

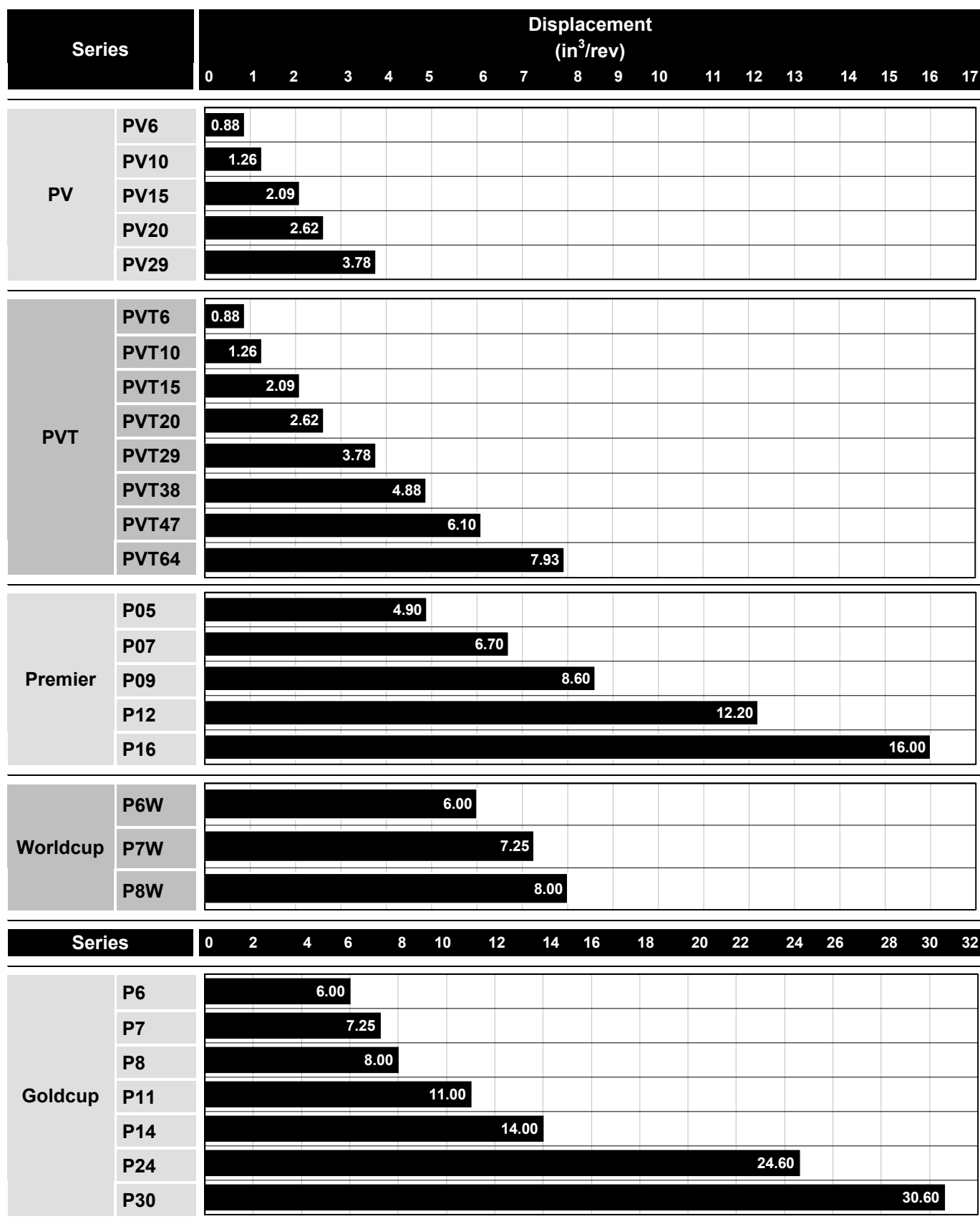
1. Axial Piston Pumps

Series	Model	Maximum Operating Pressure	Maximum Displacement	Remarks	Page
		PSI	ln ³ /rev		
PV & PVM	PV6	4500	0.88	• Threaded rear ports. • PV : Industrial • PVM : Mobile (high speed)	1 - 4
	PV10	4500	1.26		
	PV15	4500	2.09		
	PV20, PVM20 ¹	4500	2.62		
	PV29	4000	3.78		
PVT & PVR	PVT6	4500	0.88	• Open loop. • Side ports, SAE 4 bolts. • Optional rear drive. • PVT : Industrial • PVR : Mobile (high speed)	1 - 6
	PVT10	4500	1.26		
	PVT15	4500	2.09		
	PVT20, PVR20 ¹	4500	2.62		
	PVT29	4000	3.78		
	PVT38	4350	4.88		
	PVT47	4350	6.10		
	PVT64	4350	7.93		
Premier	P05	7200	4.90	• Open loop. • Metric dimensions. • Optional rear drive (full torque capability).	1 - 10
	P07	7200	6.70		
	P09	7200	8.60		
	P12	7200	12.20		
	P16	7200	16.00		
Worldcup	P6W	6000	6.00	• Open loop. • Optional rear drive.	1 - 14
	P7W	6000	7.25		
	P8W	4500	8.00		
Goldcup	P6	6000	6.00	• Transmission pumps. • Integrated package. • Optional rear drive (full torque capability). • Other versions² available.	1 - 16
	P7	6000	7.25		
	P8	4500	8.00		
	P11	6000	11.00		
	P14	6000	14.00		
	P24	5000	24.60		
	P30	5000	30.60		

¹ Higher speed capability : consult Denison Hydraulics.

² Open loop (P6V, P7V, P11V, P14V) : consult Denison Hydraulics.
Fixed displacement (P6F, P7F, P8F) : consult Denison Hydraulics.

Axial Piston Pumps - Product Range Overview

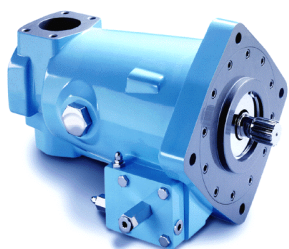


Size	Maximum Pressure ¹			Maximum speed ² <i>rpm</i>	Weight <i>lbs.</i>	Mounting	Page
	Intermittent	Continuous	Case				
	<i>PSI</i>	<i>PSI</i>	<i>PSI</i>				
PV6	4500	3500	10	3000	24	SAE-A - 2 bolts	1 - 4
PV10	4500	3500	10	2800	35	SAE-B - 2 bolts	
PV15	4500	3500	10	2500	44	SAE-B - 2 bolts	
PV20	4500	3500	10	2300 ³	57	SAE-C - 2 bolts	
PV29	4000	3000	10	2300	73	SAE-C - 2 bolts	
PVT6	4500	3500	10	3000	31	SAE-A - 2 bolts	1 - 6
PVT10	4500	3500	10	2800	44	SAE-B - 2 bolts	
PVT15	4500	3500	10	2500	55	SAE-B - 2 bolts	
PVT20	4500	3500	10	2300 ³	71	SAE-C - 2 bolts	
PVT29	4000	3000	10	2300	93	SAE-C - 2 bolts	
PVT38	4300	4000	7	1800	110	SAE-C - 4 bolts	
PVT47	4300	4000	7	1800	157	SAE-C - 4 bolts	
PVT64	4300	4000	7	1800	209	SAE-D - 4 bolts	
P05	7200	6000	25	2550	157	SAE-D - 4 bolts	1 - 10
P07	7200	6000	25	2450	176	SAE-D - 4 bolts	
P09	7200	6000	25	2300	221	SAE-D - 4 bolts	
P12	7200	6000	25	2100	300	SAE-E - 4 bolts	
P16	7200	6000	25	1850	324	SAE-E - 4 bolts	
P6W	6000	5000	25	2050	179	SAE-D - 4 bolts	1 - 14
P7W	6000	5000	25	1950	179	SAE-D - 4 bolts	
P8W	4500	4500	25	1800	179	SAE-D - 4 bolts	
Size	PSI	PSI	PSI	rpm	Lbs.	Mounting	Page
P6	6090	5000	75	3000	154	SAE-C - 2 bolts, SAE-D - 4 bolts	1 - 16
P7	6090	5000	75	3000	154	SAE-C - 2 bolts, SAE-D - 4 bolts	
P8	4500	3600	75	2100	154	SAE-C - 2 bolts, SAE-D - 4 bolts	
P11	6000	5000	75	2400	300	SAE-E - 4 bolts	
P14	6000	5000	75	2400	300	SAE-E - 4 bolts	
P24	5000	5000	75	2100	650	SAE-F - 4 bolts	
P30	5000	5000	75	1800	670	SAE-F - 4 bolts	

¹ For use with mineral oil. Other fluids, consult Denison Hydraulics.

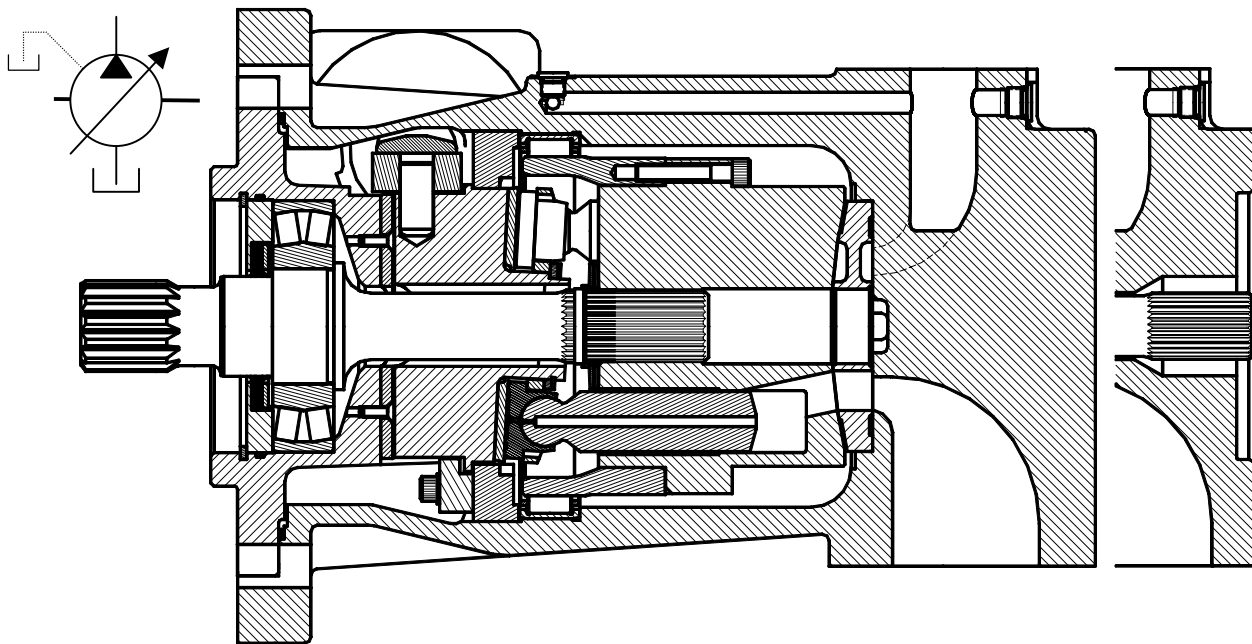
² At atmospheric inlet pressure (15 PSI absolute). For higher speed operation, consult Denison Hydraulics.

³ PVM20, PVR20 : 2600 rpm.



Premier Series for open circuits

P05 -	4.90 in ³ /rev, 7250 PSI
P07 -	6.70 in ³ /rev, 7250 PSI
P09 -	8.60 in ³ /rev, 7250 PSI
P12 -	12.20 in ³ /rev, 7250 PSI
P16 -	16.00 in ³ /rev, 7250 PSI



Key Sheet Example : P16Q-02R1C-C10-00

1. P16Q-02R1C-C10-00 Series

in ³ /rev	4.90	6.70	8.60	12.20	16.00
Series	P05	P07	P09	P12	P16Q ¹⁾

¹⁾ P16H : > 1800 rpm

2. P16Q-02R1C-C10-00 Shaft

Type	P05	P07	P09	P12	P16	Code
Keyed	SAE D / E	44-1	44-1	44-1	44-1	02
Splined	SAE D / E	44-4	44-4	44-4	44-4	03
	SAE F	-	-	-	50-4	05

3. P16Q-02R1C-C10-00 Rotation

CW	R
CCW	L

4. P16Q-02R1C-C10-00 Seal Class

Buna N : mineral oil	1
Viton : mineral oil & fire resistant fluid	5

5. P16Q-02R1C-C10-00 Design

6. P16Q-02R1C-C10-00 Primary control

Standard	C, E, H, J, K, L, R, V, W
PQ control	X

7. P16Q-02R1C-C10-00 Control Option

Standard	1, 2, 5, 8
LVDT	Consult DH

8. P16Q-02R1C-C10-00 Secondary control

None		0
Pressure compensator override		P
Torque limiter override	Low	J
	High	K

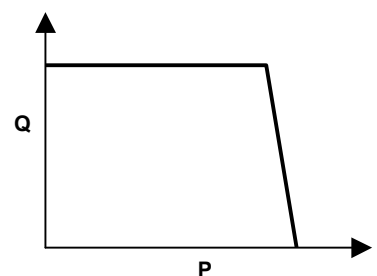
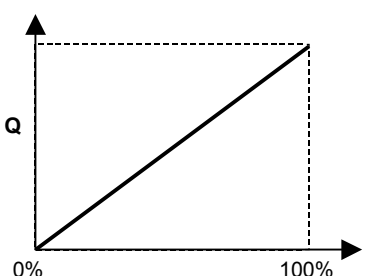
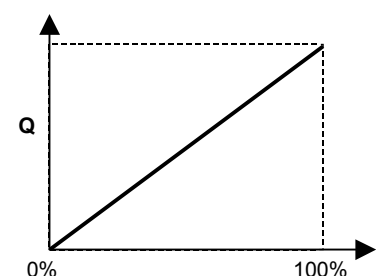
9. P16Q-02R1C-C10-00 Rear Drive

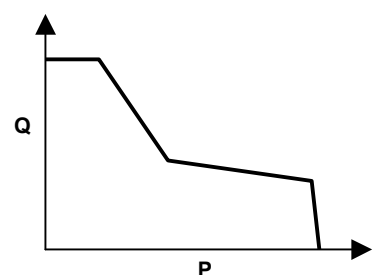
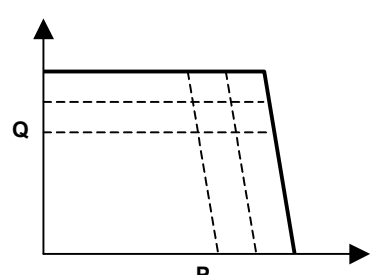
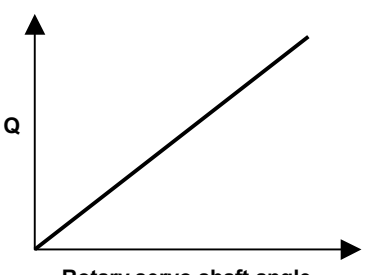
None		0
Plugged : rear adapter can be added later.		M
Rear Drives	SAE	A, B, C, D, E, G, Q, N
	ISO & DIN	L, R, S, T, U, V, W, X, Y, Z

10. P16Q-02R1C-C10-00 Rear pump

Rear pump not mounted	0
-----------------------	---

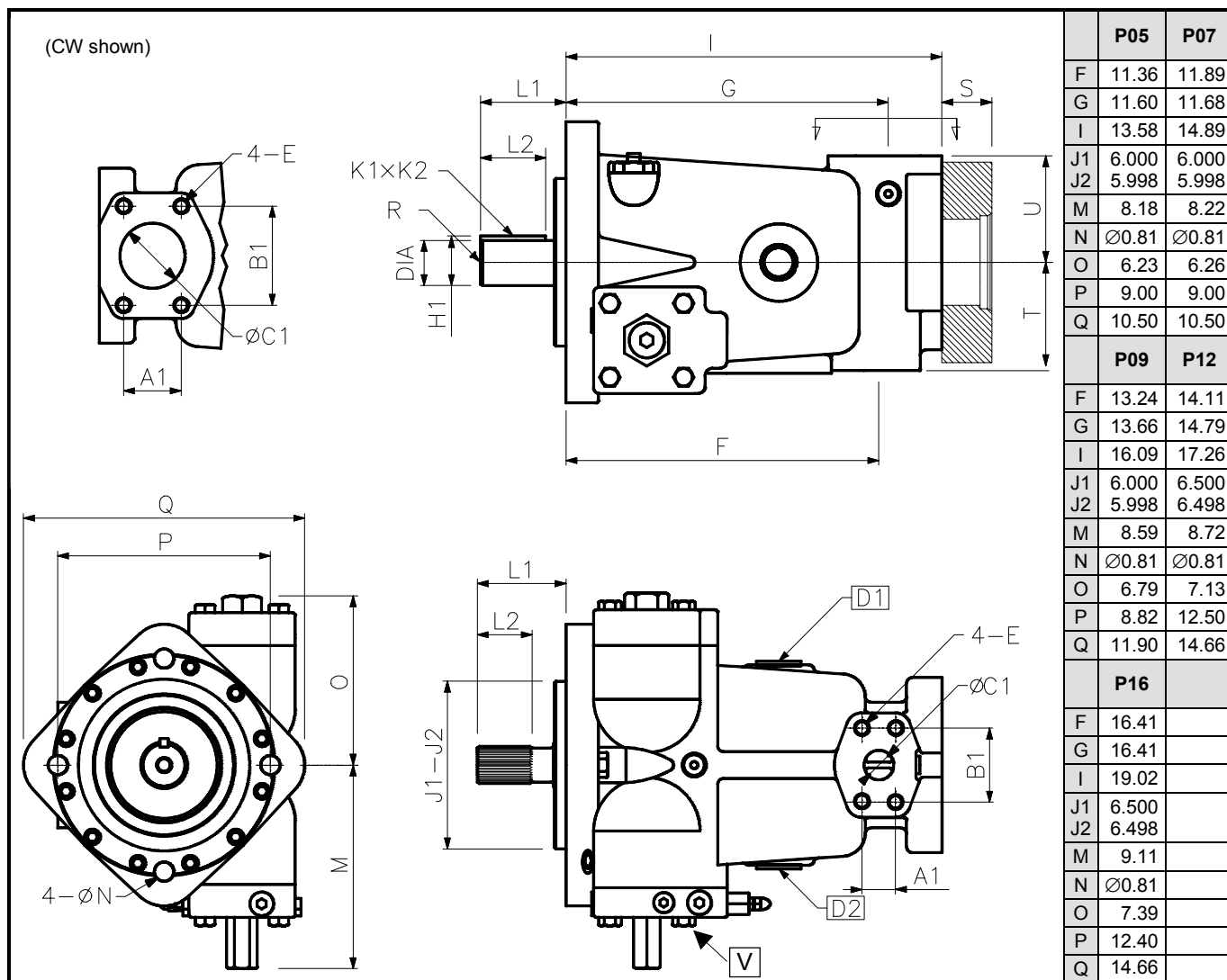
Controls(P16Q-02R1C-**E10**-00)

C Compensator	E Electric stroker	H Hydraulic stroker																																																															
																																																																	
Minimum compensating pressure : ... 245 PSI Minimum vent flow : 0.50 GPM Response Time (ms) : <table><tr><th></th><th>Off Stroke</th><th>On Stroke</th></tr><tr><td>• P05</td><td>.....60</td><td>.....110</td></tr><tr><td>• P07</td><td>.....70</td><td>.....130</td></tr><tr><td>• P09</td><td>.....60</td><td>.....110</td></tr><tr><td>• P12</td><td>.....90</td><td>.....150</td></tr><tr><td>• P16</td><td>.....100</td><td>.....150</td></tr></table>		Off Stroke	On Stroke	• P05	60	110	• P07	70	130	• P09	60	110	• P12	90	150	• P16	100	150	Servo (to be externally supplied) : • Pressure : 600 - 1500 PSI • flow : 5 - 20 GPM Control Signal (mA) : <table><tr><th></th><th>12 VDC</th><th>24 VDC</th></tr><tr><td></td><td>0% → 100%</td><td>0% → 100%</td></tr><tr><td>• P05</td><td>175.....273</td><td>350.....546</td></tr><tr><td>• P07</td><td>175.....276</td><td>350.....552</td></tr><tr><td>• P09</td><td>175.....283</td><td>350.....566</td></tr><tr><td>• P12</td><td>175.....295</td><td>350.....590</td></tr><tr><td>• P16</td><td>175.....300</td><td>350.....600</td></tr></table> Control card : S20-14078 (Jupiter)		12 VDC	24 VDC		0% → 100%	0% → 100%	• P05	175.....273	350.....546	• P07	175.....276	350.....552	• P09	175.....283	350.....566	• P12	175.....295	350.....590	• P16	175.....300	350.....600	Servo (to be externally supplied) : • Pressure : 600 - 1500 PSI • flow : 5 - 20 GPM Control Signal (PSI) : <table><tr><th></th><th>0%</th><th>→</th><th>100%</th></tr><tr><td>• P05</td><td>.....50</td><td></td><td>.....225</td></tr><tr><td>• P07</td><td>.....50</td><td></td><td>.....232</td></tr><tr><td>• P09</td><td>.....50</td><td></td><td>.....245</td></tr><tr><td>• P12</td><td>.....50</td><td></td><td>.....273</td></tr><tr><td>• P16</td><td>.....50</td><td></td><td>.....283</td></tr></table>		0%	→	100%	• P05	50		225	• P07	50		232	• P09	50		245	• P12	50		273	• P16	50		283
	Off Stroke	On Stroke																																																															
• P05	60	110																																																															
• P07	70	130																																																															
• P09	60	110																																																															
• P12	90	150																																																															
• P16	100	150																																																															
	12 VDC	24 VDC																																																															
	0% → 100%	0% → 100%																																																															
• P05	175.....273	350.....546																																																															
• P07	175.....276	350.....552																																																															
• P09	175.....283	350.....566																																																															
• P12	175.....295	350.....590																																																															
• P16	175.....300	350.....600																																																															
	0%	→	100%																																																														
• P05	50		225																																																														
• P07	50		232																																																														
• P09	50		245																																																														
• P12	50		273																																																														
• P16	50		283																																																														

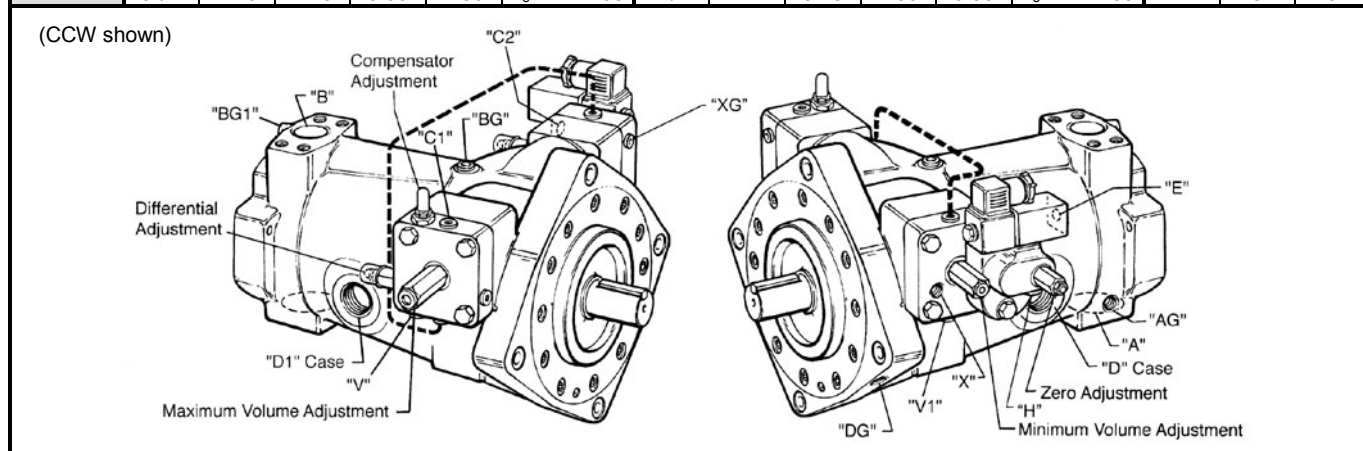
J / K Torque limiter (low / high)		V / W J / K + load sensing (low / high)		L Load sensing	R Rotary servo	
						
in-lb	J / V		K / W		Minimum compensating pressure :over pilot pressure : 200 PSI Differential pressure :350 - 450 PSI	Servo (to be supplied externally) : • Pressure : 600 - 1500 PSI • flow :5 - 20 GPM
P05	800	1500	3500			
P07	1100	1850	5300			
P09	1400	2200	6000			
P12	1850	3400	8000			
P16	2500	6000	10000			
Minimum compensating pressure : 250 PSI						

Allowable controls & options combinations(P16Q-02R1C-**E10**-00)

Control options	C Pressure compensator	E Electric stroker	H Hydraulic stroker	J Torque limiter (low)	K Torque limiter (high)	L Load sensing	R Rotary servo
1 - Standard maximum volume screw adjustment	C10	E10, E1J E1K, E1P	H10, H1J H1K, H1P	J10	K10	L10	R10, R1J R1K, R1P
2 - Handwheel maximum volume screw adjustment	C20	-	-	J20	K20	L20	-
5 - Standard maximum volume screw adjustment + angle indicator	C50	E50, E5J E5K, E5P	H50, H5J H5K, H5P	J50	K50	L50	R50, R5J R5K, R5P
8 - Handwheel maximum volume screw adjustment + angle indicator	C80	-	-	J80	K80	L80	-



Ports	A - Inlet SAE-61 / 3000 psi						B - Outlet SAE-62 / 6000 psi						D1/D2	V	X
	Size	Dimensions				Threads	Size	Dimensions				Threads	Drain	Vent	Servo
		A1	B1	Ø C1	U	E		A1	B1	Ø C1	T	E			
P05	2 1/2"	2.00	3.50	2.50	4.37	1/2-13 x 1.19	1 1/4"	1.25	2.63	1.25	4.37	1/2-13 x 1.19	12	8	6
P07	3"	2.44	4.19	3.00	4.37	1/2-13 x 1.19	1 1/4"	1.25	2.63	1.25	4.52	1/2-13 x 1.19	16	8	6
P09	3"	2.44	4.19	3.00	4.50	5/8-11 x 1.50	1 1/2"	1.44	3.13	1.50	4.83	5/8-11 x 1.50	20	8	8
P12	3 1/2"	2.76	4.75	3.50	4.50	5/8-11 x 1.38	1 1/2"	1.44	3.13	1.50	5.37	5/8-11 x 1.50	24	8	8
P16	3 1/2"	2.76	4.75	3.50	4.50	5/8-11 x 1.38	1 1/2"	1.44	3.13	1.50	5.50	5/8-11 x 1.38	24	8	8



Input Shafts (P16Q-02R1C-C10-B0)

Shafts		Availability & Torque limits (in-lbs.)					Dimensions					
		P05	P07	P09	P12	P16	L1	L2	DIA	K1 x K2	H1	R
02	Keyed SAE 44-1 (D/E)	11300	15924	19800	20250	20250	2.94	1.75	1.7500 - 1.7494	0.437 x 0.437	1.943	³ / ₈ -16x0.65
03	Splined SAE 44-4 (D)	11300	15924	19800			2.94	1.62	Side fit, 30° angle, 8/16 pitch - 13 teeth			³ / ₈ -16x0.65
	Splined SAE 44-4 (E)				25000	25000	2.94	1.50	Side fit, 30° angle, 8/16 pitch - 13 teeth			³ / ₈ -16x0.65
05	Splined SAE 50-4 (F)					38800	3.44	2.21	Side fit, 30° angle, 8/16 pitch - 15 teeth			³ / ₈ -16x0.65

Rear Drives & Selection Table..... (P16Q-02R1C-C10-B0)

Series	None / Plugged	SAE Mounting & Coupling								ISO Mounting & Coupling									
		A	A	B	B	C	C	D	E	100B4	125B4	160B4	180B4	180B4	180B4	180B4	200B4	224B4	250B4
		A	B	B	BB	C	CC	D	D	K25N	K32N	K40N	K40N	K50N	DIN40	DIN50	K50N	K50N	K50N
P05	0 / M	A	G	B	Q	C	N	D	-	Z	Y	X	T	-	L	-	-	-	-
P07	0 / M	A	G	B	Q	C	N	D	-	Z	Y	X	T	-	L	-	-	-	-
P09	0 / M	A	G	B	Q	C	N	D	-	Z	Y	X	T	U	L	S	W	-	-
P12	0 / M	A	G	B	Q	C	N	D	E	Z	Y	X	T	U	L	S	W	-	-
P16	0 / M	A	G	B	Q	C	N	D	E	Z	Y	X	T	U	L	S	W	-	V
S (in)	- / 0.88	1.63	1.63	2.13	2.13	2.19	2.62	4.44	4.44	2.13	2.63	4.44	4.44	4.44	4.44	4.44	4.44	-	4.44

Rear Pump			Front Pump						
Series	Ordering Code		P05	P07	P09	P12	P16	Ordering Code	
-	None	None (rear plugged)	●	●	●	●	●	P♦♦♦♦♦♦♦♦♦♦-♦♦♦-00 / ...-M0	
P05	P05-03R♦♦♦-...		●	●	●	●	●	P♦♦♦♦♦R♦♦♦♦♦-D0	
P07	P07-03R♦♦♦-...			●	●	●	●	P♦♦♦♦♦R♦♦♦♦♦-D0	
P09	P09-03R♦♦♦-...				●	●	●	P♦♦♦♦♦R♦♦♦♦♦-D0	
P12	P12-03R♦♦♦-...					●	●	P♦♦♦♦♦R♦♦♦♦♦-E0	
P16	P16Q-03R♦♦♦-...						●	P♦♦♦♦♦R♦♦♦♦♦-E0	
PV/PVT6	PV/PVT6-1R♦♦♦-...		●	●	●	●	●	P♦♦♦♦♦R♦♦♦♦♦-G0	
PV/PVT10	PV/PVT10-1R♦♦♦-...		●	●	●	●	●	P♦♦♦♦♦R♦♦♦♦♦-B0	
PV/PVT15	PV/PVT15-1R♦♦♦-...		●	●	●	●	●	P♦♦♦♦♦R♦♦♦♦♦-B0	
	PV/PVT15-4R♦♦♦-...							P♦♦♦♦♦R♦♦♦♦♦-Q0	
PV/PVT20	PV/PVT20-1R♦♦♦-...		●	●	●	●	●	P♦♦♦♦♦R♦♦♦♦♦-C0	
PV/PVT29	PV/PVT29-1R♦♦♦-...		●	●	●	●	●	P♦♦♦♦♦R♦♦♦♦♦-C0	
PVT38	PVT38-1R♦♦♦-...		●	●	●	●	●	P♦♦♦♦♦R♦♦♦♦♦-N0	
PVT47	PVT47-1R♦♦♦-...			●	●	●	●	P♦♦♦♦♦R♦♦♦♦♦-D0	
PVT64	PVT64-1R♦♦♦-...				●	●	●	P♦♦♦♦♦R♦♦♦♦♦-D0	
TB	TB-♦♦♦♦-4R♦♦♦-...		●	●	●	●	●	P♦♦♦♦♦R♦♦♦♦♦-A0	
T6C	T6C-♦♦♦♦-3R♦♦♦-...		●	●	●	●	●	P♦♦♦♦♦R♦♦♦♦♦-B0	
	T6C-♦♦♦♦-4R♦♦♦-...							P♦♦♦♦♦R♦♦♦♦♦-Q0	
T6D/E	T6♦♦♦♦-3R♦♦♦-...		●	●	●	●	●	P♦♦♦♦♦R♦♦♦♦♦-C0	
T6CC	T6CC-♦♦♦♦-3R♦♦♦-...		●	●	●	●	●	P♦♦♦♦♦R♦♦♦♦♦-Q0	
	T6CC-♦♦♦♦-5R♦♦♦-...							P♦♦♦♦♦R♦♦♦♦♦-B0	
T6DC	T6DC-♦♦♦♦-3R♦♦♦-...		●	●	●	●	●	P♦♦♦♦♦R♦♦♦♦♦-C0	
T6EC/ED	T6♦♦♦♦-3R♦♦♦-...		●	●	●	●	●	P♦♦♦♦♦R♦♦♦♦♦-C0	
	T6♦♦♦♦-4R♦♦♦-...		●	●	●	●	●	P♦♦♦♦♦R♦♦♦♦♦-N0	
T6DCC	T6DCC-♦♦♦♦-3R♦♦♦-...		●	●	●	●	●	P♦♦♦♦♦R♦♦♦♦♦-C0	
T6EDCS	T6EDCS-♦♦♦♦-3R♦♦♦-...					●	●	P♦♦♦♦♦R♦♦♦♦♦-D0	
T7BS	T7BS-♦♦♦♦-3R♦♦♦-...		●	●	●	●	●	P♦♦♦♦♦R♦♦♦♦♦-B0	
	T7BS-♦♦♦♦-4R♦♦♦-...							P♦♦♦♦♦R♦♦♦♦♦-Q0	
T7BBS	T7BBS-♦♦♦♦-3R♦♦♦-...		●	●	●	●	●	P♦♦♦♦♦R♦♦♦♦♦-B0	
	T7BBS-♦♦♦♦-4R♦♦♦-...							P♦♦♦♦♦R♦♦♦♦♦-Q0	
T6H20♦	T6H20♦-♦♦♦♦-3R♦♦♦-...		●	●	●	●	●	P♦♦♦♦♦R♦♦♦♦♦-C0	
T6H29♦	T6H29♦-♦♦♦♦-3R♦♦♦-...		●	●	●	●	●	P♦♦♦♦♦R♦♦♦♦♦-C0	
Maximum Rear Torque (in-lbs.)			5650	7962	9900	13800	13600	P16 : 19400 in-lbs only with shafts 02, 06	