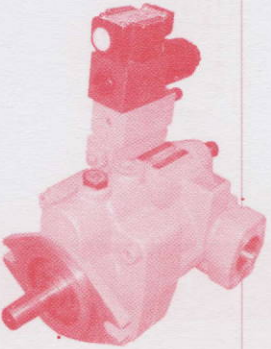


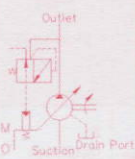
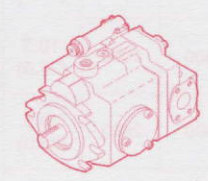
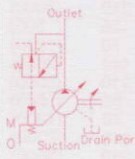


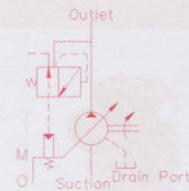
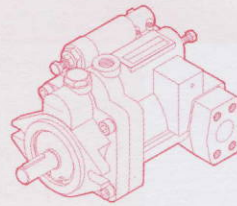


B

PISTON PUMP	Graphic Symbol	Model	Volume cc/rev in ³ /rev.	P max. bar(PSI)	Shaft Speed Range rpm Max./Min.
		PV-8*-0**-20	8.0 (0.50)	210(3000)	2000/500
		PV-8*-1**-20			
		PV-8*-2**-20			
		PV-16*-0**-20	16.5 (1.01)		
		PV-16*-1**-20			
		PV-16*-2**-20			
		PV-22*-0**-20	22.2 (1.34)		
		PV-22*-1**-20			
		PV-22*-2**-20			
					
PV-36*-1**-20					
PV-36*-2**-20					
PV-36*-3**-20	46.0 (2.76)				
PV-46*-0**-20					
PV-46*-1**-20					
PV-46*-2**-20	70.0 (4.27)				
PV-46*-3**-20					
PV-70*-1**-20					
PV-70*-3**-20	100.0 (6.10)				
PV-70*-4**-20					
PV-100*-1**-20					
PV-100*-3**-20	15 (.90)				
PV-100*-4**-20					
HV15					
		HV18	17.8 (1.09)	250(3500)	1800/500
		HV23	23.0 (1.40)		
		HV38	37.8 (2.31)		
		HV50	51.5 (3.14)		
		HV70	69.7 (4.25)		
		HV15-15	15/15		
		HV23-23	23/23		
		HV15-38	15/37.8		
		HV38-38	37.8/37.8		
		HV15-70	15/69.7		
HV38-70	37.8/69.7				

PV Series Variable Volume Piston Pumps

Pmax : 280 bar (4000 psi)
 Qmax : 8 cc/rev ~ 100 cc/rev
 Mounting Type : SAE 2-bolt DIN 4-bolt
 Fluid : ISO VG32 or VG68
 Viscosity & Temp : 20~200 cSt & -5 °C to 60 °C
 Filtration : 100 Microns (150 mesh) Absolute or Finer
 Alignment and installation of pumps : within 0.05 TIR (0.002 in)
 Many options in control type selection
 Applications: Construction, Agricultural, Excavator and Industrial Vehicle



Ordering Code -PV Piston Pumps

PV	36	A	4	R	S	F	-20
Series No	Displacement cc/rev (in ³ /rev)	Control Types	Pressure Compensating range	Rotation	Port Position	Mounting	Design No. Shaft Option Flange Option
PV: Variable Volume Piston Pump	8, (0.5) 16, (1.0) 22, (1.3) 36, (2.1) 46, (2.7) 70, (4.3) 100, (6.1)	■ Standard A : Pressure Compensating (Manual) Option B : Pressure Compensating Type Pilot (Remote Control) C : Two Pressure - Two Flow Control Type D : Solenoid Cut- Off Control Type Control Type E : Two Pressure Cut- Off Control Type F : Two-Pressure, Two-Flow Control Type by Solenoid Valve G : Two-Pressure, Two-Flow Control Type by Solenoid Valve HL : Load Sensing Compensator	0: 10~ 35 bar (143~ 500 psi) 1: 20~ 70 bar (286~1000 psi) 2: 30~140 bar (429~2000 psi) 3: 30~210 bar (429~3000 psi) 4: 50~280 bar (720~4000 psi)	R: Clockwise (CW) L: Counter- Clockwise (CCW) Viewed from Shaft End	S: Side Port R: Axial Port (Rear Port)	F: Flange Mounting L: Foot Mounting	Design No.
							20: PT(Rc) Flange Kits, Straight Key 2080: PF(G) Flange Kits, Straight Key 2090: NPT Flange Kits, Straight Key

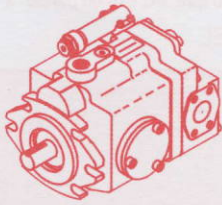
Ratings

Model	Volume cc/rev in ³ /rev	Delivery at No Load lpm (USgpm)				Pressure Compensating Range		MAX Setting Pressure		Drive Speed rpm		Weight kgf (lbs)
		1000rpm	1200rpm	1500rpm	1800rpm	bar	(psi)	bar	(psi)	Min.	Max.	
PV-8-*0**-20	8.0 (0.50)	8.0 (2.1)	9.6 (2.5)	12.0 (3.2)	14.4 (3.8)	10 ~ 35	(143 ~ 500)	35	(500)	500	2000	7.5 (16.4)
PV-8-*1**-20						20 ~ 70	(286 ~ 1000)	70	(1000)			
PV-8-*2**-20						30 ~ 140	(429 ~ 2000)	140	(2000)			
PV-8-*3**-20						30 ~ 210	(429 ~ 3000)	210	(3000)			
PV-16-*0**-20	16.5 (1.01)	16.5 (4.4)	19.8 (5.2)	24.7 (6.5)	29.7 (7.8)	10 ~ 35	(143 ~ 500)	35	(500)	500	2000	10.5 (23.0)
PV-16-*1**-20						20 ~ 70	(286 ~ 1000)	70	(1000)			
PV-16-*2**-20						30 ~ 140	(429 ~ 2000)	140	(2000)			
PV-16-*3**-20						30 ~ 210	(429 ~ 3000)	210	(3000)			
PV-22-*0**-20	22.2 (1.34)	22.0 (5.8)	26.4 (7.0)	33.0 (8.7)	39.6 (10.5)	10 ~ 35	(143 ~ 500)	35	(500)	500	2000	10.5 (23.0)
PV-22-*1**-20						20 ~ 70	(286 ~ 1000)	70	(1000)			
PV-22-*2**-20						30 ~ 140	(429 ~ 2000)	140	(2000)			
PV-22-*3**-20						30 ~ 210	(429 ~ 3000)	210	(3000)			
PV-36-*0**-20	36.0 (2.14)	36.0 (9.2)	42.0 (11.1)	52.5 (13.9)	63.0 (16.6)	10 ~ 35	(143 ~ 500)	35	(500)	500	2000	23.0 (51.0)
PV-36-*1**-20						20 ~ 70	(286 ~ 1000)	70	(1000)			
PV-36-*2**-20						30 ~ 140	(429 ~ 2000)	140	(2000)			
PV-36-*3**-20						30 ~ 210	(429 ~ 3000)	210	(3000)			
PV-46-*0**-20	46.0 (2.76)	46.0 (11.9)	54.0 (14.3)	67.5 (17.9)	81.0 (21.5)	10 ~ 35	(143 ~ 500)	35	(500)	500	2000	23.0 (51.0)
PV-46-*1**-20						20 ~ 70	(286 ~ 1000)	70	(1000)			
PV-46-*2**-20						30 ~ 140	(429 ~ 2000)	140	(2000)			
PV-46-*3**-20						30 ~ 210	(429 ~ 3000)	210	(3000)			
PV-70-*1**-20	70.0 (4.27)	70.0 (18.5)	84.0 (22.2)	105.0 (27.7)	126.0 (33.3)	20 ~ 70	(286 ~ 1000)	70	(1000)	500	2000	37.0 (82.0)
PV-70-*3**-20						20 ~ 210	(286 ~ 3000)	210	(3000)			
PV-70-*4**-20						20 ~ 280	(286 ~ 4000)	280	(4000)			
PV-100-*1**-20	100.0 (6.10)	100.0 (26.5)	120.0 (31.8)	150.0 (39.7)	180.0 (47.6)	20 ~ 70	(286 ~ 1000)	70	(1000)	500	2000	58.0 (129.0)
PV-100-*3**-20						20 ~ 210	(286 ~ 3000)	210	(3000)			
PV-100-*4**-20						20 ~ 280	(286 ~ 4000)	280	(4000)			



PERFORMANCE DATA

HV-38-A4-**-20



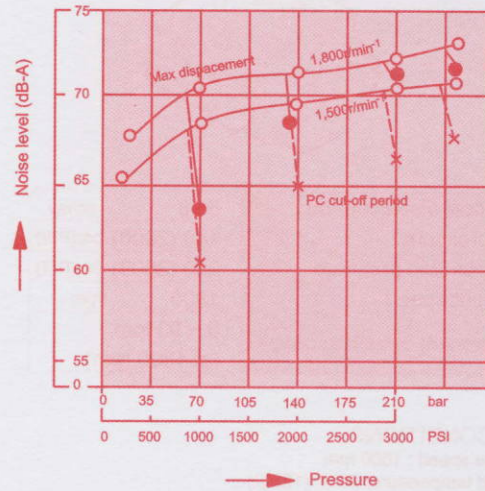
Theoretical displacement	37.7	cc/rev
Rated pressure	175 (2500)	bar(PSI)
Max. operating pressure	250 (3575)	bar(PSI)
Max. input speed	1800	rpm
Displacement adjusting range	28 ~ 68 lpm	(at 1800 rpm)

CONDITIONS:

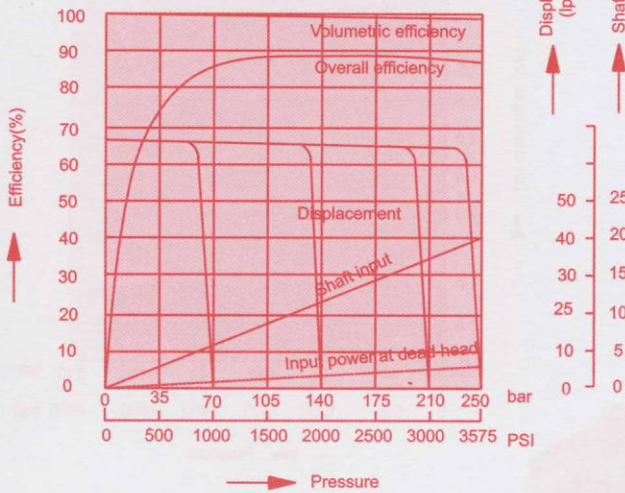
Drive speed : 1800 rpm
 Fluid temperature: 50 °C (122 °F)
 Hydraulic Oil: ISO VG32

● ... 1800 rpm PC Cut-off period
 × ... 1500 rpm PC Cut-off period

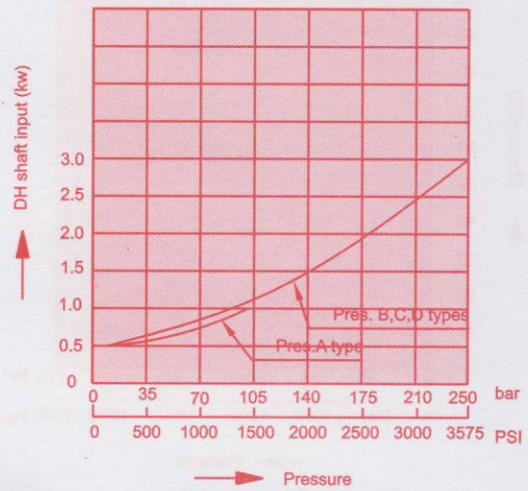
NOISE LEVEL



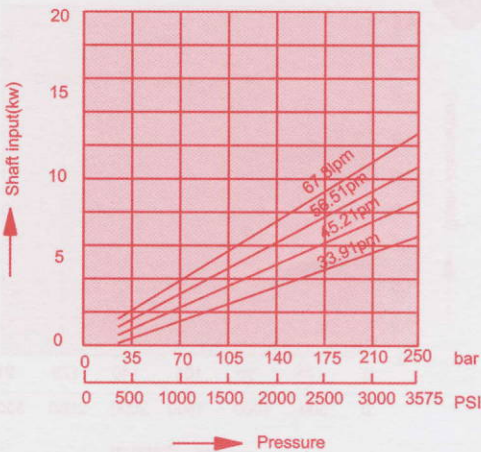
Efficiency Curves



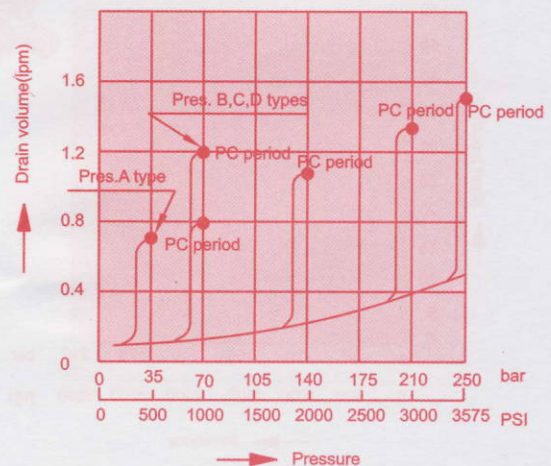
Input Power at Full Cut-off



Input Power Curves



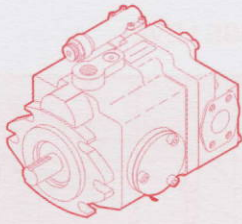
Drain Curve



B

PERFORMANCE DATA

HV-50-A4-**-20



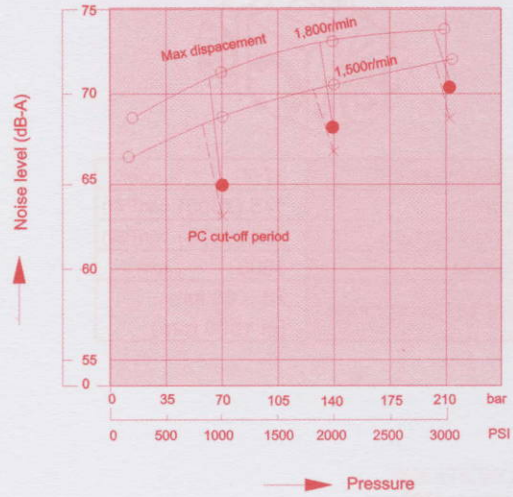
Theoretical displacement	51.6	cc/rev
Rated pressure	140 (2000)	bar(PSI)
Max. operating pressure	210 (3000)	bar(PSI)
Max. input speed	1800	rpm
Displacement adjusting range	0 ~ 93 lpm	(at 1800 rpm)

CONDITIONS:

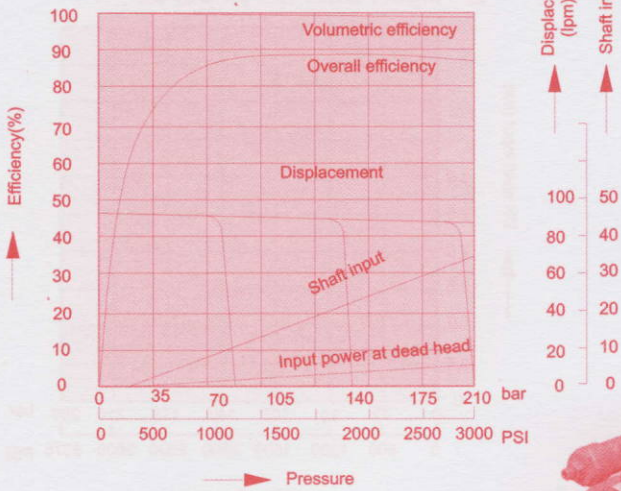
Drive speed : 1800 rpm
 Fluid temperature: 50°C (122°F)
 Hydraulic Oil: ISO VG32

● ... 1800 rpm PC Cut-off period
 × ... 1500 rpm PC Cut-off period

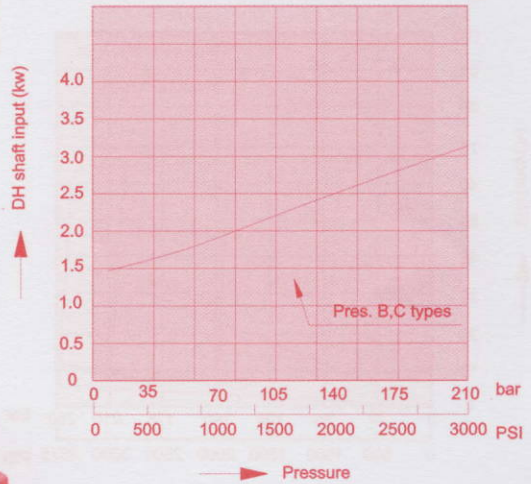
NOISE LEVEL



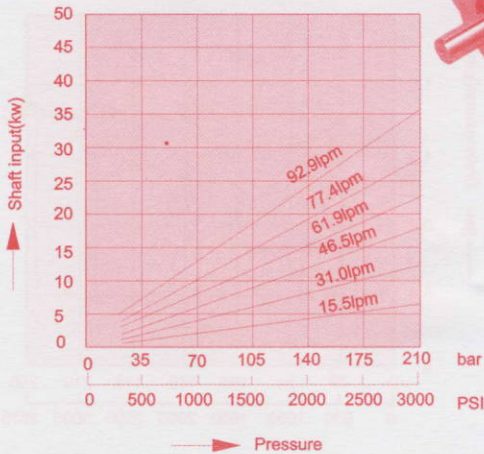
Efficiency Curves



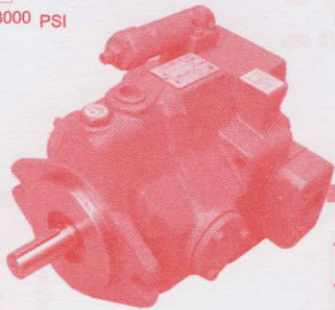
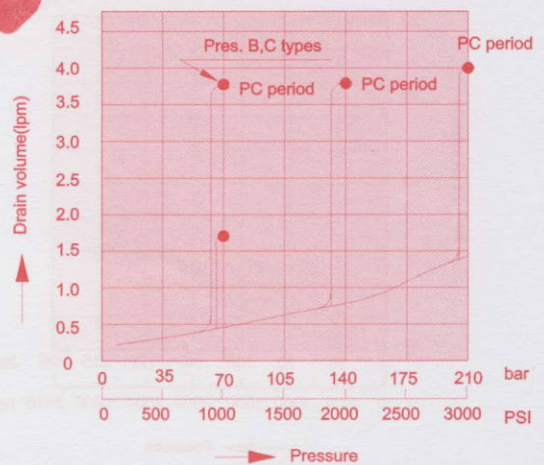
Input Power at Full Cut-off



Input Power Curves



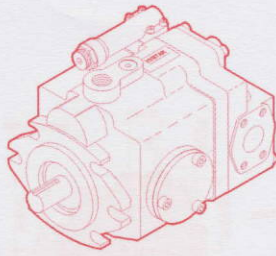
Drain Curve





PERFORMANCE DATA

HV-70-A4-**-20

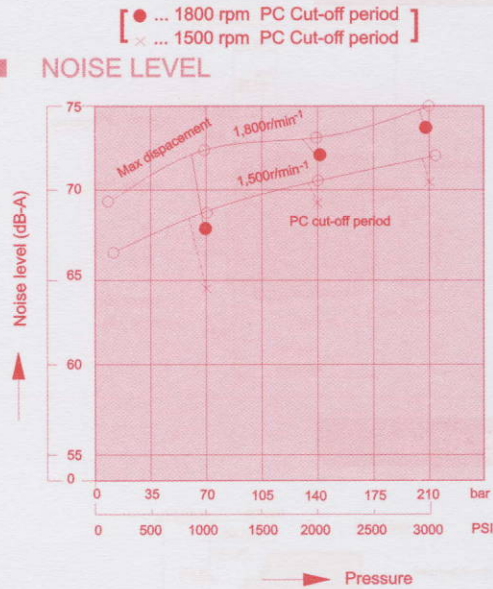


Theoretical displacement	69.8	cc/rev
Rated pressure	140 (2000)	bar(PSI)
Max. operating pressure	210 (3000)	bar(PSI)
Input speed	500 ~ 2200	rpm
Displacement adjusting range	20 ~ 126	lpm (at 1800 rpm)

CONDITIONS:

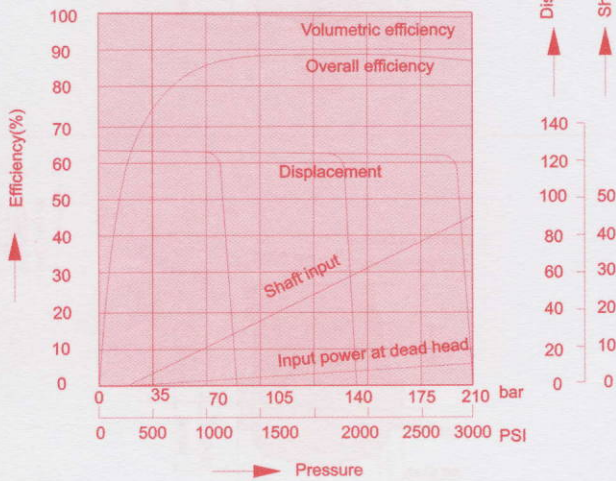
Drive speed : 1800 rpm
 Fluid temperature: 50 °C (122 °F)
 Hydraulic Oil: ISO VG32

NOISE LEVEL

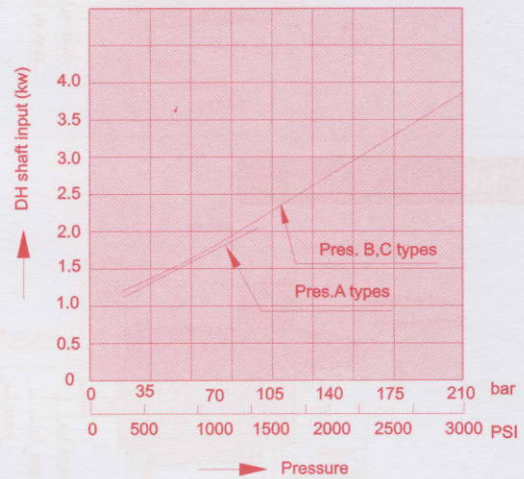


B

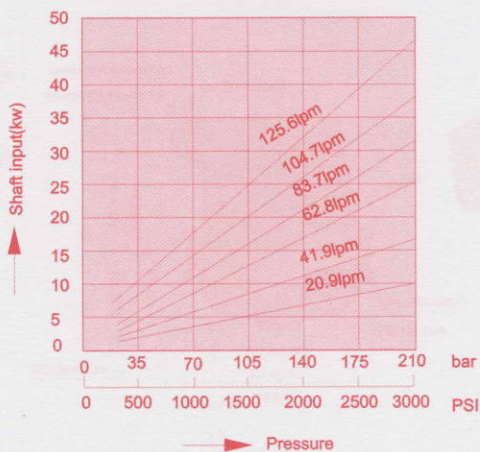
Efficiency Curves



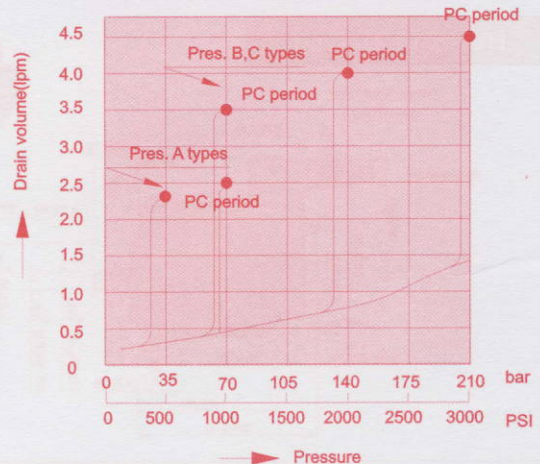
Input Power at Full Cut-off



Input Power Curves



Drain Curve



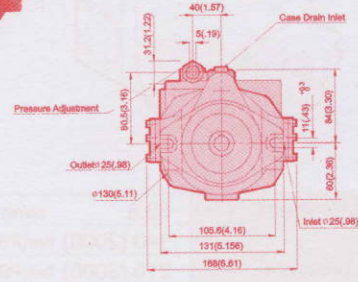
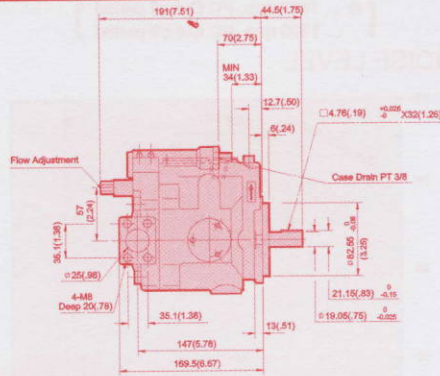
DIMENSIONS

MILLIMETERS(INCHES)

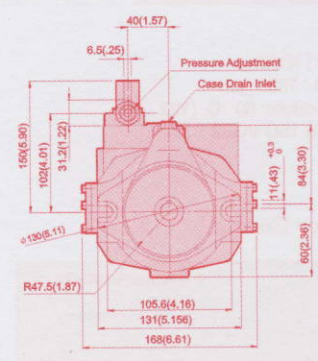
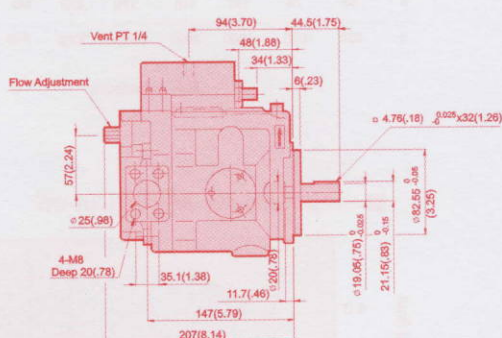
B

HV-15/18 A-Type

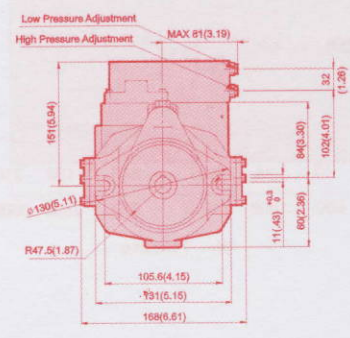
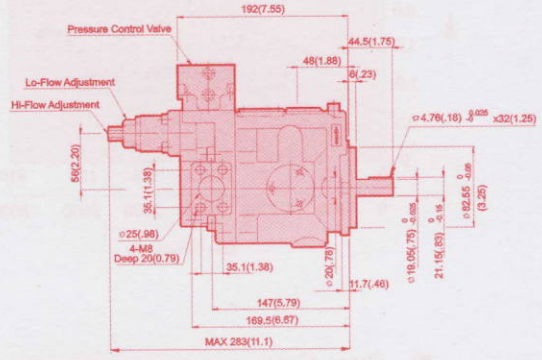
Side Port-Standard



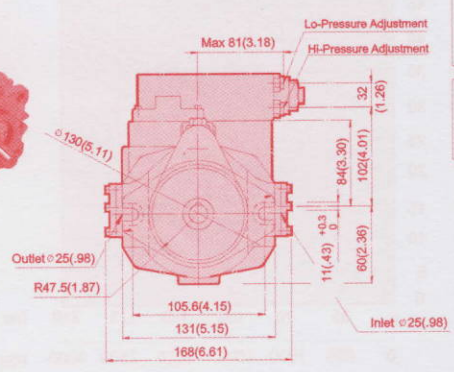
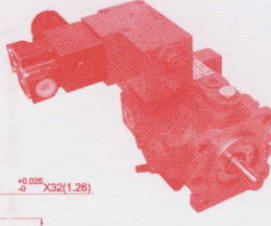
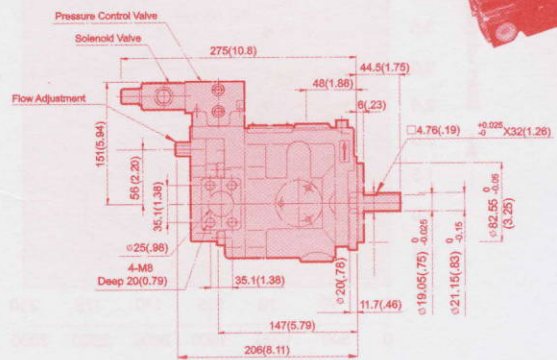
HV-15/18 B-Type



HV-15/18 C-Type



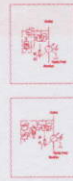
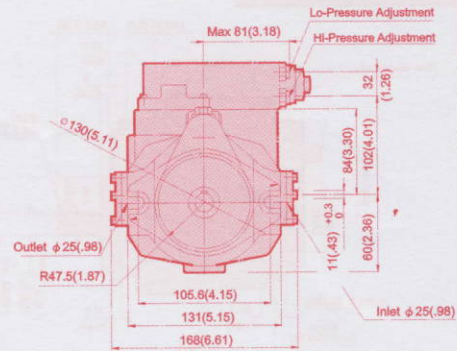
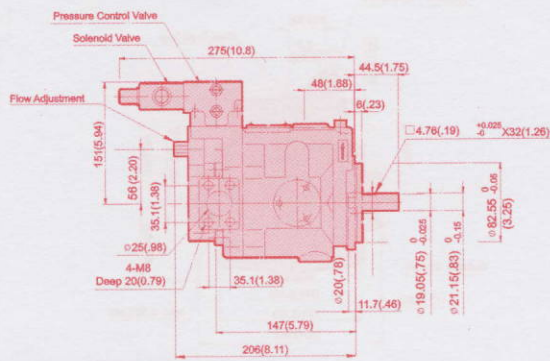
HV-15/18 D-Type



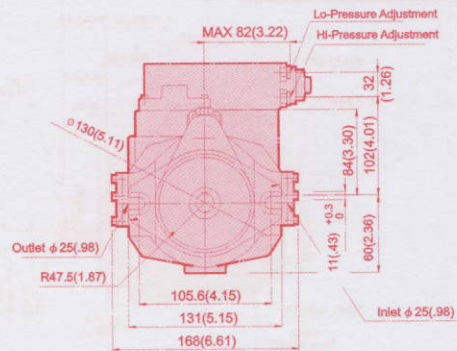
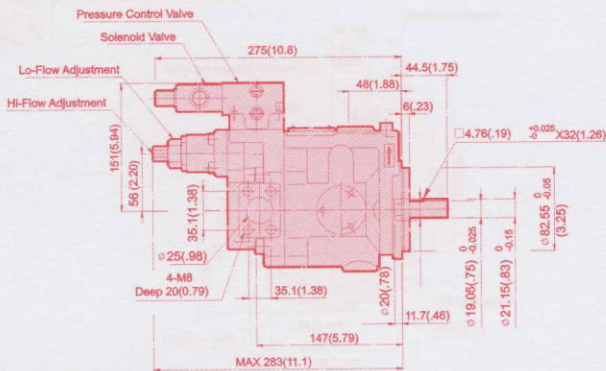


B

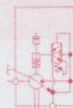
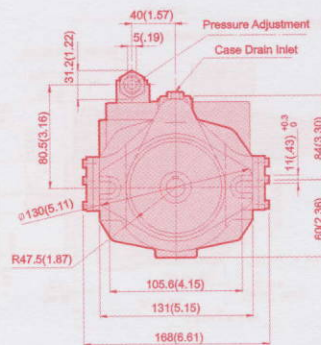
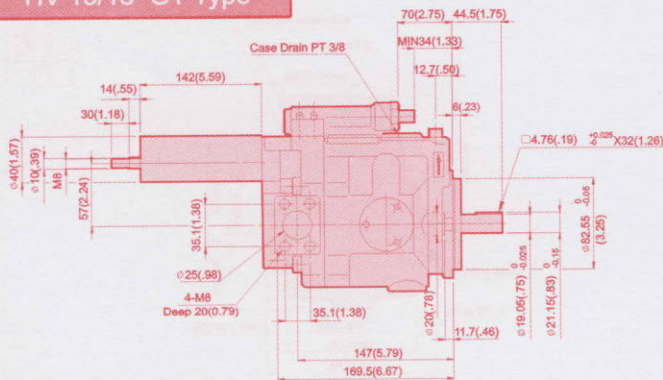
HV-15/18 E-Type



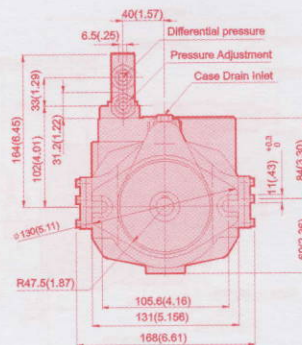
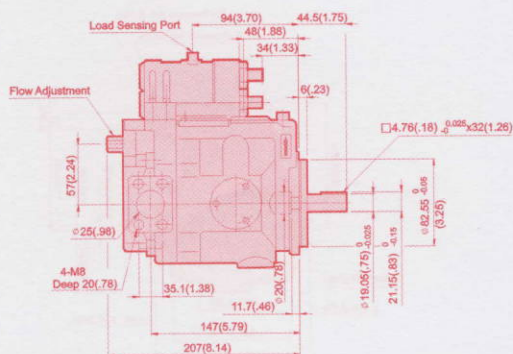
HV-15/18 F-Type



HV-15/18 G1-Type

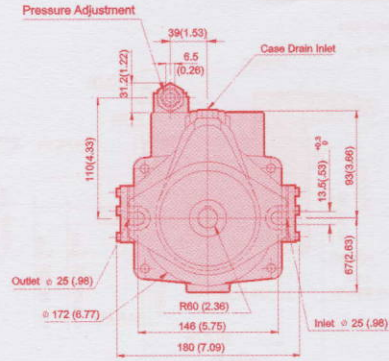
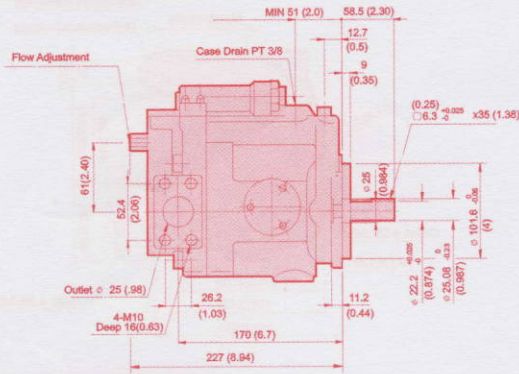


HV-15/18 HL-Type

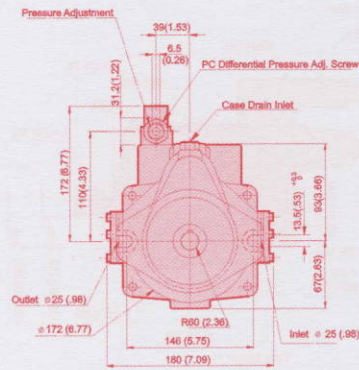
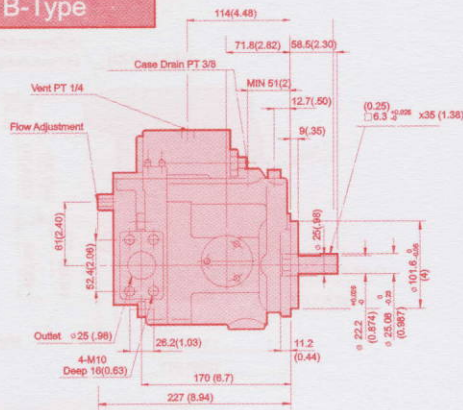


HV-23 A-Type

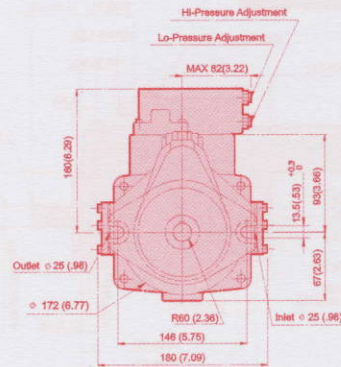
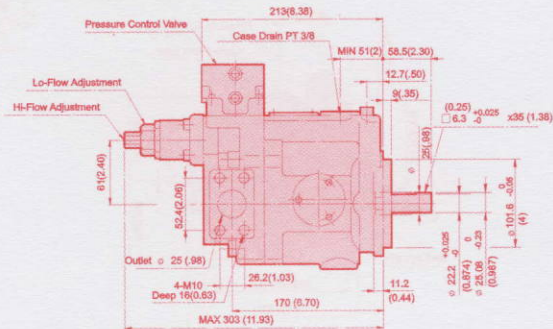
Side Port-Standard



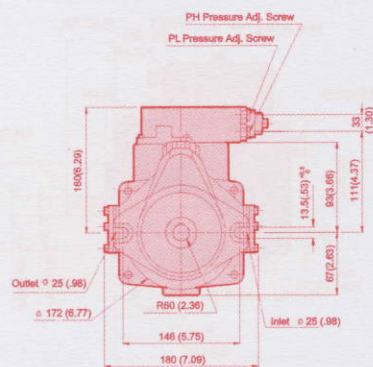
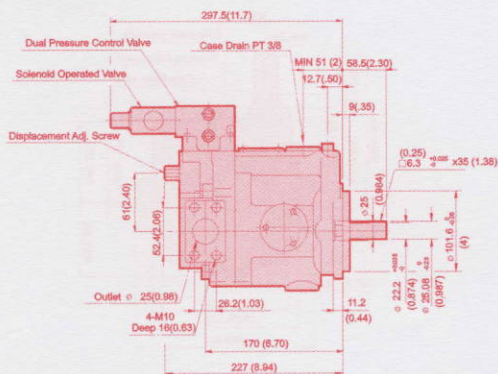
HV-23 B-Type



HV-23 C-Type



HV-23 D/E-Type



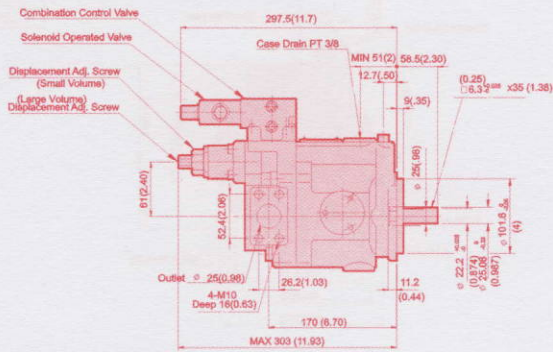


DIMENSIONS

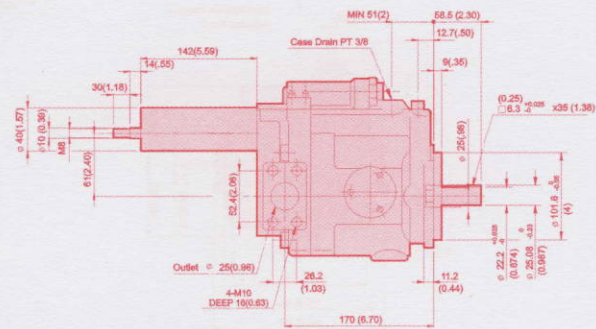
MILLIMETERS(INCHES)

B

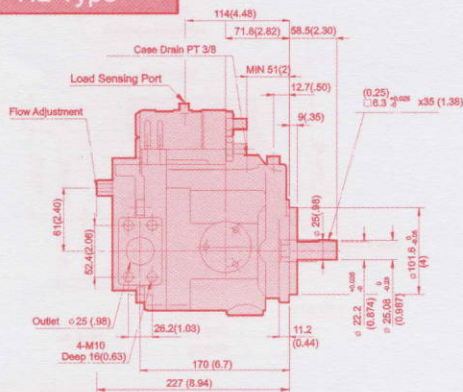
HV-23 F-Type



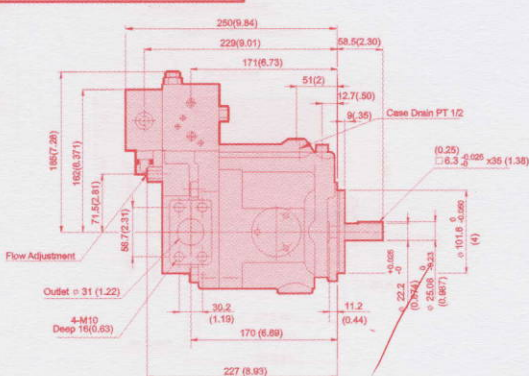
HV-23 G1-Type



HV-23 HL-Type



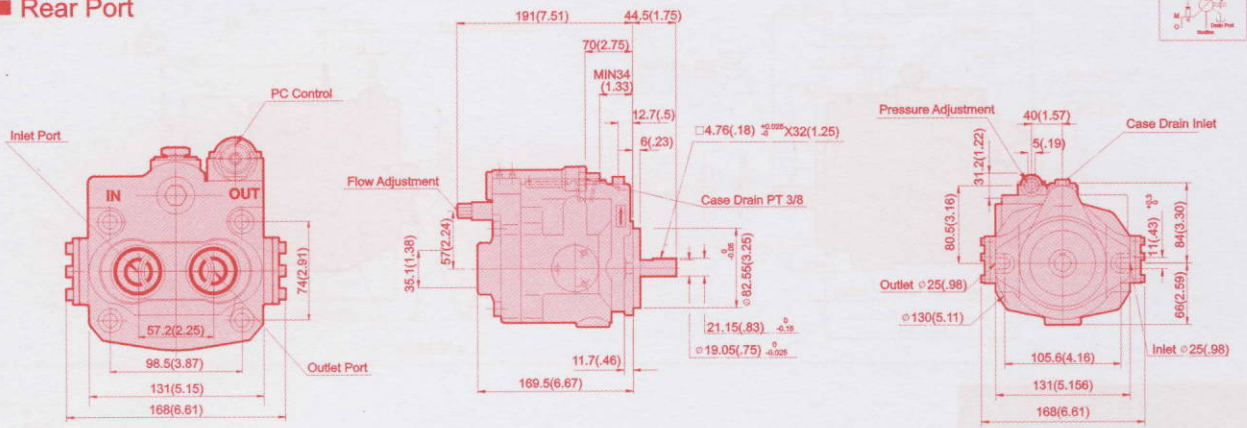
HV-23 HJ-Type



B

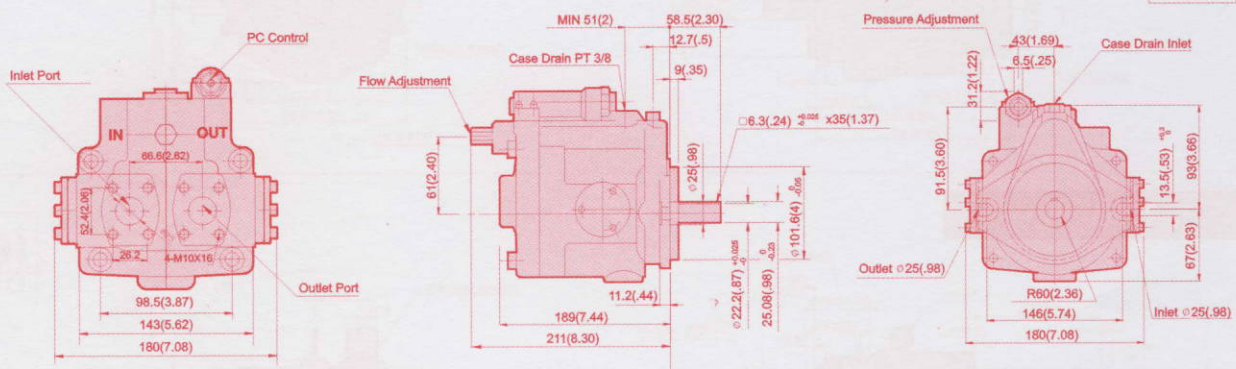
HV-15/18

■ Rear Port



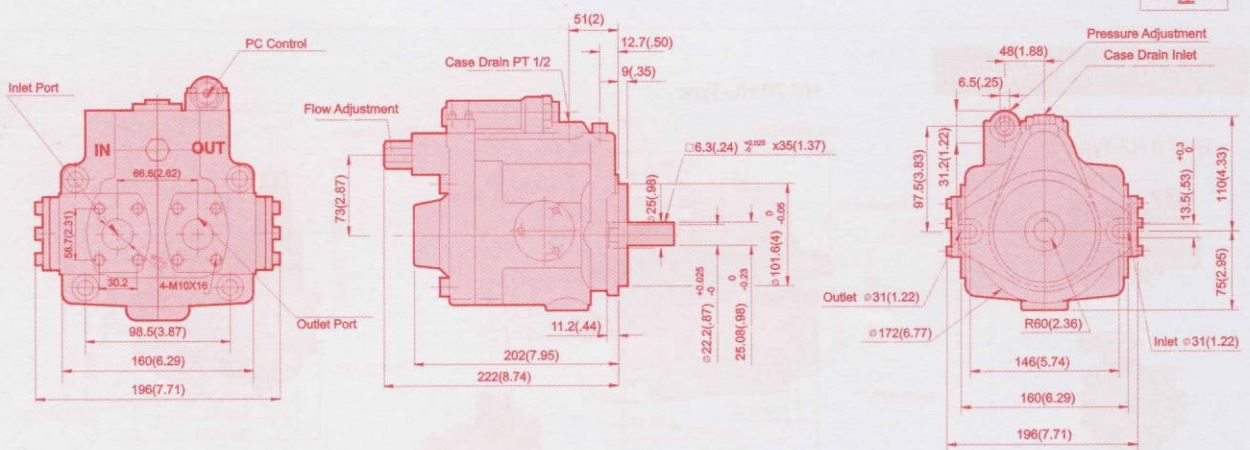
HV-23

■ Rear Port



HV-38

■ Rear Port





HV Double Piston Pump

MODEL	HV15+15	HV23+23	HV15+38	HV23+38	HV38+38	HV15+70	HV23+70	HV38+70
A	3/8- PT	3/8- PT	3/8- PT	3/8- PT	1/2- PT	3/8- PT	3/8- PT	1/2- PT
B	3/8- PT	3/8- PT	1/2- PT	1/2- PT	1/2- PT	3/4- PT	3/4- PT	3/4- PT
C	57	61	57	61	73	57	61	73
D	35.1	52.4	35.1	52.4	58.7	35.1	52.4	58.7
E	35.1	26.2	35.1	26.2	30.2	35.1	26.2	30.2
F	35.1	52.4	58.7	58.7	58.7	69.9	69.9	69.9
G	35.1	26.2	30.2	30.2	30.2	35.7	35.7	35.7
H	M8x20	M10x16	M8x20	M10x16	M10x16	M8x20	M10x16	M10x16
I	M8x20	M10x16	M10x16	M10x16	M10x16	M12x20	M12x20	M12x20
J	147	170	147	170	170	147	170	179
K	147	170	179	179	179	256.5	256.5	256.5
L	335	393	373	404	413	447	470	479
M	381	443	419	454	465	493	520	531
N	34	51	34	34	51	34	51	51
O	34	51	51	51	51	73	73	73
P	6	9	9	9	9	10	10	10
Q	4.76x32	6.5x35	6.5x35	6.5x35	6.5x35	7.94x38	7.94x38	7.94x38
R	13	13	13	13	13	18.5	18.5	18.5
S	∅19.05	∅22.22	∅22.22	∅22.22	∅22.22	∅31.75	∅31.75	∅31.75
T	21.15	25.08	25.08	25.08	25.08	35.35	35.35	35.35
U	∅82.55	∅101.6	∅101.6	∅101.6	∅101.6	∅127	∅127	∅127
V	∅24	∅25	∅31	∅31	∅31	∅40	∅40	∅40
W	∅24	∅25	∅31	∅31	∅31	∅40	∅40	∅40
X	106	146	146	146	146	181	181	181
Y	131	145.5	160	160	160	208	208	208
Z	168	180	196	196	196	260.5	260.5	260.5
AA	40	39	39	39	39	74	74	74
AB	31.2	31.2	31.2	31.2	31.2	40	40	40
AC	5	5	5	5	5	8	8	8
AD	80.5	110	121	121	121	119	119	119
AE	11	13.5	13.5	13.5	13.5	18	18	18
AF	44.5	58.5	58.5	58.5	58.5	57	57	57

DIMENSIONS

MILLIMETERS(INCHES)

