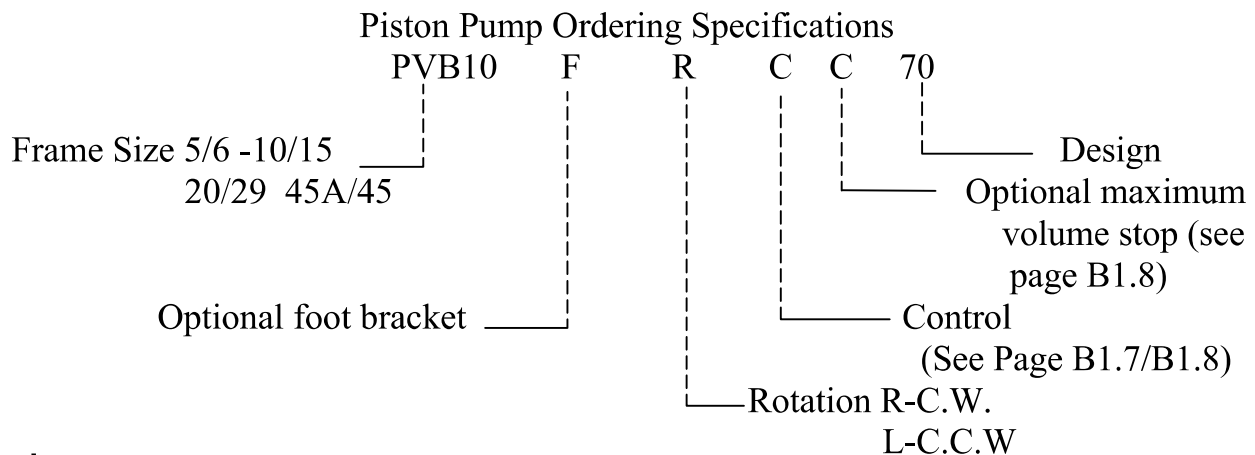


piston pumps are inline, variable volume units available in 4 frame sizes and 8 displacements. The wide variety of controls and overall efficiency make them ideal for the most demanding industrial applications.



## Features

- **ECONOMICAL**  
PVB series combine quality performance with low overall cost.
- **QUIET**  
Noise levels are below the industry standards.
- **EFFICIENT**  
High volumetric and overall efficiency for industrial applications.
- **CONTROLS**  
Variety of manual and compensating controls provide fast stable control of units.
- **MOUNTING**  
Mountings, shafts and port sizes are SAE standard. Metric units available on request.



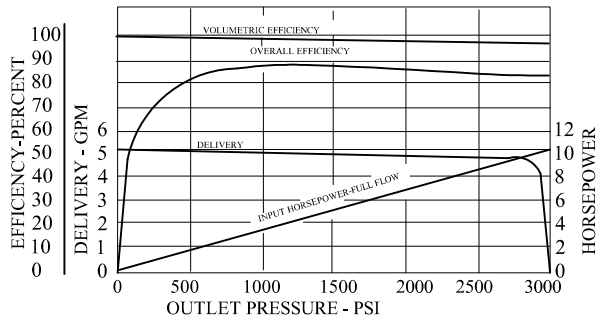
## Warning

Before starting fill pump case with system fluid through uppermost drain port. Housing must be kept full at all times to provide internal lubrication.

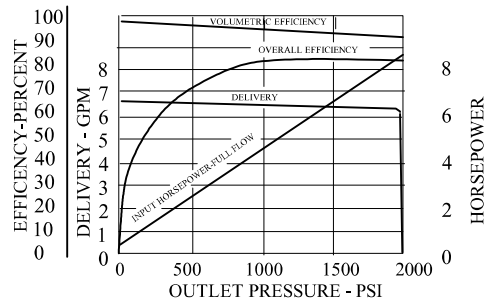
# PVB PISTON PUMP PERFORMANCE CURVES



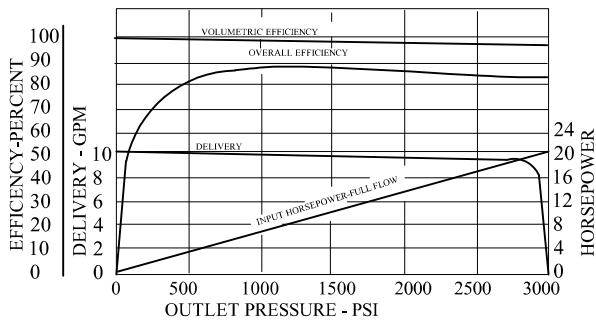
MODEL PVB5  
BASED ON OIL TEMPERATURE OF 120° F  
(100 SUS)  
1800 RPM INPUT-ATMOSPHERIC INLET



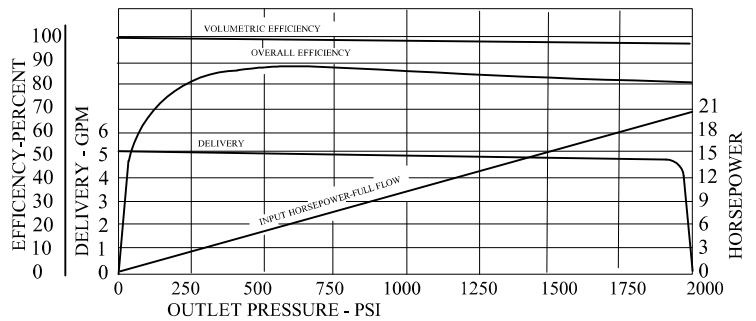
MODEL PVB6  
BASED ON OIL TEMPERATURE OF 120° F  
(100 SUS)  
1800 RPM INPUT-ATMOSPHERIC INLET



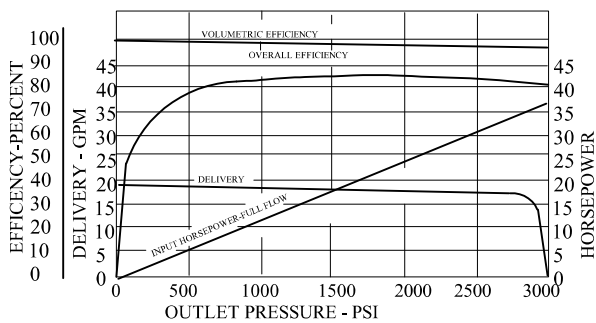
MODEL PVB10  
BASED ON OIL TEMPERATURE OF 120° F  
(100 SUS)  
1800 RPM INPUT-ATMOSPHERIC INLET



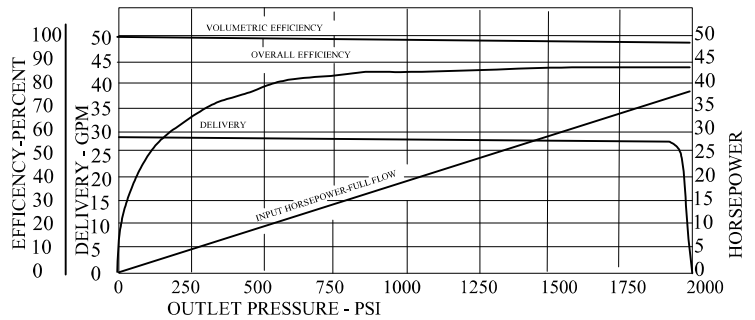
MODEL PVB15  
BASED ON OIL TEMPERATURE OF 120° F  
(100 SUS)  
1800 RPM INPUT-ATMOSPHERIC INLET



MODEL PVB20  
BASED ON OIL TEMPERATURE OF 120° F  
(100 SUS)  
1800 RPM INPUT-ATMOSPHERIC INLET



MODEL PVB29  
BASED ON OIL TEMPERATURE OF 120° F  
(100 SUS)  
1800 RPM INPUT-ATMOSPHERIC INLET



# VARIABLE DISPLACEMENT PVB5...PVB45 PISTON PUMPS



## APPLICATION GUIDELINES

### SHAFT ALIGNMENT

PVB units are designed for "inline drive" with a flexible coupling. Side loading the shaft is not recommended.

### FILL PUMP CASING

Before starting, fill case with system fluid through upper most drain port. Pipework must be installed in such a way as to ensure that the case is always full of oil during operation.

Note: -Max. case pressure 5 PSI.

### STARTING

During initial starting it may be necessary to bleed air from pump outlet. IFP air bleed valve ABT 02S is available for this purpose.

### SYSTEM RELIEF VALVE

Although PVB series pumps have compensator controls, a system relief valve is recommended for safety considerations.

## TECHNICAL DATA

Values based on using anti-wear type petroleum oil 150 SUS at 100° F and 0 PSI inlet pressure

MODEL	DISPL.	DELIVERY (GPM) AT		MAX. SPEED RPM		MAX. PRESSURE PSI		WGT. LBS.
		1800 RPM	MAX. RPM	Anti-wear oil	HWBF	Anti-wear oil	HWBF	
PVB5	.643	5	10	3600	1800	3000	1000	16
PVB6	.843	6.5	11.4	3200		2000		16
PVB10	1.29	10	18	3200		3000		30
PVB15	2.01	15	26.2	3000		2000		30
PVB20	2.61	20	26	2400		3000		57
PVB29	3.76	29	38	2400		2000		57
PVB45	5.76	45	55	2200		3000		210

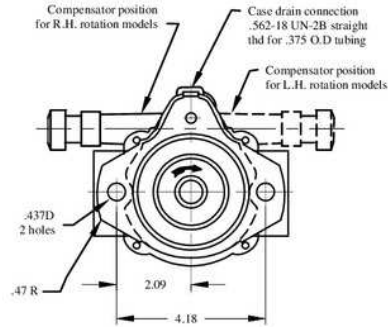
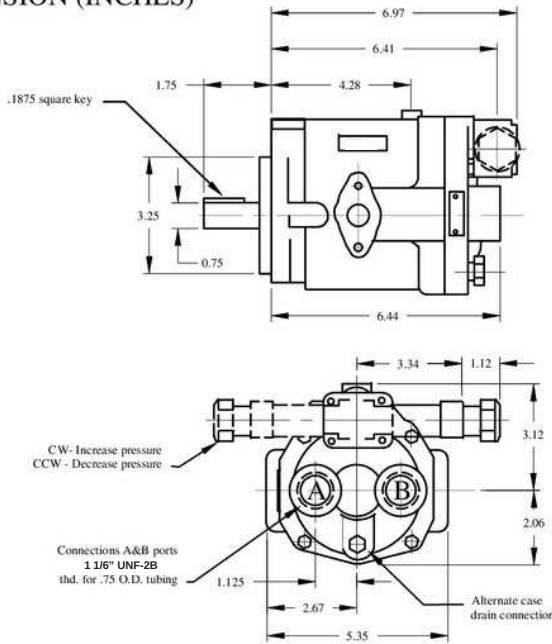
### SOUND LEVEL PER ISO 4412

MODEL	REV r/min	OUTLET PSI	NOISE dB(A)	
			CUT-OFF	FULL DISPL.
PVB5/6	1200	1000	56	59
		2000	59	61
		3000	62	
	1800	1000	57	62
		2000	62	63
		3000	64	
PVB10/15	1200	1000	57	57
		2000	62	62
		3000	64	
	1800	1000	62	62
		2000	65	69
		3000	68	
PVB20/29	1200	1000	58	77
		2000	62	77
		3000	65	
	1800	1000	63	64
		2000	68	69
		3000	71	

# PVB5/6 INSTALLATION DIMENSIONS



DIMENSION (INCHES)

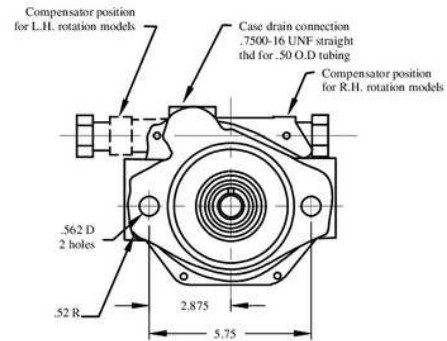
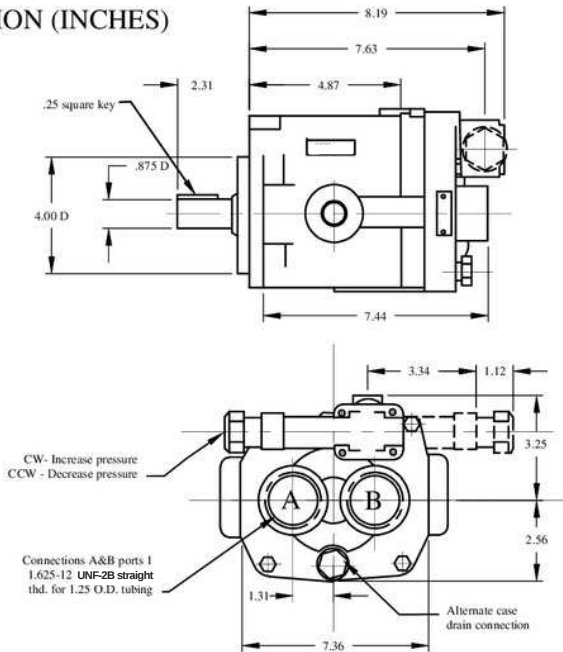


Rotation	Oil port	
	Inlet	Outlet
R.H	A	B
L.H	B	A

Bracket mount available  
Part NBR- IFB-A  
(See Page J1.1)

# PVB 10/15 INSTALATION DIMENSIONS

DIMENSION (INCHES)



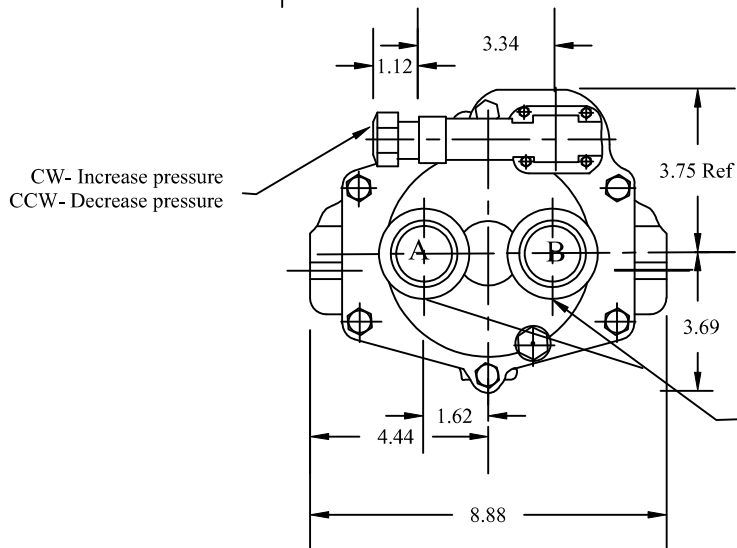
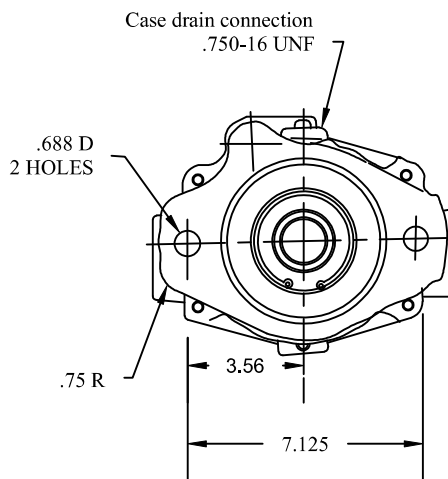
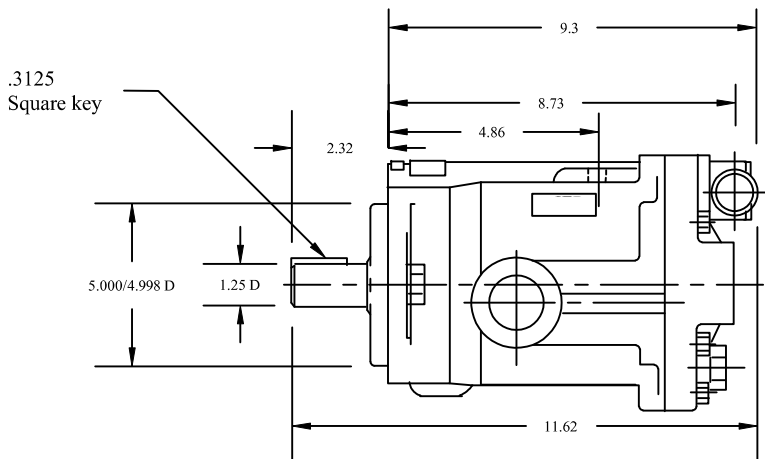
Rotation	Oil port	
	Inlet	Outlet
R.H	A	B
L.H	B	A

Bracket mount available  
Part NBR- IFB-B  
(See Page J1.1)

# PVB20/29 INSTALLATION DIMENSIONS



## DIMENSION(INCHES)



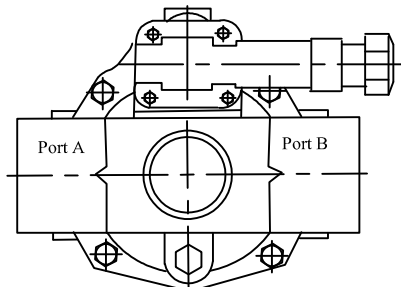
Rotation	Oil port Inlet/Outlet
R.H	A B
L.H	B A

Bracket mount available  
Part NBR- IFB-C  
(See Page J1.1)

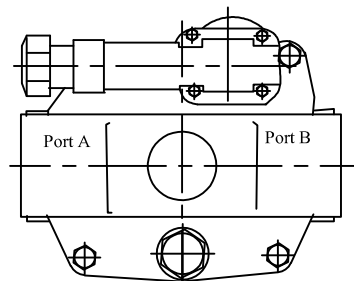
CONNECTION A&B  
1.625-12N SAE "O" RING  
1.25 "O" D TUBING

## SIDE PORT OPTION

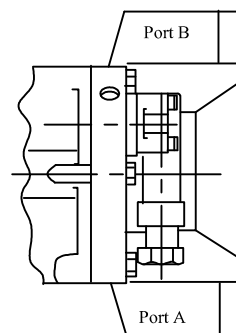
	Connection A & B
PVB5/6	1" O.D Tubing /1.312-12UNF
PVB10/15	1 1/4" O.D Tubing /1.625-16UNF
PVB20/29	1 1/2" SAE 4 Bolt Flange



**PVB5/6**



**PVB10/15**

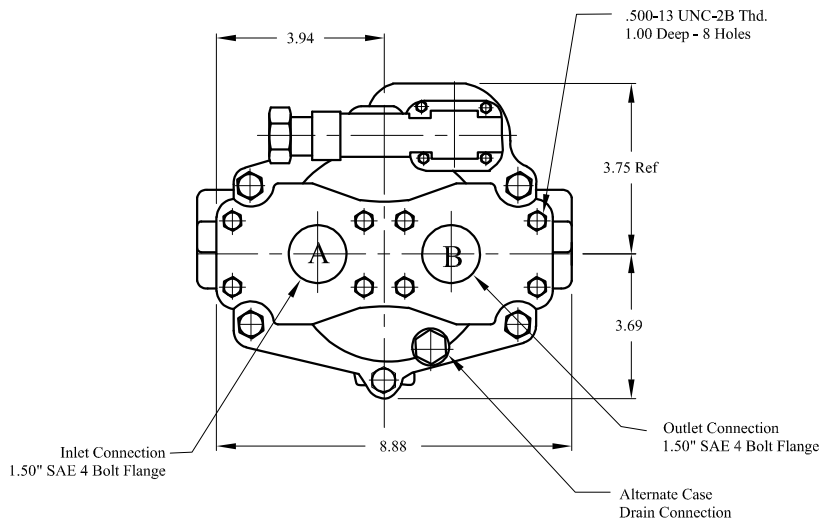
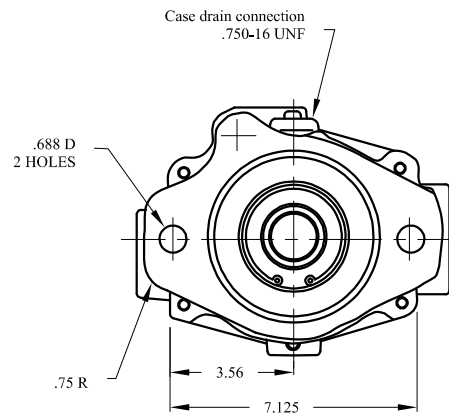
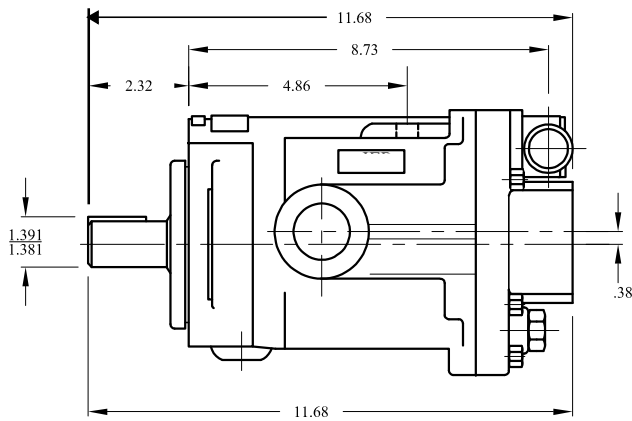


**PVB20/29**

# PVB 45A INSTALLATION DIMENSIONS



DIMENSION (INCHES)

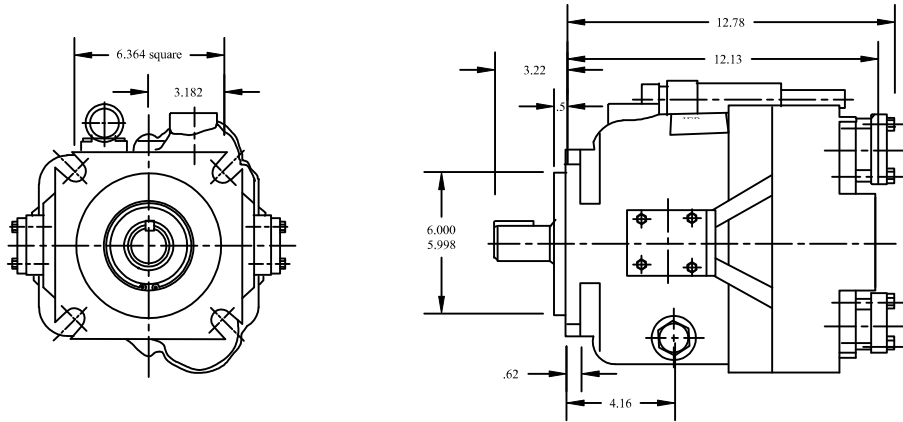


Bracket mount available  
Part NBR- IFB-C  
(See Page J1.1)

# PVB45 INSTALLATION DIMENSIONS

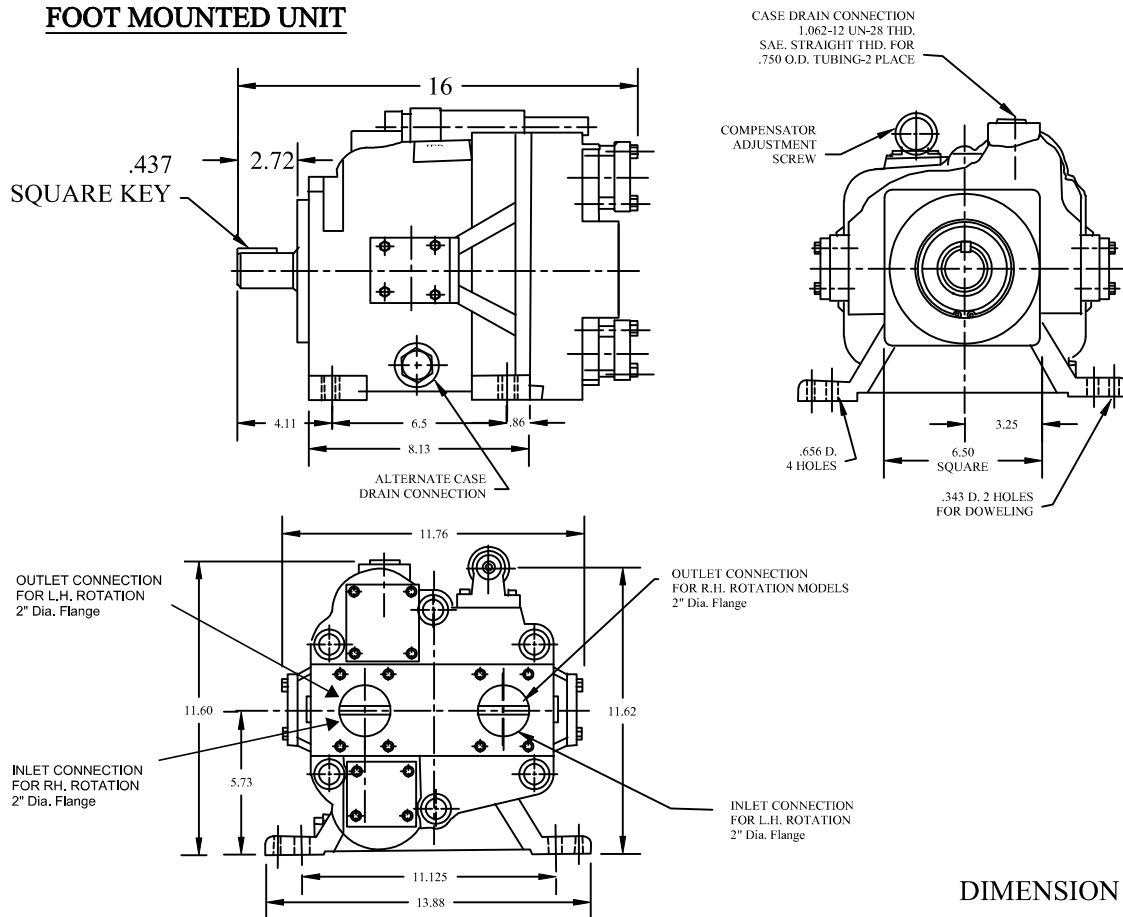


## FLANGE MOUNTED UNIT



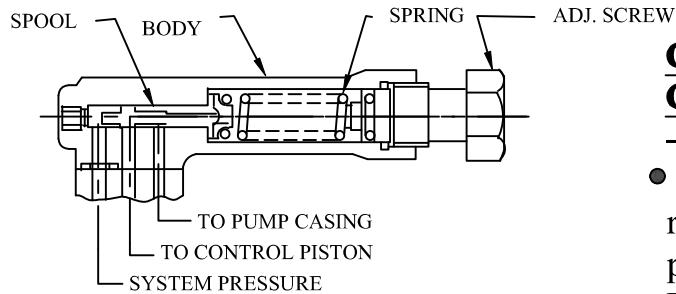
DIMENSION (INCHES)

## FOOT MOUNTED UNIT



DIMENSION (INCHES)

# OPTIONAL CONTROLS



## **Control "CM" (942159)**

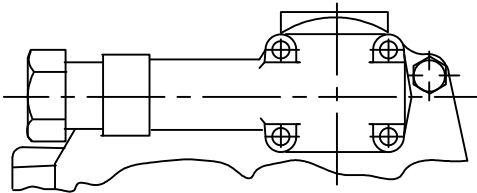
### **Control "C" (942158)**

- Pressure compensator-

- "C" control maintains pump volume requirements of the system until a preselected operating pressure is reached. Pump displacement is then reduced to zero

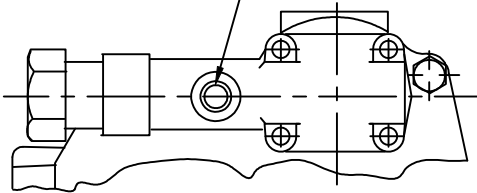
"CM" range 250 - 1500 PSI

"C" range 250 - 3000 PSI



Available in frame sizes PVB5 to PVB45

.4375-20 UNF-2B thd.  
remote control port

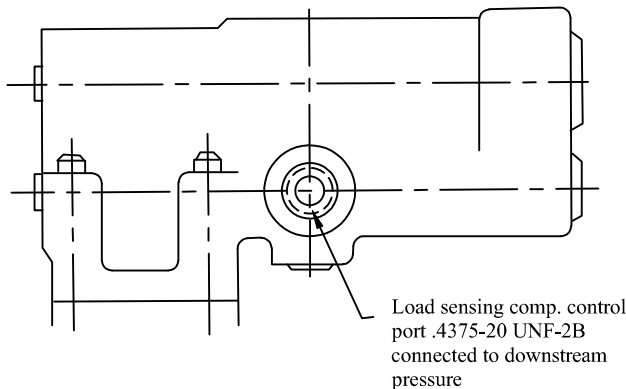


## **Control "CG" (942480)**

- Remote pressure compensator-

- "CG" control operates same as "C" control except pressure setting can be adjusted using a remote relief valve (**C175-\*-70**) connected to the remote control port (SEE Page I1.1-I1.2).

Available in frame sizes PVB5 to PVB29



## **Control "CVP" (924069)**

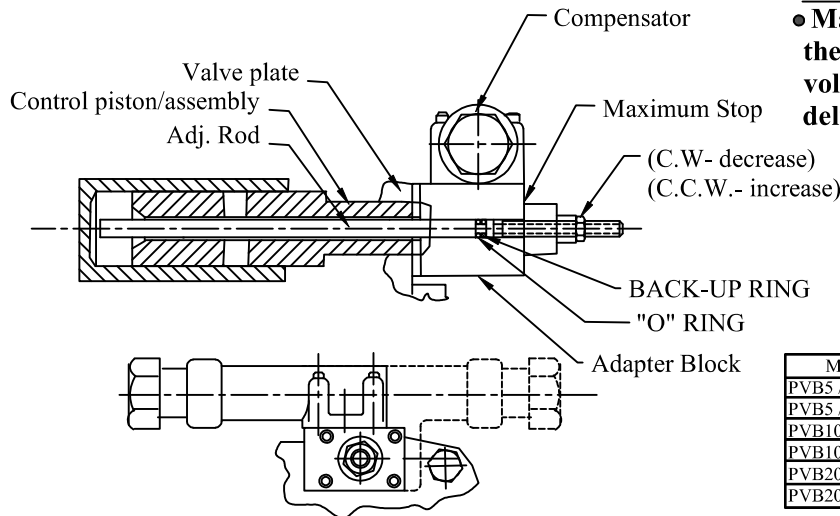
- Load sensing/pressure limiter-

- "CVP" compensator provides load sensing control to automatically adjust pump flow in response to a remote pressure signal. A compensator control is also incorporated to limit maximum working pressure.

Available in frame sizes PVB5 to PVB29



# OPTIONAL CONTROLS

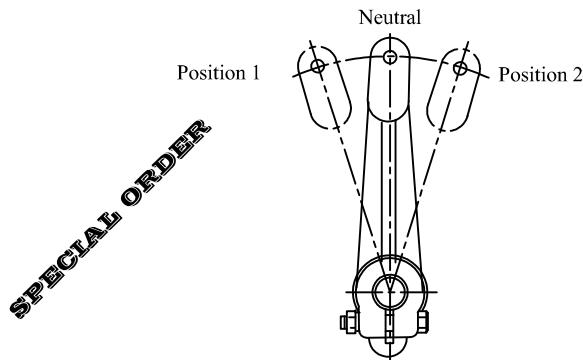


## Control "C"

- Maximum volume stop incorporates the "C" compensator with an adjustable volume stop. The maximum pump delivery is externally adjusted.

MODEL	Max stop S/A No.	Adj. Rod	Adapter block
PVB5 /6 L.H.-**	942188	354573	354578
PVB5 /6 R.H.-**	942189	354573	354579
PVB10/15 L.H.-**	942190	354574	354579
PVB10/15 R.H.-**	942191	354574	354578
PVB20/29 L.H.-**	942192	354575	354578
PVB20/29 R.H.-**	942192	354575	354578

Available in frame size PVB5 to PVB29



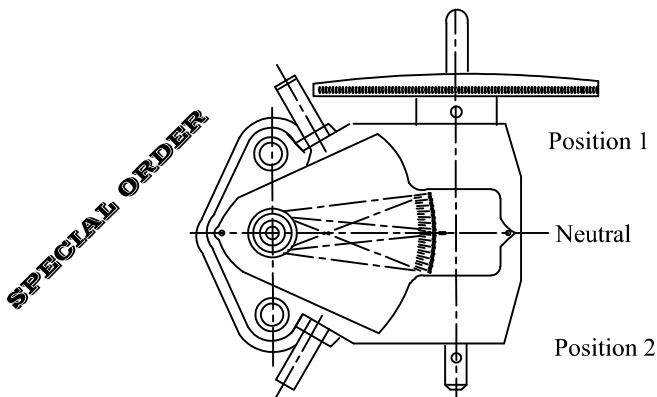
## Control "M"

-Level control-

- "M" control provides manual adjustment of pump flow. Level must be secured in position to maintain prespected flow.

Rotation	Level Position	Outlet Port
R.H	1	A
R.H	2	B
L.H	1	B
L.H	2	A

Available in frame size PVB5 to PVB15



## Control "H"

-Handwheel control-

- Turning handwheel provides over-center control of pump output flow.

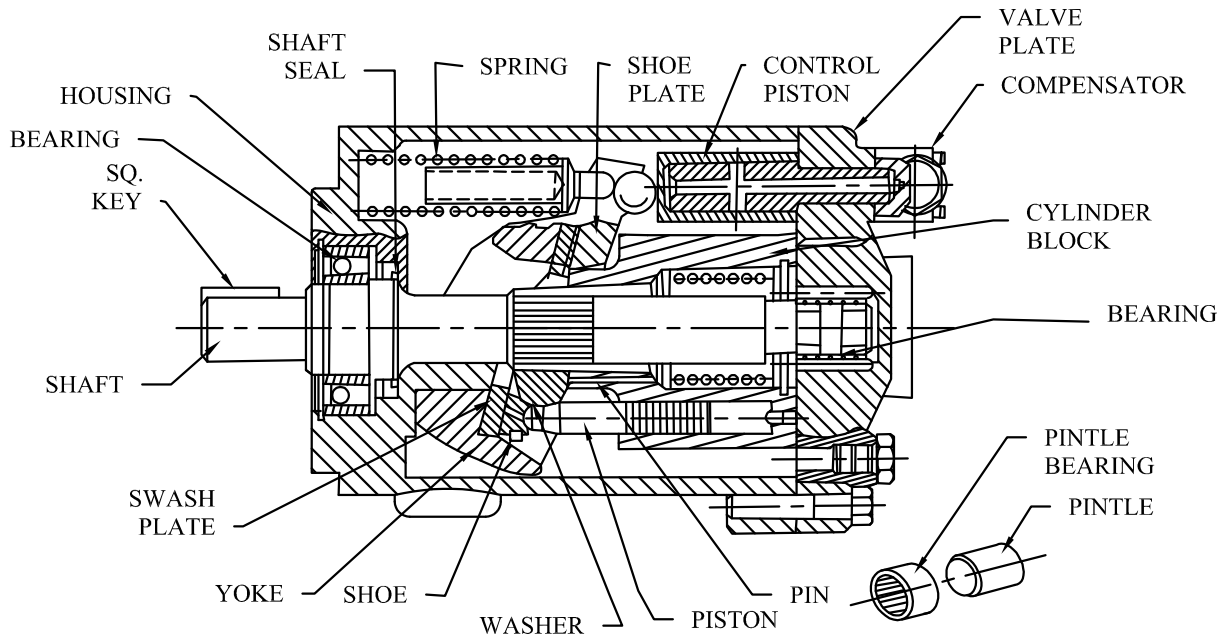
Shaft Rotation	Pointer Position	Outlet Port
R.H	1	A
R.H	2	B
L.H	1	B
L.H	2	A

Available in frame size PVB5 to PVB15

# PVB5/PVB6 PISTON PUMPS



## SERVICE PARTS INFORMATION



PART #	DESCRIPTION	PART #	DESCRIPTION	PART #	DESCRIPTION
875775	ROT GROUP PVB5	919191	SEAL KIT	317572	PINTLE BEARING
875773	ROT GROUP PVB6	237014	* SEAL	273409	LIFT LIMITER
319245	△ SW. PLATE	279615	* GASKET	165385	RET. RING
942229	△ PISTON PVB5(9)	244956	* COMP. GASKET	241579	PISTON
942230	△ PISTON PVB6(9)	308334	HOUSING	241924	PISTON ROD
274249	△ SHOE PLATE	231557	YOKE	185638	RET. RING
275485	△ SPHER. WASHER	373132	YOKE SPRING	039465	PLATE BEARING
274956	△ WASHER	373131	SEAT	942223	RH PLATE PVB5/6
248203	△ PINS(3)	319243	PINTLE	942224	LH PLATE PVB5/6
274670	△ CYL BLOCK PVB5	283233	BEARING SHAFT	942158	C COMPENSATOR
315148	△ CYL BLOCK PVB6	266162	STD KEYED SHAFT	942159	CM COMPENSATOR
275474	△ THRUST WASHER	142843	SHAFT KEY	942480	CG COMPENSATOR
274787	△ SPRING CYL. BL.	190362	RETAINER	924059	CVP COMPENSATOR
				942188	MAX STOP (CCW)
				942189	MAX STOP (CW)

\* INCLUDED IN SEAL KIT

△ INCLUDED IN ROTATING GROUP

Bolt Torque 150-181 lb.in

### Note:

- Optional side ports, thru-shaft available.
- Optional compensator/controls available. (see page B1.7)
- Optional maximum flow adjustment available. (see page B1.8)
- Optional foot bracket

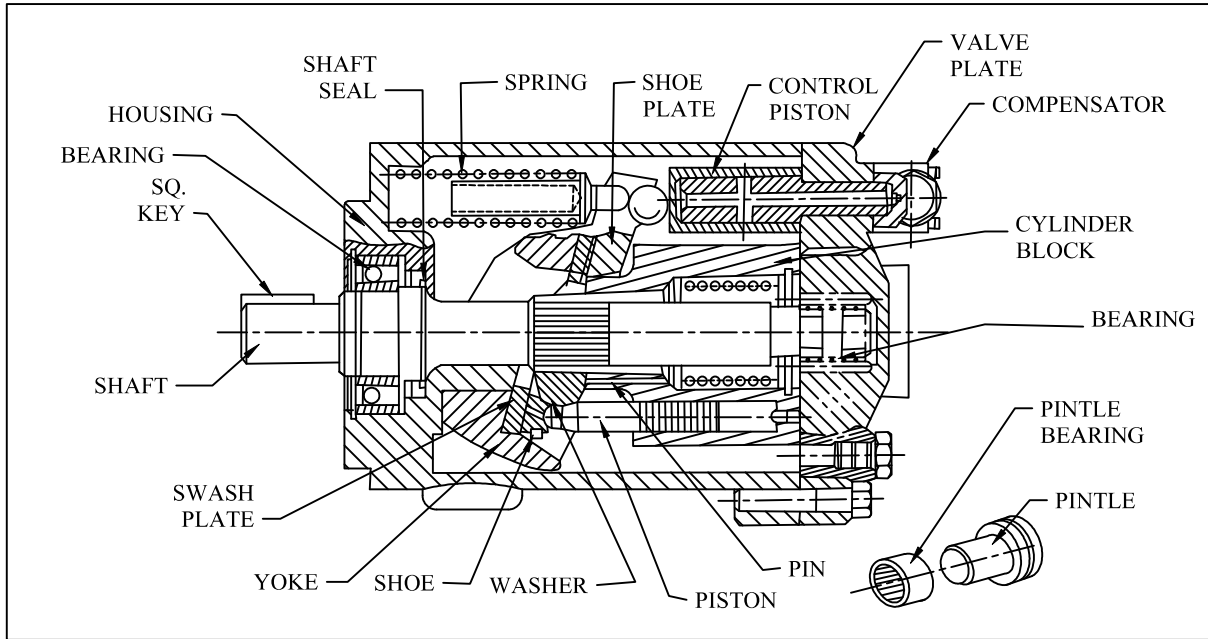
### Filtration

For satisfactory service life use full flow filtration to provide fluid which ISO cleanliness code 16/13 .

# PVB10/15 PISTON PUMPS



## SERVICE PARTS INFORMATION



PART #	DESCRIPTION	PART #	DESCRIPTION	PART #	DESCRIPTION
938276	ROT GROUP PVB10	919682	SEAL KIT	058303	Y SHAFT KEY
938273	ROT GROUP PVB15	343573	* SEAL	274382	RETAINER
239077	Δ SW. PLATE	317162	* GASKET	265425	PINTLE
942047	Δ PISTON PVB10(9)	244956	* COMP. GASKET	012016	PINTLE BEARING
941887	Δ PISTON PVB15(9)	357652	HOUSING	245223	LIFT LIMITER
275961	Δ SHOE PLATE	342743	YOKE	093509	RET. RING
423324	Δ SPHER. WASHER	278634	YOKE BIG SPRING	942327	Piston & Rod Ass.
248812	Δ PINS(3)	317239	YOKE SM. SPRING	185638	RET. RING
321703	Δ CYL BLOCK PVB10	120428	RET. RING OUT	039465	PLATE BEARING
260860	Δ CYL BLOCK PVB15	119982	RET. RING IN	942165	RH PLATE PVB10
241954	Δ THRUST WASHER	284397	BEARING SHAFT	942166	LH PLATE PVB10
247294	Δ SPRING CYL. BL.	261478	SHAFT SHORT	942167	RH PLATE PVB15
942158	C COMPENSATOR	270369	SHAFT LONG	942168	LH PLATE PVB15
942159	CM COMPENSATOR	942190	MAX STOP (CCW)		
942480	CG COMPENSATOR	942191	MAX STOP (CW)		
924059	CVP COMPENSATOR				

\* INCLUDE IN SEAL KIT

Δ INCLUDE IN ROTATING GROUP

Bolt Torque 150-181 lb.in

**Note:**

- Optional side ports, thru-shaft available.
- Optional compensator/controls available. (see page B1.7)
- Optional maximum flow adjustment available. (see page B1.8)
- Optional foot bracket

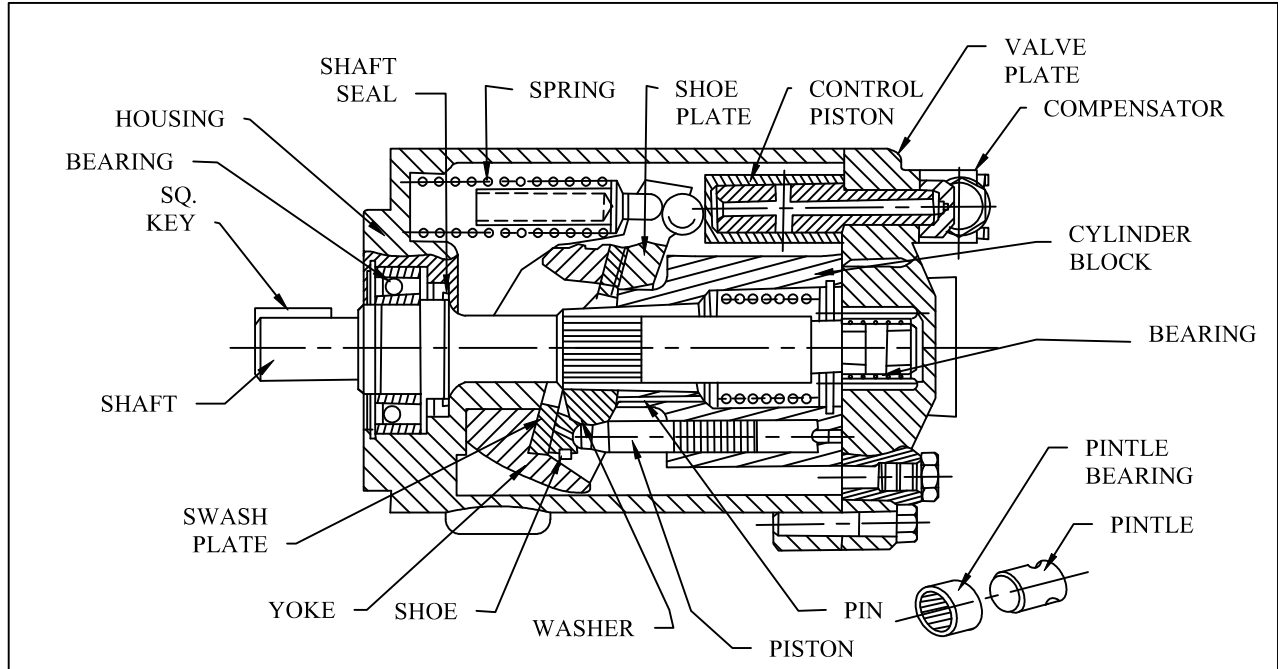
**Filtration**

For satisfactory service life use full flow filtration to provide fluid which ISO cleanliness code 16/13 .

# PVB20/PVB29 PISTON PUMPS



## SERVICE PARTS INFORMATION



PART #	DESCRIPTION	PART #	DESCRIPTION	PART #	DESCRIPTION
938274	ROT GROUP PVB20	919683	SEAL KIT	353230	PINTLE BEARING
938275	ROT GROUP PVB29	295262	* SEAL	36924	PINTLE PLUG
239335	△ SW. PLATE	245976	* GASKET	244931	LIFT LIMITER
941883	△ PISTON PVB20(9)	244956	* COMP. GASKET	194025	RET. RING
941888	△ PISTON PVB29(9)	362029	HOUSING	379793	PISTON
248609	△ SHOE PLATE	362028	YOKE	379792	PISTON ROD
938392	△ SPHER. WASHER	294079	YOKE BIG SPRING	185638	RET. RING
248836	△ PINS(3)	245975	SEAT	251108	PLATE BEARING
250688	△ CYL BLOCK PVB20	117506	RET. RING OUT	942169	RH PLATE PVB20
259458	△ CYL BLOCK PVB29	117507	RET. RING IN	942170	LH PLATE PVB20
238780	△ THRUST WASHER	283090	BEARING SHAFT	942171	RH PLATE PVB29
246386	△ SPRING CYL. BL.20	362135	SHAFT	942172	LH PLATE PVB29
263582	△ SPRING CYL. BL.29	246353	SHAFT KEY	942158	C COMPENSATOR
194878	RETAINER	388745	PINTLE	942159	CM COMPENSATOR
942192	MAX STOP			942480	CG COMPENSATOR
				924059	CVP COMPENSATOR

\* INCLUDE IN SEAL KIT

△ INCLUDE IN ROTATING GROUP

Bolt Torque 150 - 181 lb.in

### Note:

- Optional side ports, thru-shaft available.
- Optional compensator/controls available. (see page B1.7)
- Optional maximum flow adjustment available. (see page B1.8)
- Optional foot bracket

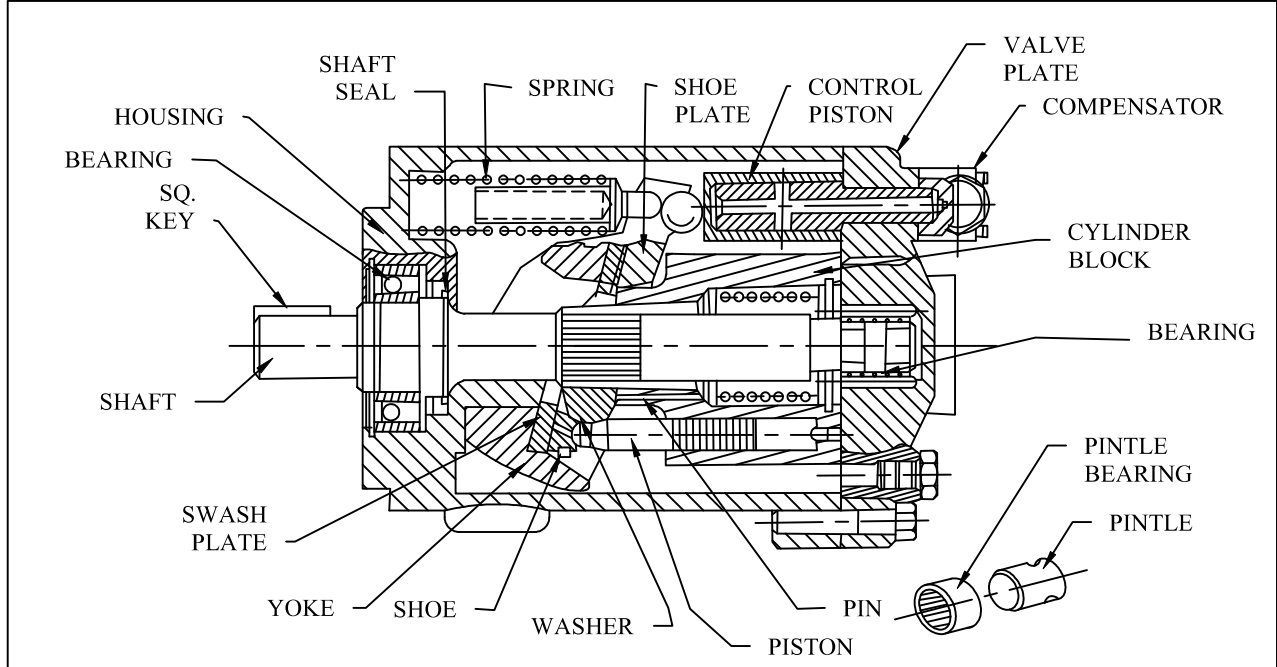
### Filtration

For satisfactory service life use full flow filtration to provide fluid which ISO cleanliness code 16/13 .

# PVB45A PISTON PUMPS



## SERVICE PARTS INFORMATION



PART #		DESCRIPTION	PART #		DESCRIPTION	PART #		DESCRIPTION
938074		ROT GROUP PVB45A	919683		SEAL KIT	353230		PINTLE BEARING
			295262	*	SEAL	36924		PINTLE PLUG
239335	△	SW. PLATE	245976	*	GASKET	244931		LIFT LIMITER
942284	△	PISTON PVB45A (9)	244956	*	COMP. GASKET	194025		RET. RING
	△		362029		HOUSING	379793		PISTON
248609	△	SHOE PLATE	387534		YOKE	379792		PISTON ROD
938392	△	SPHER. WASHER	294079		YOKE BIG SPRING	185638		RET. RING
248836	△	PINS(3)	245975		SEAT	251108		PLATE BEARING
283501	△	CYL BLOCK PVB45A	117506		RET. RING OUT	942285		RH PLATE PVB45A
	△		117507		RET. RING IN			
238780	△	THRUST WASHER	283090		BEARING SHAFT			
	△		362135		SHAFT			
263582	△	SPRING CYL. BL.	246353		SHAFT KEY	942158	C	COMPENSATOR
194878		RETAINER	388745		PINTLE	942159	CM	COMPENSATOR
942192		MAX STOP				942480	CG	COMPENSATOR
						924059	CVP	COMPENSATOR

\* INCLUDE IN SEAL KIT

△ INCLUDE IN ROTATING GROUP

Bolt Torque 150 - 181 lb.in

### Note:

- Optional side ports, thru-shaft available.
- Optional compensator/controls available. (see page B1.7)
- Optional maximum flow adjustment available. (see page B1.8)
- Optional foot bracket

### Filtration

For satisfactory service life use full flow filtration to provide fluid which ISO cleanliness code 16/13 .