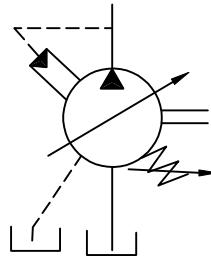
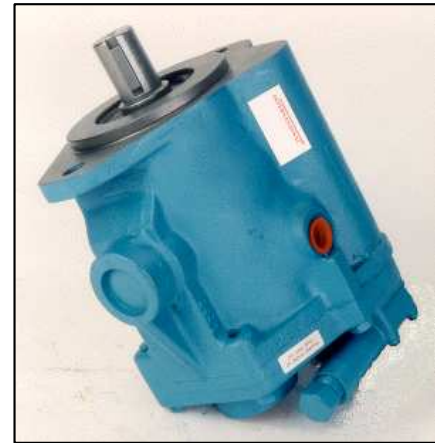


# IFP VARIABLE DISPLACEMENT PVB5...PVB45 PISTON PUMPS

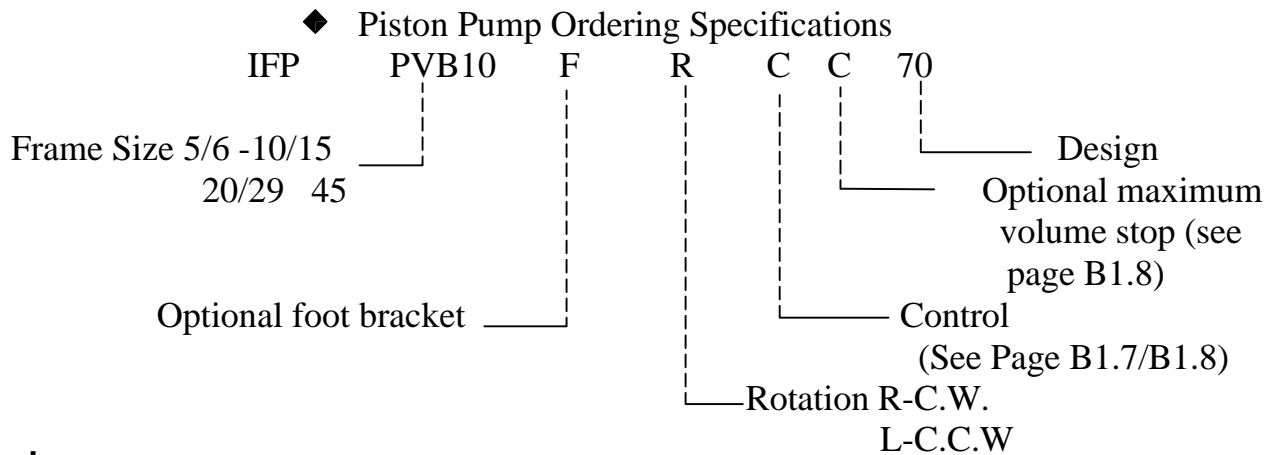


IFP piston pumps are inline, variable volume units available in 4 frame sizes and 7 displacements. The wide variety of controls and overall efficiency make them ideal for the most demanding industrial applications.



## 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.



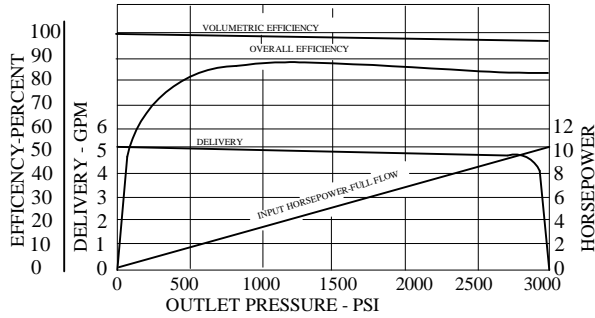
## Warning

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

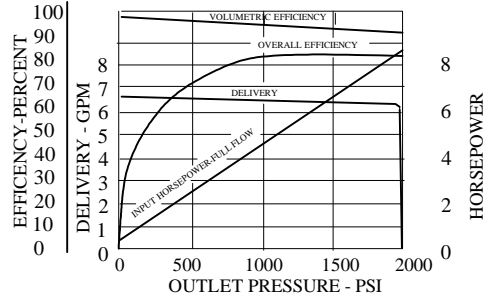
# IFF PVB PISTON PUMP PERFORMANCE CURVES



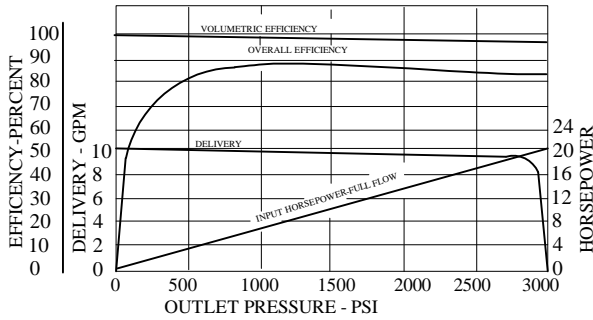
MODEL PVB5  
BASED ON OIL TEMPERATURE OF 120° F  
(100 SUS)  
1800 RPM INPUT-ATMOSPHERIC INLET



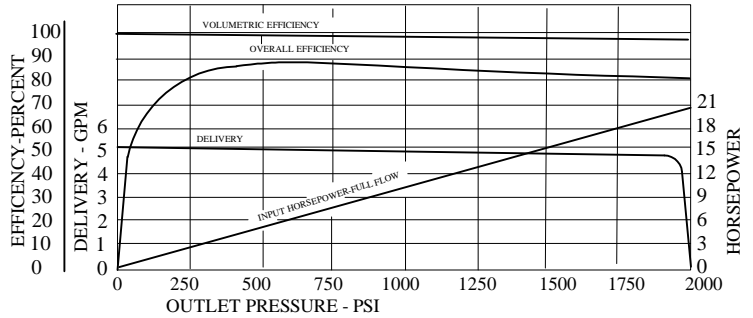
MODEL PVB6  
BASED ON OIL TEMPERATURE OF 120° F  
(100 SUS)  
1800 RPM INPUT-ATMOSPHERIC INLET



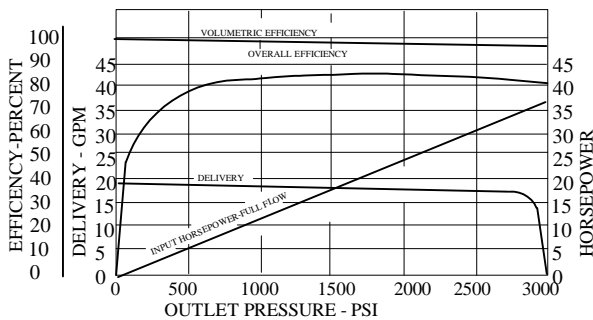
MODEL PVB10  
BASED ON OIL TEMPERATURE OF 120° F  
(100 SUS)  
1800 RPM INPUT-ATMOSPHERIC INLET



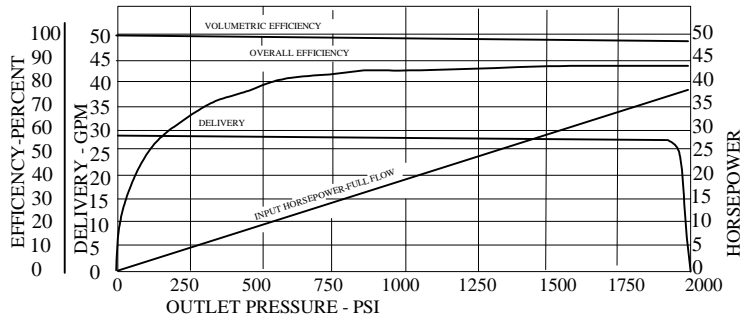
MODEL PVB15  
BASED ON OIL TEMPERATURE OF 120° F  
(100 SUS)  
1800 RPM INPUT-ATMOSPHERIC INLET



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



# IFP 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

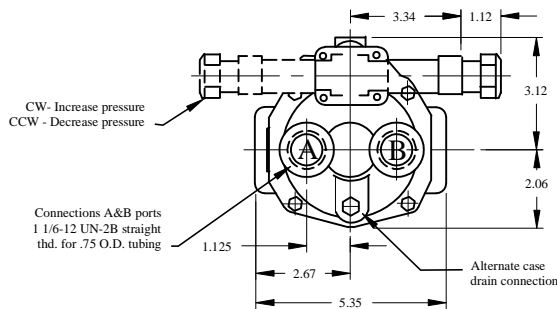
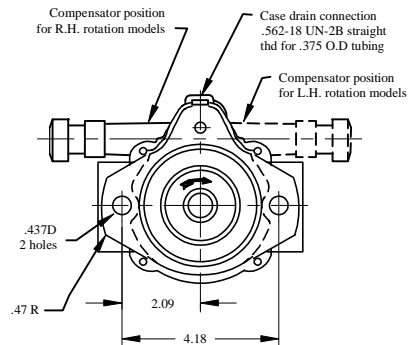
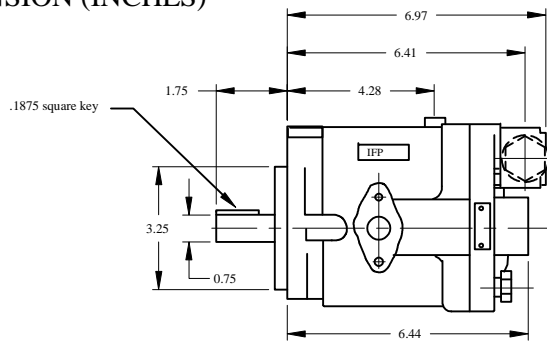
### SOUND LEVEL PER ISO 4412

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	

# IFP PVB5/6 INSTALLATION DIMENSIONS



DIMENSION (INCHES)

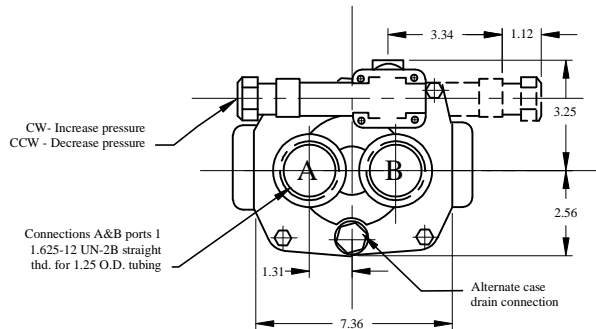
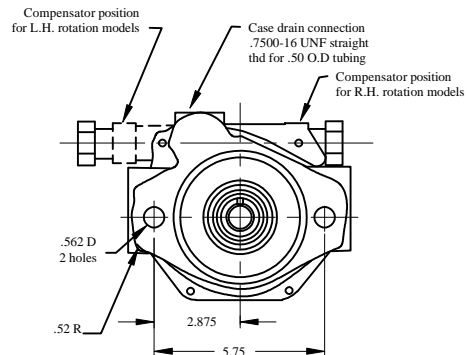
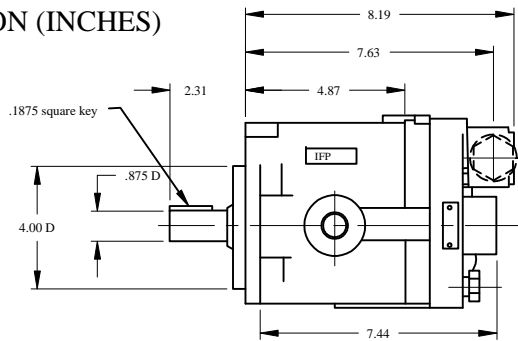


Rotation	Oil port	
	Inlet	Outlet
R.H	A	B
L.H	B	A

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

# PVB 10/15 INSTALATION DIMENSIONS

DIMENSION (INCHES)



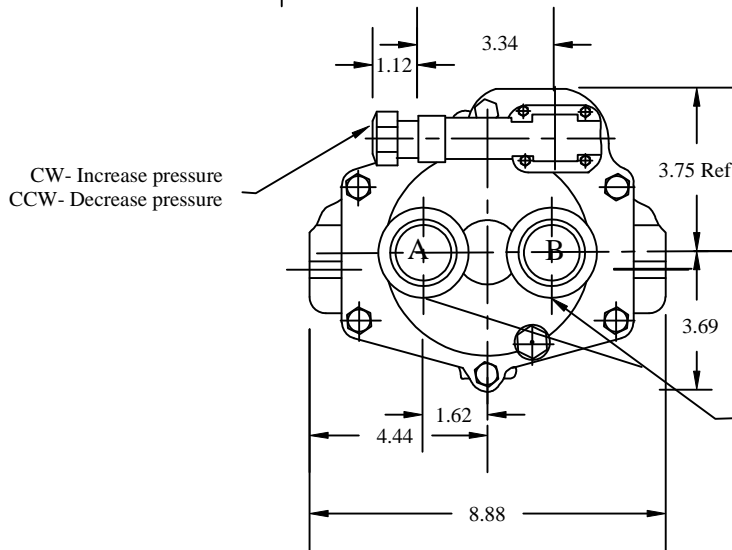
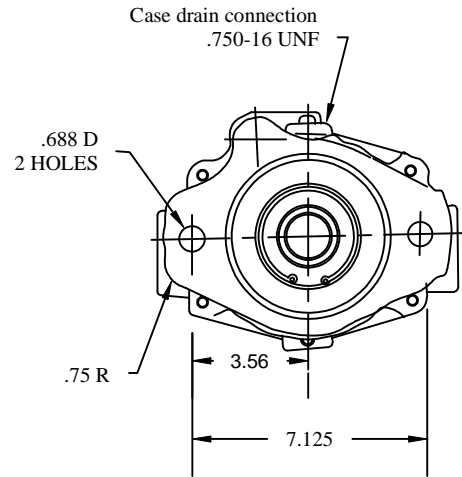
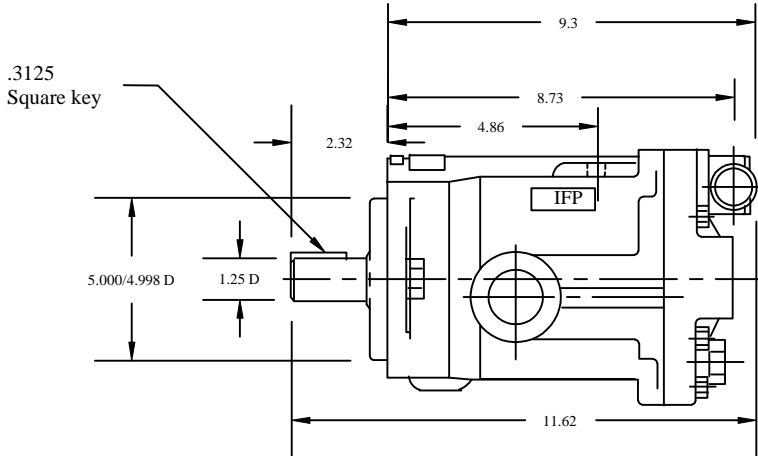
Rotation	Oil port	
	Inlet	Outlet
R.H	A	B
L.H	B	A

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

# IFP PVB20/29 INSTALLATION DIMENSIONS



## DIMENSION(INCHES)



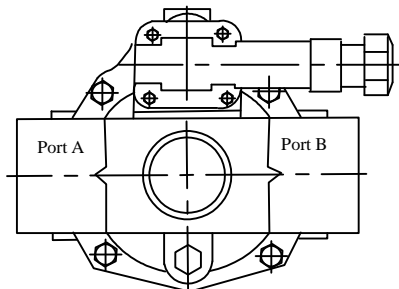
Rotation	Oil port Inlet/Outlet
R.H	A B
L.H	B A

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

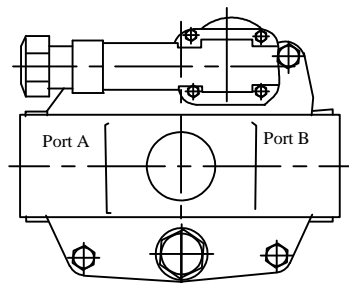
CONNECTION A&B  
1.625-12N SAE "O" RING  
1.25 "O" D TUBING

## SIDE PORT OPTION

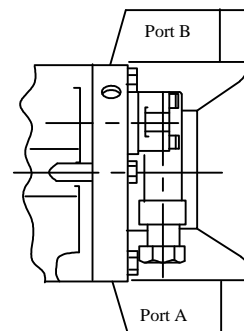
	Connection A & B
PVB5/6	1" O.D Tubing /1.312-12UNF
PVB10/15	1 1/4" O.D Tubing /1.625-16UNF
PVB20/29	1 1/2" SAE 4 Bolt Flange



**PVB5/6**



**PVB10/15**

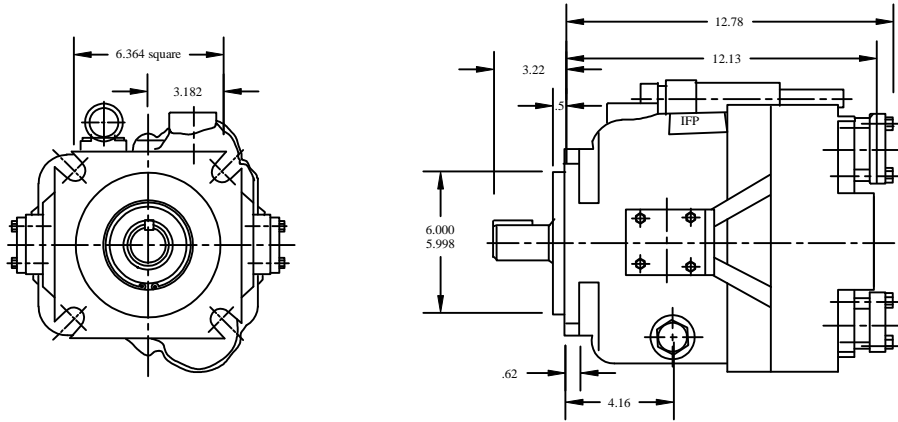


**PVB20/29**

# IFP PVB45 INSTALLATION DIMENSIONS

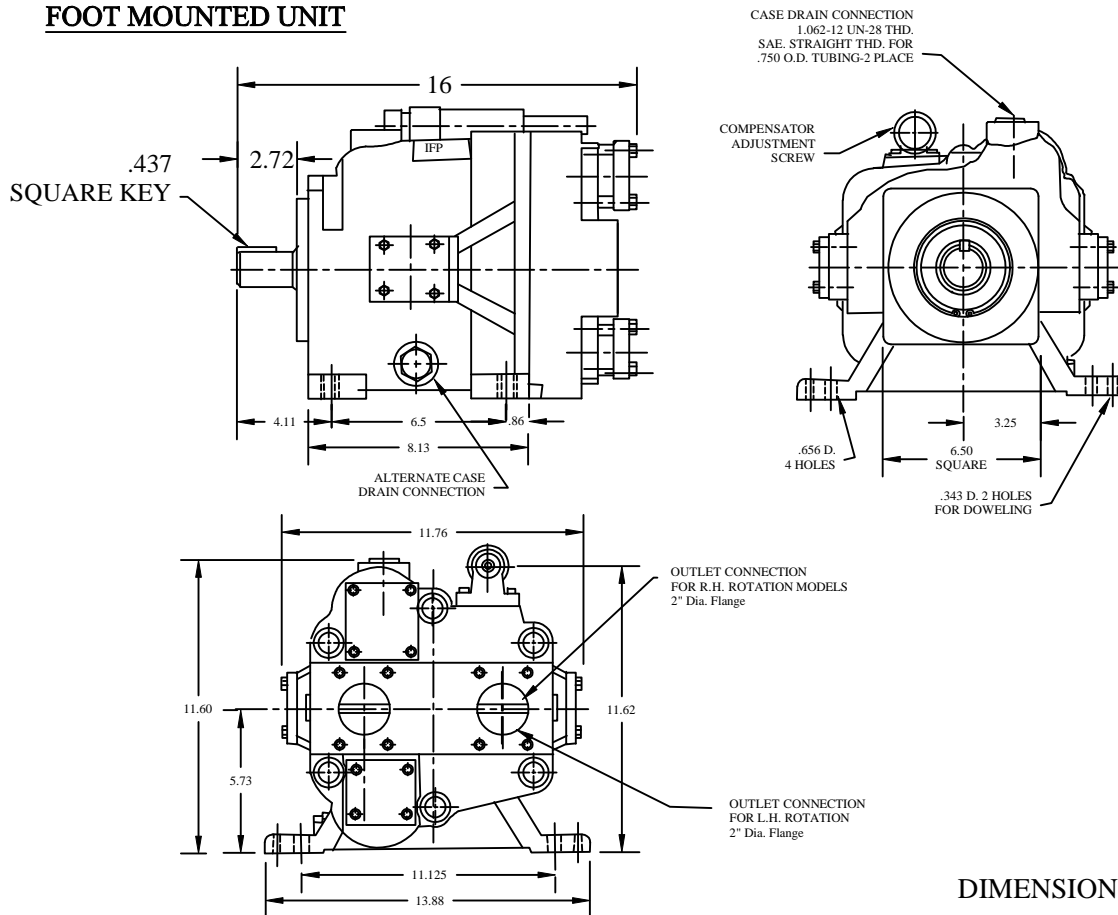


## FLANGE MOUNTED UNIT



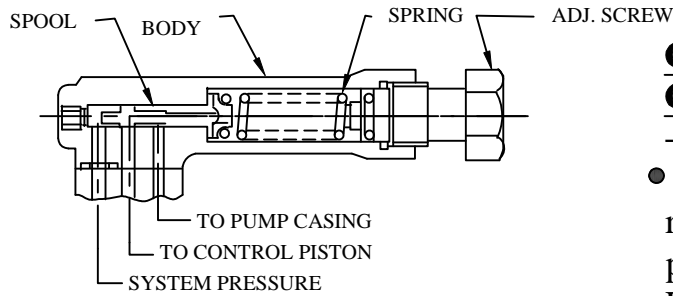
DIMENSION (INCHES)

## FOOT MOUNTED UNIT



DIMENSION (INCHES)

# OPTIONAL CONTROLS



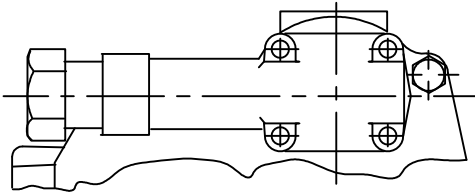
## **Control "CM"(942159N)/ Control "C"(942158N)**

- 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

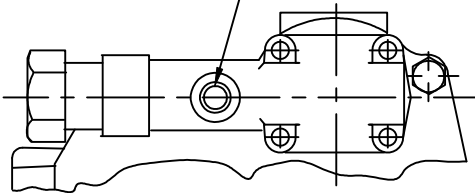
"CM" range 250 - 1500 PSI

"C" range 250 - 3000 PSI



Available in frame sizes PVB5 to PVB45

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

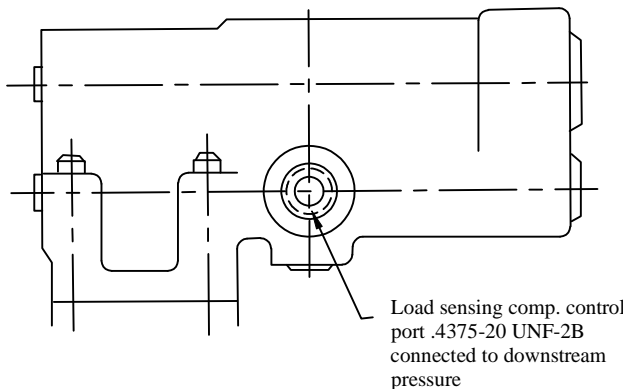


## **Control "CG"(942480N)**

- Remote pressure compensator-

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

Available in frame sizes PVB5 to PVB29



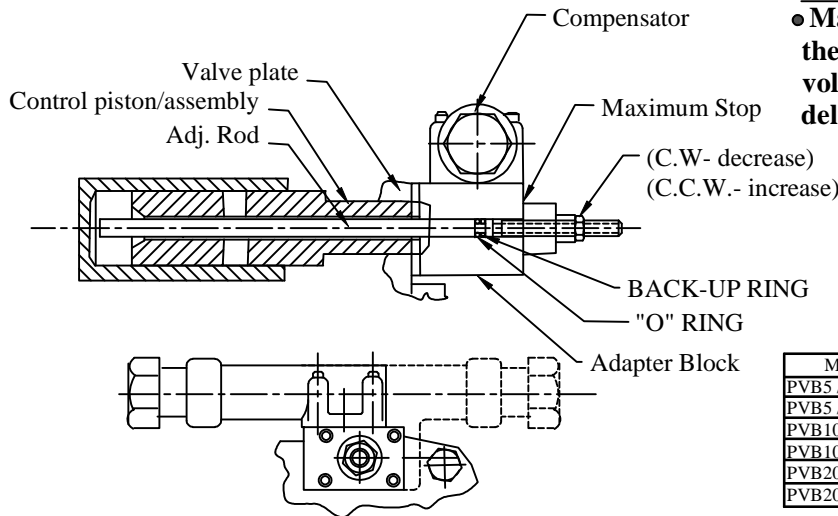
## **Control "CVP"(924069N)**

- 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

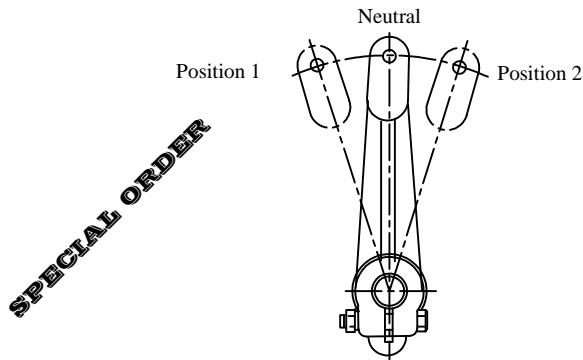


## Control "C"

- **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.-**	942188N	354573N	354578N
PVB5 /6 R.H.-**	942189N	354573N	354579N
PVB10/15 L.H.-**	942190N	354574N	354579N
PVB10/15 R.H.-**	942191N	354574N	354578N
PVB20/29 L.H.-**	942192N	354575N	354578N
PVB20/29 R.H.-**	942192N	354575N	354578N

Available in frame size PVB5 to PVB29



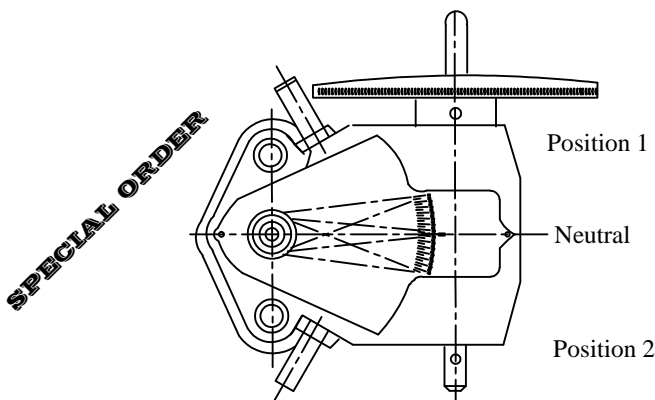
## Control "M"

### -Level control-

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

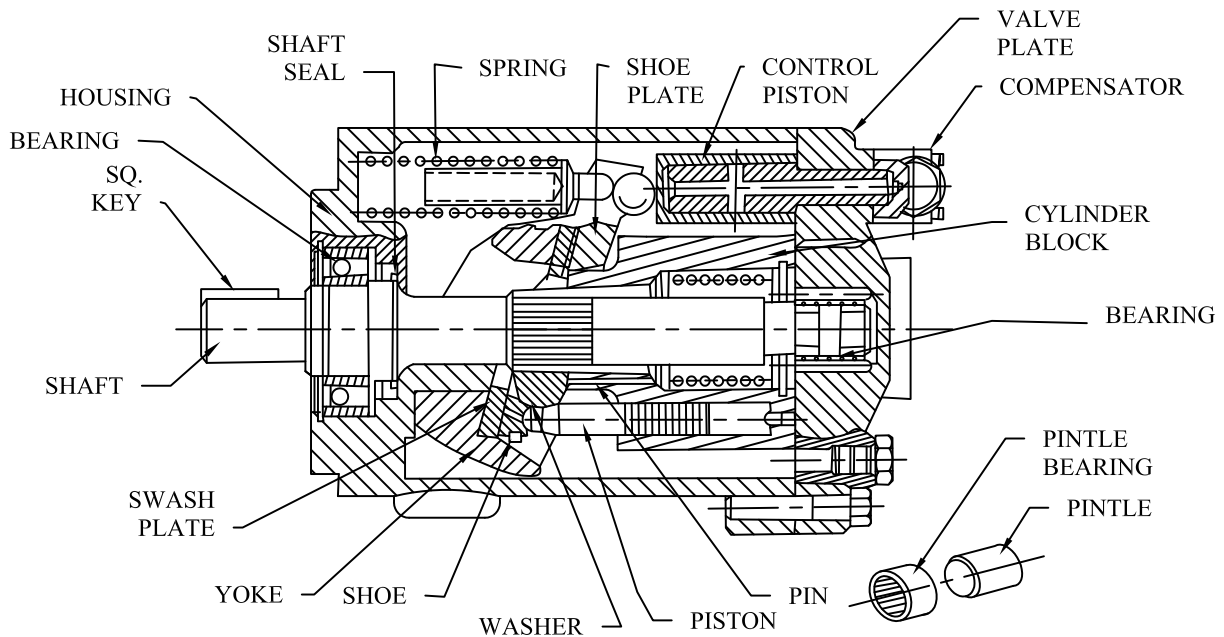
Shaft Rotation	Pointer Position	Outlet Port
R.H	1	A
R.H	2	B
L.H	1	B
L.H	2	A

Available in frame size PVB5 to PVB15

# IFP PVB5/PVB6 PISTON PUMPS



## SERVICE PARTS INFORMATION



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

\* INCLUDED IN SEAL KIT

Δ 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

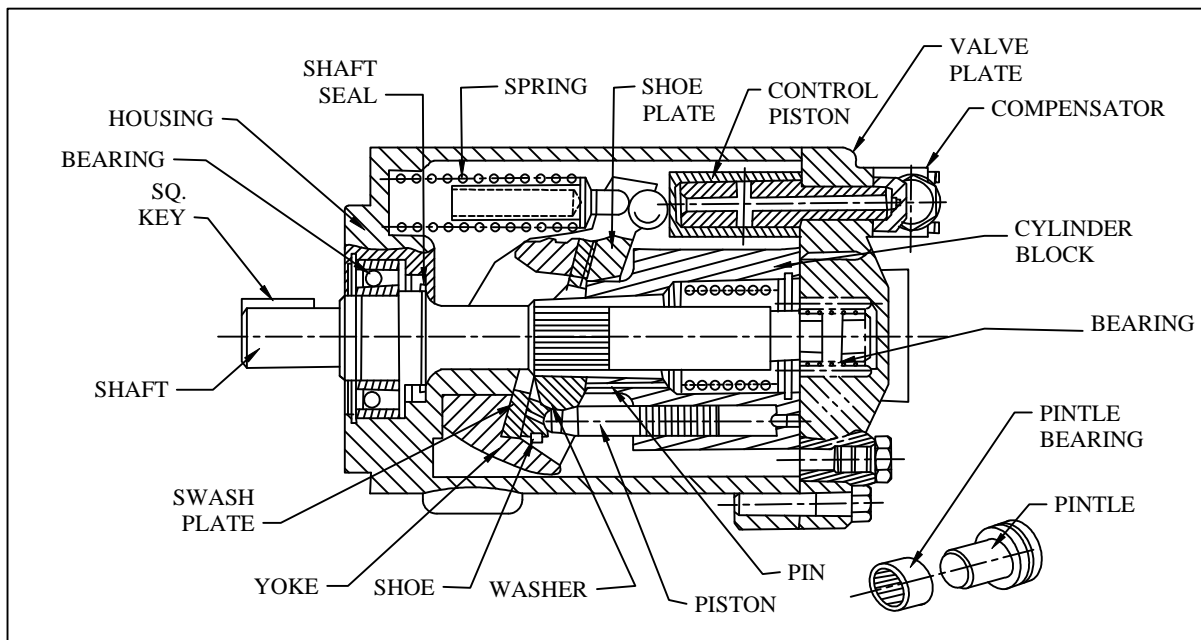
### Filtration

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

# IFP PVB10/15 PISTON PUMPS



## SERVICE PARTS INFORMATION



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

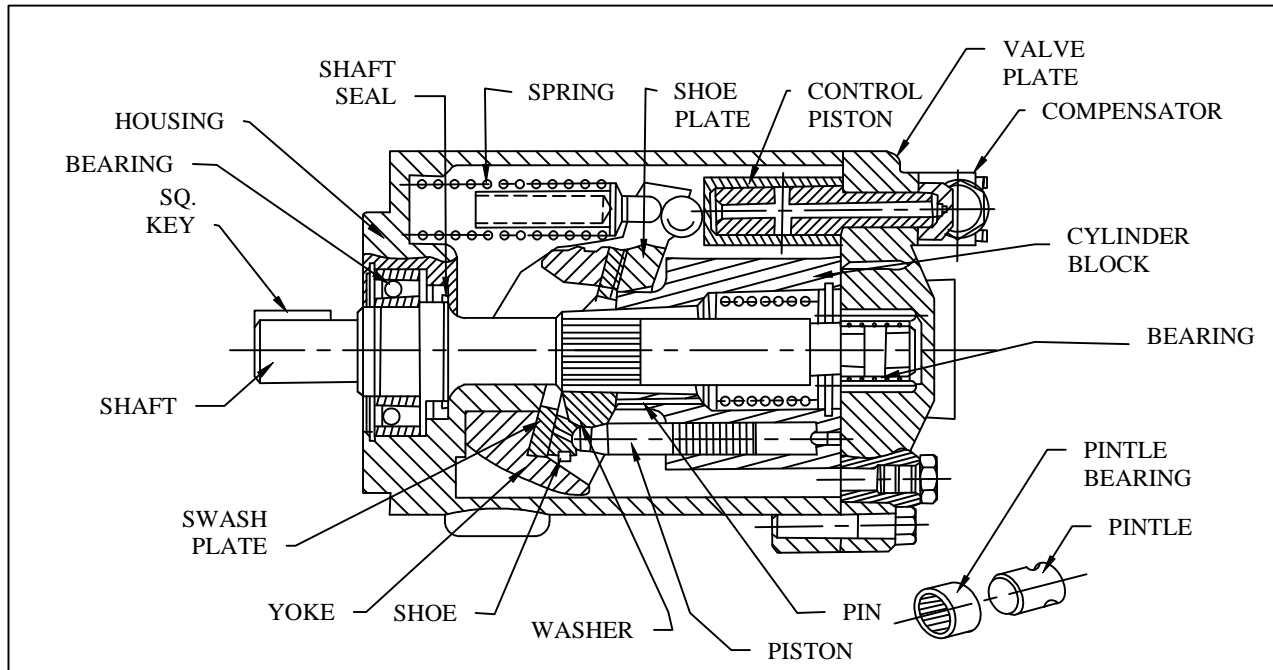
**Filtration**

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

# IFP PVB20/PVB29 PISTON PUMPS



## SERVICE PARTS INFORMATION



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

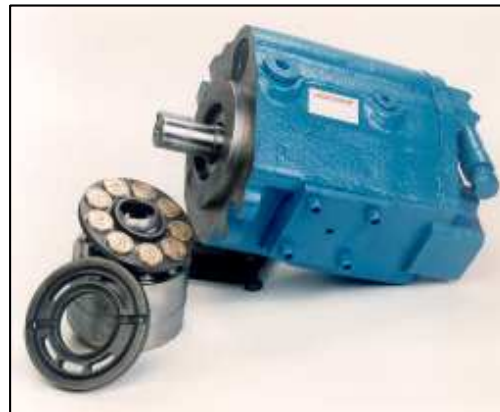
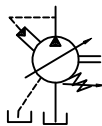
For satisfactory service life use full flow filtration to provide fluid which ISO cleanliness code 16/13 .

# IFP HIGH PERFORMANCE PVBQ5...PVBQ29 PISTON PUMPS



## FEATURES

- High operating pressures (3500 PSI)
- High operating speeds (3600 RPM)
- Lower noise levels
- Simplified conversions
- Wide variety pressure controls
- Optional seals

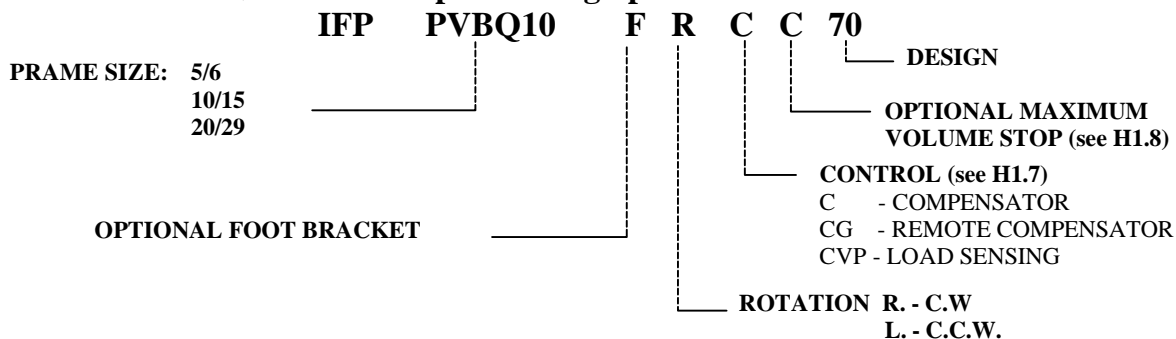


## Technical Data

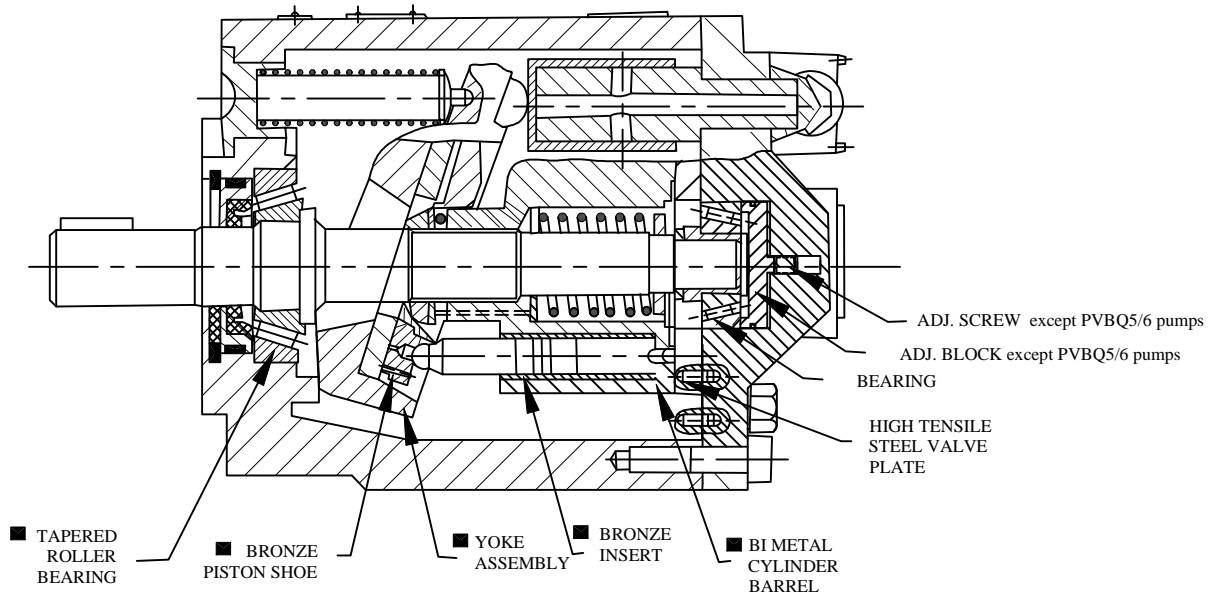
Values based on using anti-wear type petroleum oil 150 SUS at 100°F and 0 PSI inlet pressure

MODEL	DISPL.	DELIVERY GPM at		MAXIMUM RPM		MAXIMUM PRESSURE		WGT. lbs.
		1800 RPM	MAX RPM	Anti-wear oil	HWBF	PSI Anti-wear oil	PSI HWBF	
PVBQ5	.643	5	10	3600	1800	3500	1000	14
PVBQ6	.843	6.5	11.4	3200		3000		
PVBQ10	1.29	10	18	3200		3500		
PVBQ15	2.01	15	26.2	3000		3000		24
PVBQ20	2.61	20	26	2400		3000		
PVBQ29	3.76	29	38	2400		3000		

### ◆ Piston Pump Ordering Specification



# IFP HIGH PERFORMANCE PVBQ5...PVBQ29 PISTON PUMPS

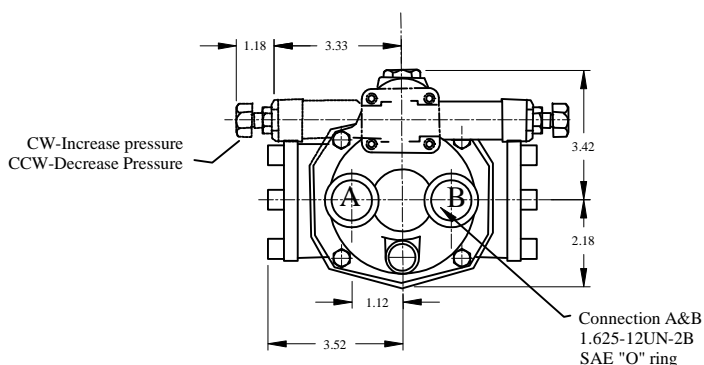
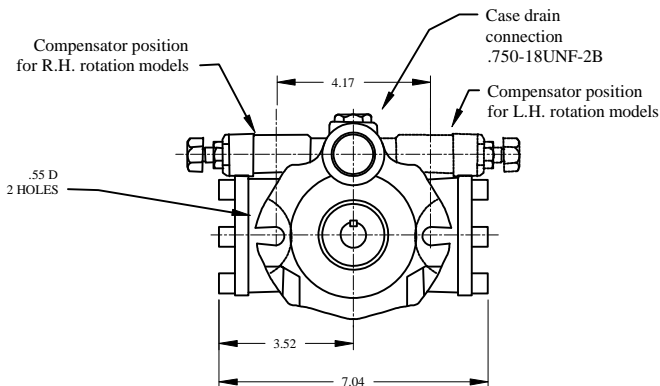
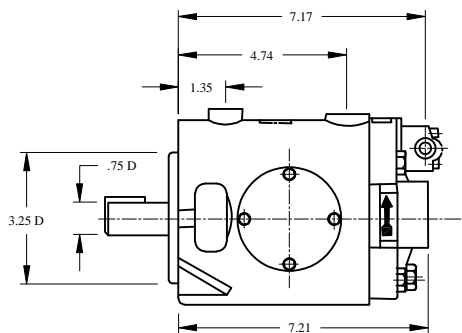


## ■ INCLUDES SPECIAL DESIGN FEATURES

### **Design Improvements:**

- Bi-metal cylinder barrel with bronze inserts on piston bores. Provides improved wear surface for higher speeds and longer service life.
- Steel bearing plate for easy conversion of pump rotation. Improved wear surface for higher speeds and longer service life. Economical repair by lapping or replacement after long service life.
- Bronze piston shoes for improved performance.
- High load tapered roller bearings for improved shaft support.
- Re-designed yoke assembly with low friction bushing support for higher pressures and improved pump performance.
- Pintle cover and gasket to eliminate leaking from pintle assembly.

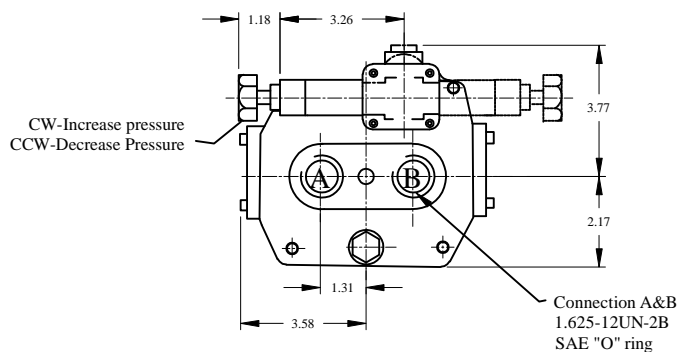
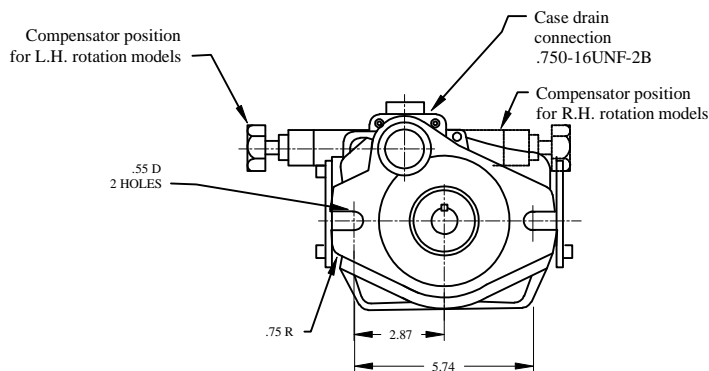
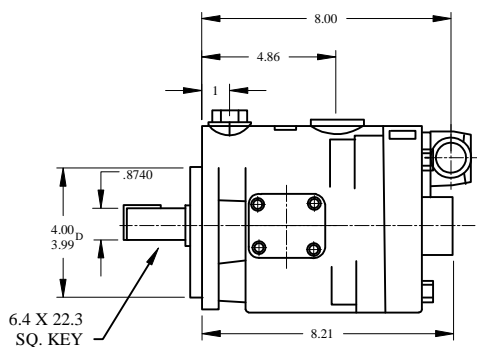
# PVBQ5/6 INSTALLATION DIMENSIONS



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

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

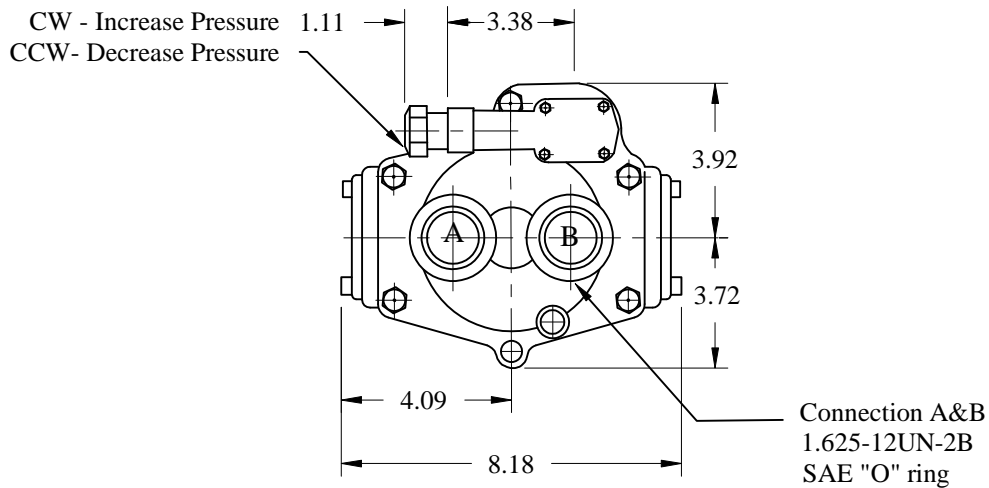
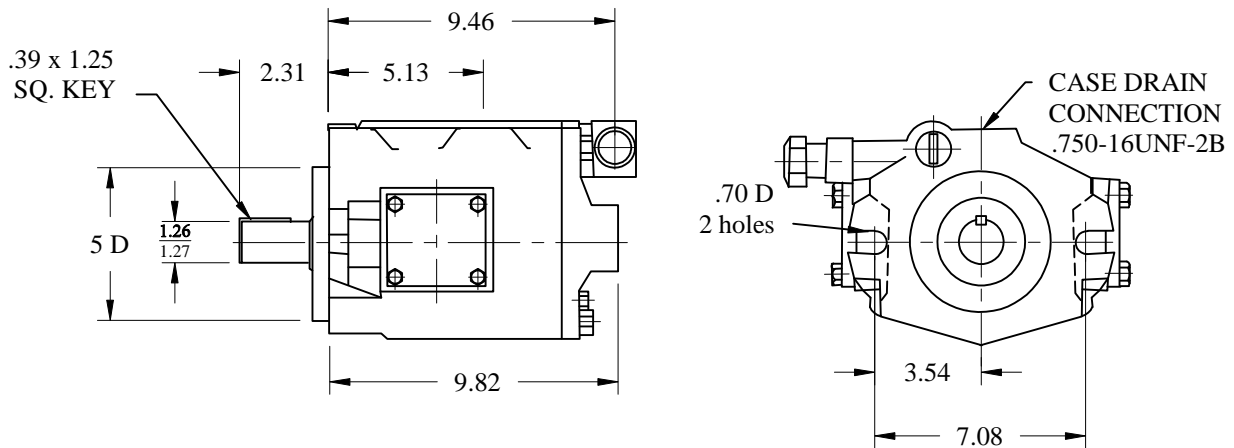
# PVBQ10/15 INSTALLATION DIMENSIONS



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

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

# IFP PVBQ20/PVBQ29 INSTALLATION DIMENSIONS



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

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