

AIVIO
HYDRAULICS



HYDRAULIC GEAR
PUMP & MOTOR
“PGP300 SERIES”



- **Three-piece cast iron construction**
High efficiency and long life in severe operating environments.
- **Low friction bushing**
Provides strength in heavy duty applications.
- **Balanced thrust plates**
Optimize pump efficiency.
- **Largest journal bearings available**
for high pressure and long life.

The PGP/PGM300 Series pumps and motors set the standard for superior performance and reliability in heavy-duty hydraulic application. The three-piece cast iron construction with large area, low-friction bushings provide strength, high efficiency, and long life in severe operating environments. The design includes an advanced thrust plate and seal configuration, which optimizes performance even in high temperature and low viscosity conditions.

PGP/PGM displacement and general specification

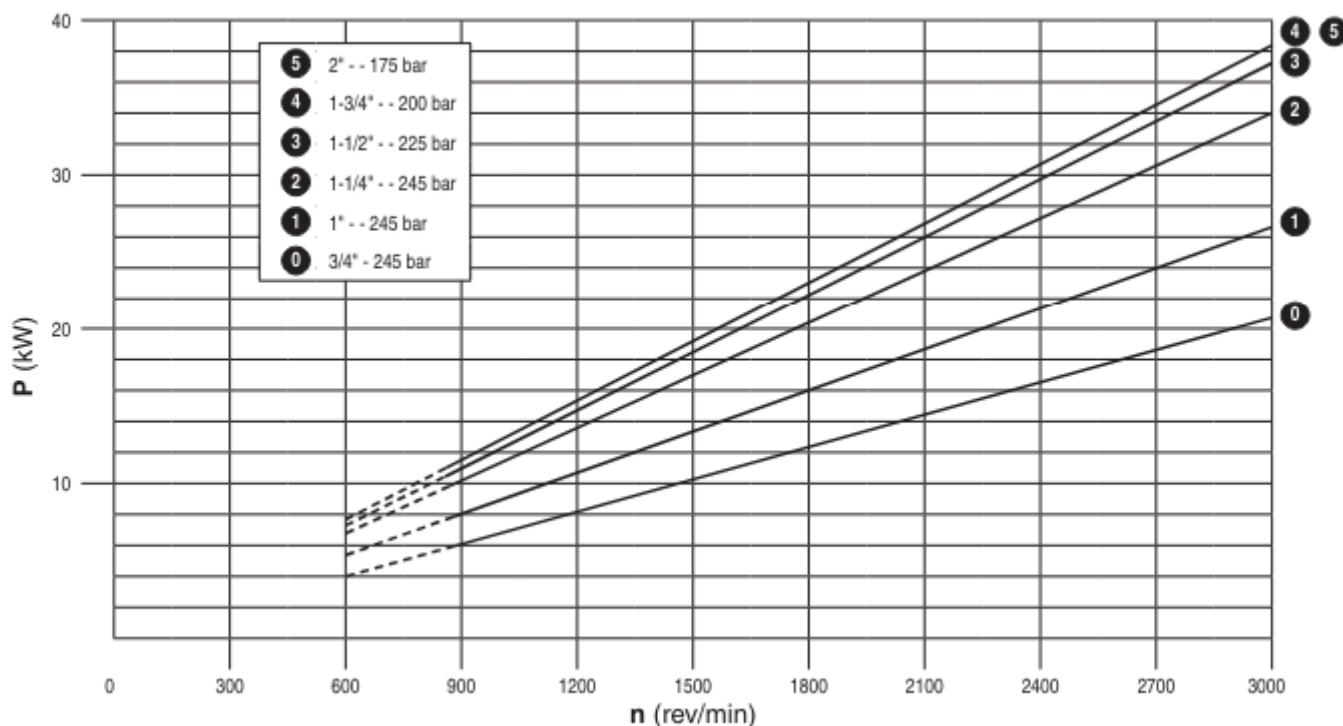
Frame size		05	07	10	12	15	17	20	22	25
315	Gear housing width	1.00"	1.25"	1.50"	1.75"	2.00"	2.25"	2.50"		
	Gear width	0.50"	0.75"	1.00"	1.25"	1.50"	1.75"	2.00"		
	displacement (cc/rev)	10.2	15.2	20.3	25.4	30.5	35.6	40.6		
	Max pressure (bar)	241	241	241	241	228	200	172		
	Max pressure (PSI)	3500	3500	3500	3500	3300	3000	3000		
	Max speed (rpm)	3000	3000	3000	3000	3000	3000	3000		
	Weight (kg.)	7.2	7.7	8.2	8.6	9.1	9.5	10		
330	Gear housing width	1.00"	1.25"	1.50"	1.75"	2.00"	2.25"	2.50"		
	Gear width	0.50"	0.75"	1.00"	1.25"	1.50"	1.75"	2.00"		
	displacement (cc/rev)	16.0	24.1	32.2	40.3	48.3	56.4	64.5		
	Max pressure (bar)	241	241	241	241	241	224	207		
	Max pressure (PSI)	3500	3500	3500	3500	3500	3250	3000		
	Max speed (rpm)	3000	3000	3000	3000	3000	3000	3000		
	Weight (kg.)	15.2	15.8	16.3	16.9	17.5	18.1	18.7		
350	Gear housing width	1.00"	1.25"	1.50"	1.75"	2.00"	2.25"	2.50"	2.75"	3.00"
	Gear width	0.50"	0.75"	1.00"	1.25"	1.50"	1.75"	2.00"	2.25"	2.50"
	displacement (cc/rev)	20.9	31.3	41.8	52.2	62.7	73.1	83.6	94.0	104.5
	Max pressure (bar)	241	241	241	241	241	224	207	190	172
	Max pressure (PSI)	3500	3500	3500	3500	3500	3250	3000	2750	2500
	Max speed (rpm)	2400	2400	2400	2400	2400	2400	2400	2400	2400
	Weight (kg.)	21.8	22.4	23.1	23.8	24.5	25.2	25.9	26.5	27.2
365	Gear housing width		1.25"	1.50"	1.75"	2.00"	2.25"	2.50"	2.75"	3.00"
	Gear width		0.75"	1.00"	1.25"	1.50"	1.75"	2.00"	2.25"	2.50"
	displacement (cc/rev)		44.3	59	73.8	88.5	103.3	118.0	132.8	147.5
	Max pressure (bar)		241	241	241	241	241	241	224	207
	Max pressure (PSI)		3500	3500	3500	3500	3500	3500	3250	3000
	Max speed (rpm)		2400	2400	2400	2400	2400	2400	2400	2400
	Weight (kg.)		24.3	25.4	26.5	27.7	28.8	30	31.1	32.2

Speed RPM	Output Flow	Gear Widths						
	Input Power	1/2"	3/4"	1"	1-1/4"	1-1/2"	1-3/4"	2"
900	GPM	2.0	3.2	4.4	5.5	6.7	7.9	9.0
	LPM	8	12	17	21	26	30	34
	HP	5	8	11	13	15	15	15
	kW	4	6	8	10	11	11	11
1200	GPM	2.8	4.4	6.0	7.6	9.2	10.7	12.2
	LPM	11	17	23	29	35	40	46
	HP	7	11	14	18	20	21	20
	kW	5	8	11	13	15	15	15
1500	GPM	3.6	5.6	7.7	9.6	11.6	13.5	15.4
	LPM	14	21	29	36	44	51	58
	HP	9	13	18	22	25	26	25
	kW	7	10	13	16	19	19	19
1800	GPM	4.4	6.8	9.3	11.6	14.0	16.3	18.6
	LPM	17	26	35	44	53	62	70
	HP	11	16	21	27	30	31	30
	kW	8	12	16	20	22	23	23
2100	GPM	5.2	8.1	10.9	13.6	16.4	19.1	21.8
	LPM	20	30	41	51	62	72	83
	HP	12	19	25	31	35	36	35
	kW	9	14	18	23	26	27	26
2400	GPM	6.0	9.3	12.5	15.6	18.8	21.9	25.1
	LPM	23	35	47	59	71	83	95
	HP	14	21	28	35	40	41	40
	kW	11	16	21	26	30	31	30
3000	GPM	7.7	11.7	15.7	19.6	23.7	27.6	31.5
	LPM	29	44	59	74	90	104	119
	HP	18	27	35	44	50	51	51
	kW	13	20	26	33	37	38	38

Performance data shown are the average results based on a series of laboratory tests of production units and are not necessarily representative of any one unit. Tests were run with the oil reservoir temperature at 120° F and viscosity 150 SUS at 100° F.

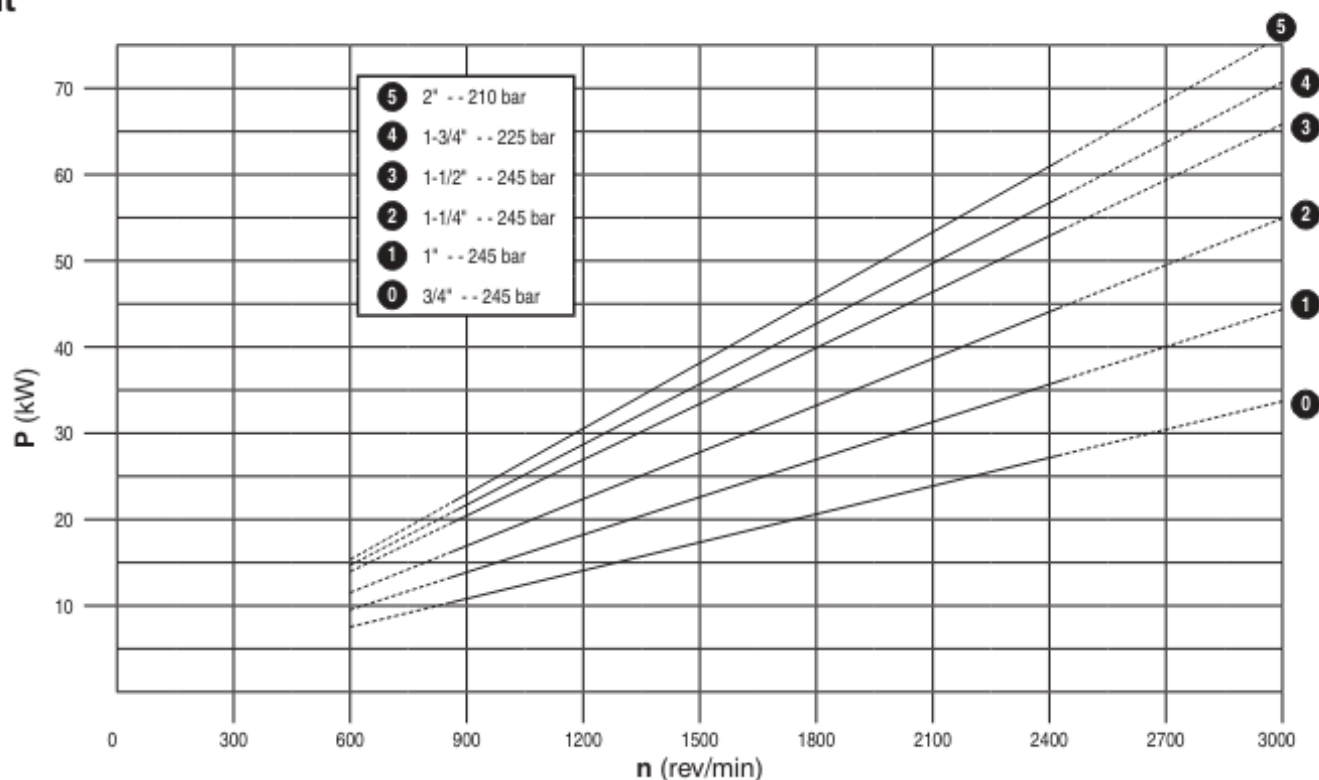
NOTE: Pump output flow is at the maximum rated pressure.

Input



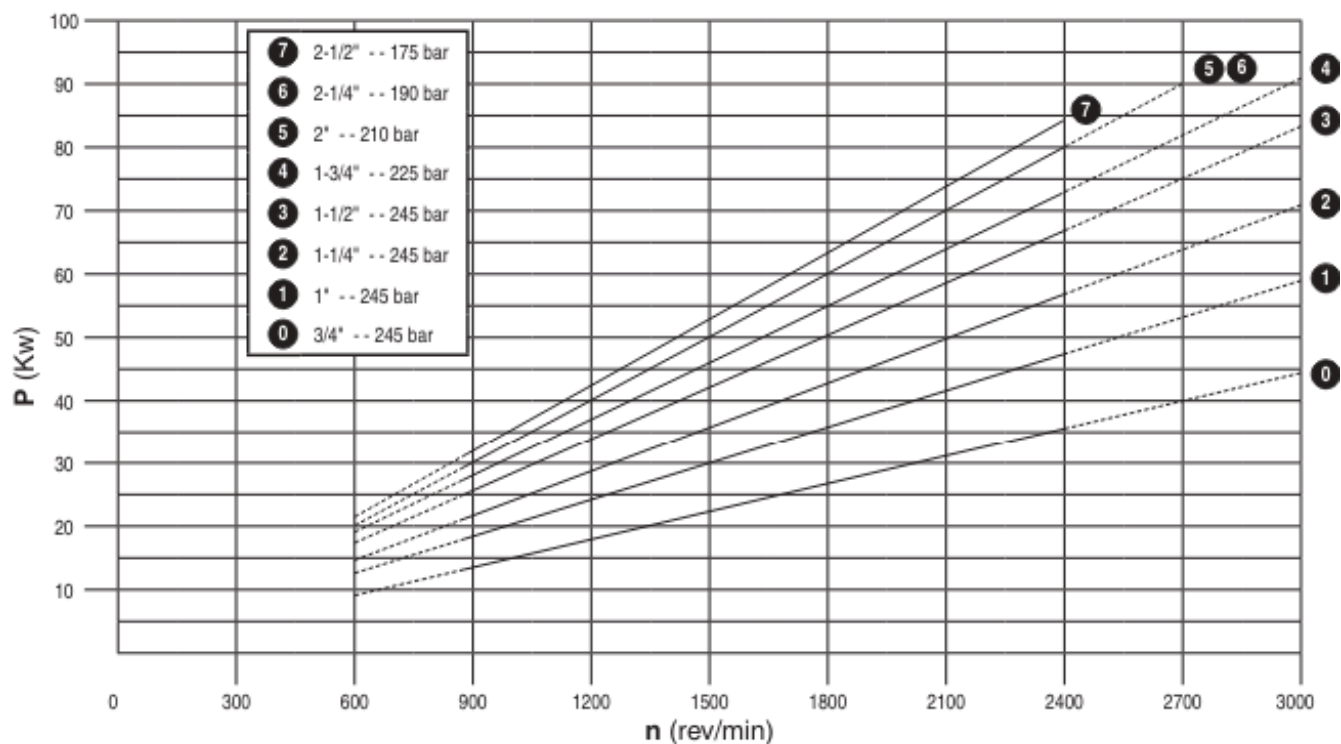
Speed RPM	Output Flow Input Power	Gear Widths						
		1/2"	3/4"	1"	1-1/4"	1-1/2"	1-3/4"	2"
900	GPM	3.2	5.1	7.0	8.8	10.6	12.4	14.3
	LPM	12	19	26	33	40	47	54
	HP	9	13	17	21	26	28	29
	kW	6	10	13	16	19	21	22
1200	GPM	4.5	7.0	9.5	12.0	14.5	16.9	19.4
	LPM	17	26	36	45	55	64	73
	HP	11	17	23	28	34	37	39
	kW	8	13	17	21	25	28	29
1500	GPM	5.8	8.9	12.1	15.2	18.3	21.4	24.5
	LPM	22	34	46	57	69	81	93
	HP	14	21	28	35	43	46	49
	kW	11	16	21	26	32	34	36
1800	GPM	7.1	10.8	14.7	18.4	22.1	25.9	29.6
	LPM	27	41	55	70	84	98	112
	HP	17	26	34	43	51	55	58
	kW	13	19	25	32	38	41	44
2100	GPM	8.4	12.7	17.2	21.6	26.0	30.3	34.7
	LPM	32	48	65	82	98	115	131
	HP	20	30	40	50	60	65	68
	kW	15	22	30	37	44	48	51
2400	GPM	9.6	14.7	19.8	24.8	29.8	34.8	39.8
	LPM	36	55	75	94	113	132	151
	HP	23	34	45	57	68	74	78
	kW	17	25	34	42	51	55	58
3000	GPM	12.2	18.5	24.9	31.2	37.5	43.8	50.1
	LPM	46	70	94	118	142	166	190
	HP	28	43	57	71	85	92	97
	kW	21	32	42	53	64	69	73

Input



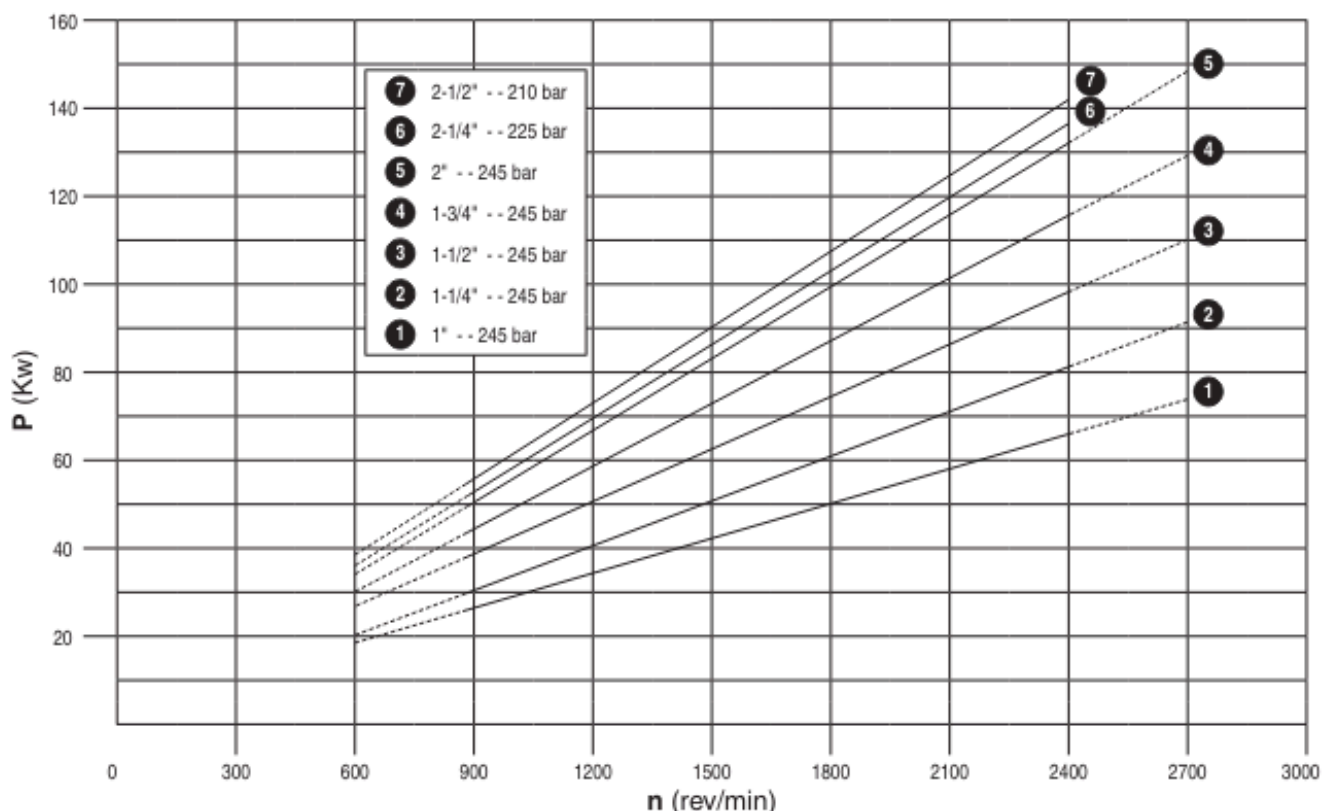
Speed RPM	Output Flow Input Power	Gear Widths								
		1/2"	3/4"	1"	1-1/4"	1-1/2"	1-3/4"	2"	2-1/4"	2-1/2"
900	GPM	4.0	6.4	8.8	11.2	13.7	16.1	18.6	21.0	23.4
	LPM	15	24	33	42	52	61	70	79	89
	HP	11	17	22	28	33	36	38	39	40
	kW	8	12	17	21	25	27	28	29	30
1200	GPM	5.6	8.8	12.1	15.4	18.7	21.9	25.2	28.4	31.7
	LPM	21	33	46	58	71	83	95	108	120
	HP	15	22	30	37	44	48	51	52	53
	kW	11	17	22	28	33	36	38	39	39
1500	GPM	7.3	11.3	15.5	19.5	23.6	27.7	31.8	35.9	40.0
	LPM	28	43	59	74	89	105	120	136	151
	HP	18	28	37	46	55	60	63	65	66
	kW	14	21	28	34	41	45	47	49	49
1800	GPM	8.9	13.8	18.8	23.6	28.6	33.5	38.4	43.3	48.3
	LPM	34	52	71	89	108	127	145	164	183
	HP	22	33	44	55	67	72	76	78	79
	kW	17	25	33	41	50	54	57	58	59
2100	GPM	10.6	16.3	22.1	27.8	33.6	39.3	45.1	50.8	56.6
	LPM	40	62	84	105	127	149	171	192	214
	HP	26	39	52	65	78	84	89	91	92
	kW	19	29	39	48	58	63	66	68	69
2400	GPM	12.2	18.8	25.4	31.9	38.5	45.1	51.7	58.2	64.8
	LPM	46	71	96	121	146	171	196	220	245
	HP	30	44	59	74	89	96	101	105	106
	kW	22	33	44	55	66	72	76	78	79

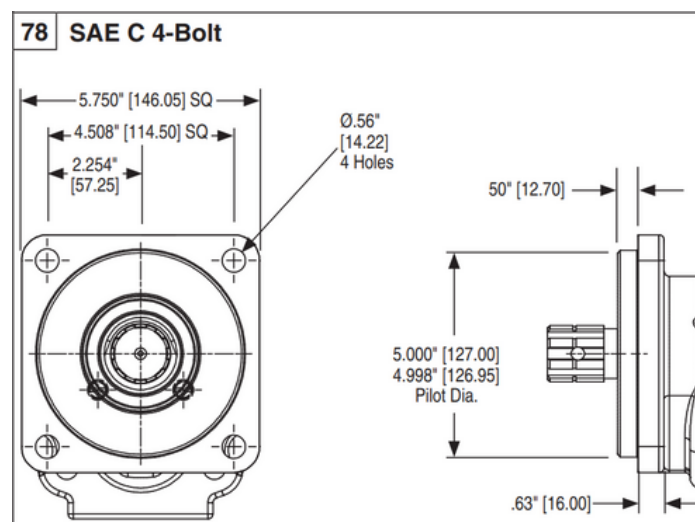
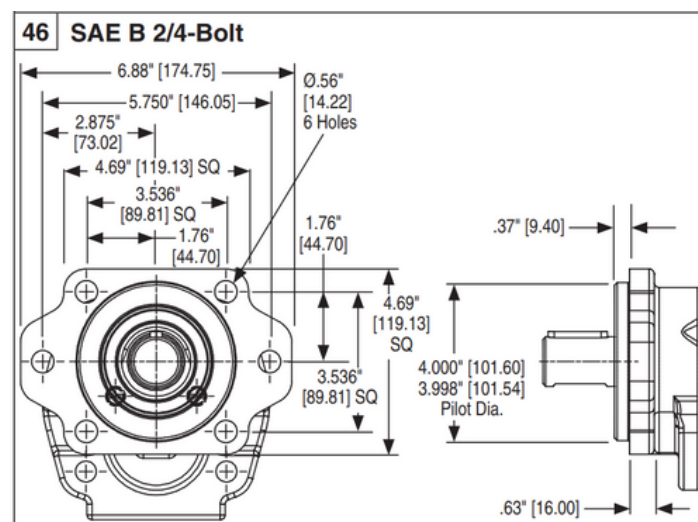
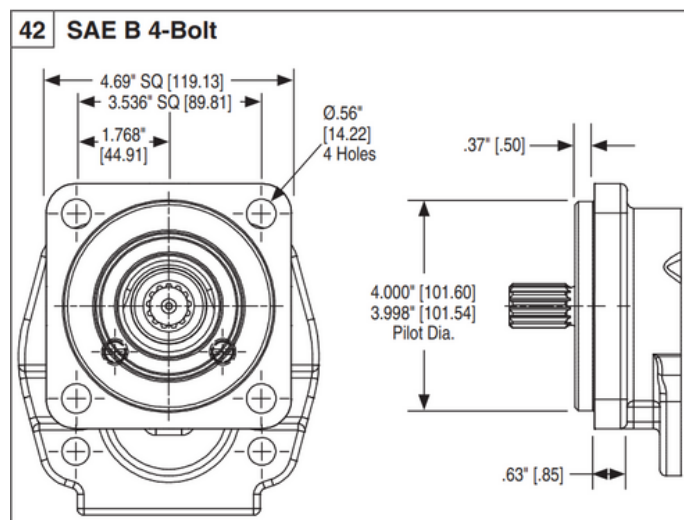
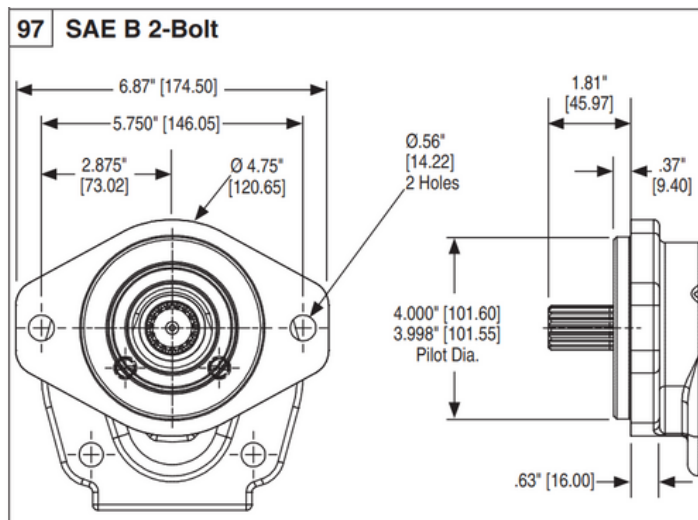
Input



Speed RPM	Output Flow Input Power	Gear Widths							
		3/4"	1"	1-1/4"	1-1/2"	1-3/4"	2"	2-1/4"	2-1/2"
900	GPM	8.0	11.5	14.9	18.4	21.8	25.4	28.8	32.3
	LPM	30	44	57	70	83	96	109	122
	HP	24	31	39	47	55	63	66	67
	kW	18	23	29	35	41	47	49	50
1200	GPM	11.5	16.2	20.8	25.5	30.0	34.7	39.3	44.0
	LPM	44	61	79	96	114	131	149	166
	HP	31	42	52	63	73	84	88	90
	kW	23	31	39	47	55	63	65	67
1500	GPM	15.0	20.9	26.6	32.5	38.2	44.1	49.8	55.6
	LPM	57	79	101	123	145	167	188	211
	HP	39	52	66	79	92	105	110	112
	kW	29	39	49	59	68	78	82	84
1800	GPM	18.5	25.6	32.5	39.5	46.4	53.4	60.3	67.3
	LPM	70	97	123	149	176	202	228	255
	HP	47	63	79	94	110	126	131	135
	kW	35	47	59	70	82	94	98	101
2100	GPM	22.0	30.2	38.3	46.5	54.6	62.8	70.8	79.0
	LPM	83	114	145	176	207	238	268	299
	HP	55	73	92	110	128	147	153	157
	kW	41	55	68	82	96	110	114	117
2400	GPM	25.6	34.9	44.2	53.5	62.8	72.1	81.4	90.7
	LPM	97	132	167	203	238	273	308	343
	HP	63	84	105	126	147	168	175	180
	kW	47	63	78	94	110	125	131	134

Input





PL Chart		
Shaft Style	Integral Shaft & Gear	Two-Piece Style
PGP/PGM330		
SAE "B" Spline	8,450	6,250
SAE "B" Key	6,250	6,250
SAE "B-B" Spline	13,000	6,250
SAE "B-B" Key	9,300	6,250
SAE "C" Spline	--	6,250
SAE "C" Key	--	6,250
Connecting Shaft	--	6,250
PGP/PGM350		
SAE "B" Spline	6,450	6,450
SAE "B" Key	4,750	4,750
SAE "B-B" Spline	9,900	9,000
SAE "B-B" Key	7,100	7,100
SAE "C" Spline	19,100	9,000
SAE "C" Key	13,900	9,000
Connecting Shaft	--	9,000
PGP/PGM365		
SAE "B" Spline	5,050	5,050
SAE "B" Key	3,700	3,700
SAE "B-B" Spline	7,750	5,350
SAE "B-B" Key	5,550	5,550
SAE "C" Spline	14,900	11,950
SAE "C" Key	10,800	10,800
Connecting Shaft	--	11,950

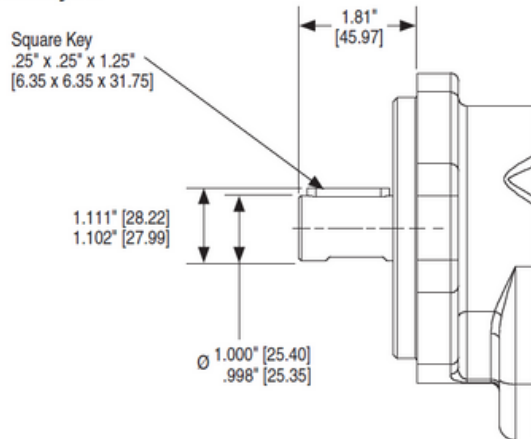
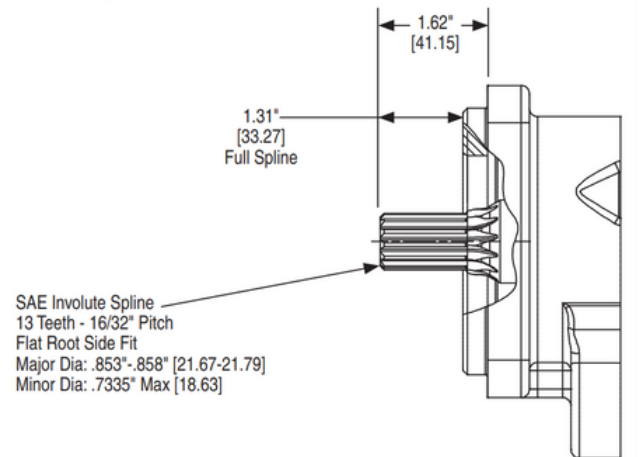
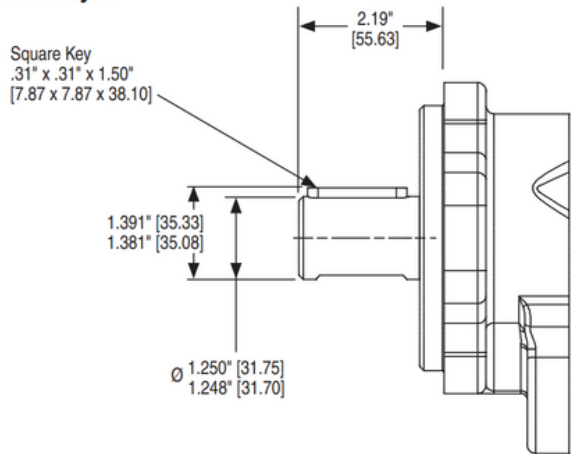
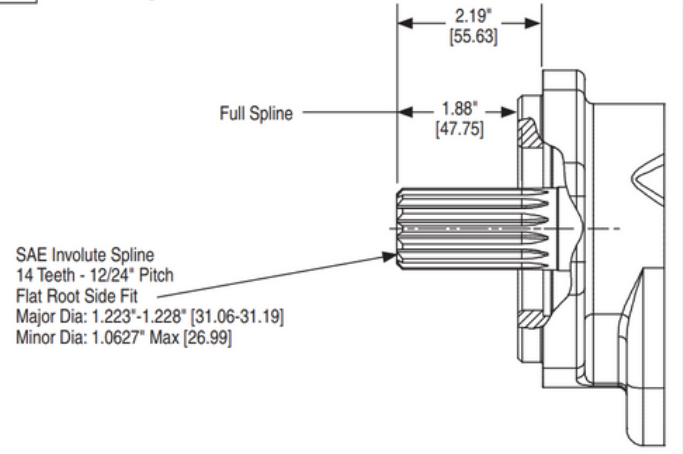
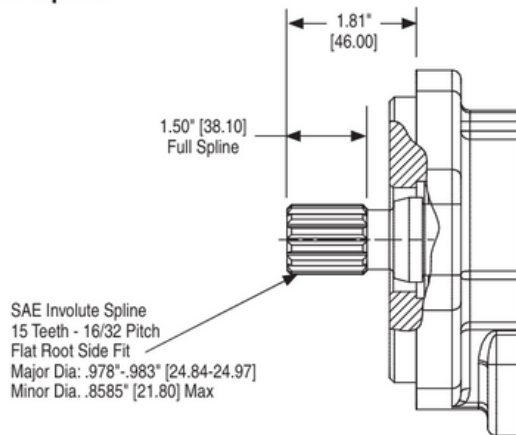
PL Factor

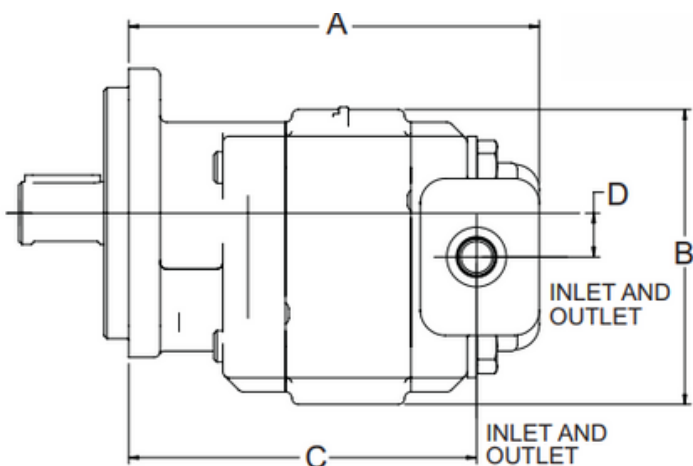
Each section of a multiple pump or motor should be regarded as a single unit with corresponding delivery and power input requirements. Since the entire input horsepower is fed through a common drive shaft, the power delivered to or from the unit is limited by the physical strength of the shaft. This limit is defined as a "PL" factor; "P" being the operating pressure and "L" the summation of gear widths.

In multiple units the "PL" must be calculated for the first connecting shaft as well as the drive shaft. Each style or type of shaft has a unique "PL" factor as noted in the table to the right.

$$\text{Pressure} \times \text{Total Gear Width} = \text{PL}$$

PL MUST NOT EXCEED NUMBER SHOWN IN CHART FOR APPROPRIATE SHAFT.

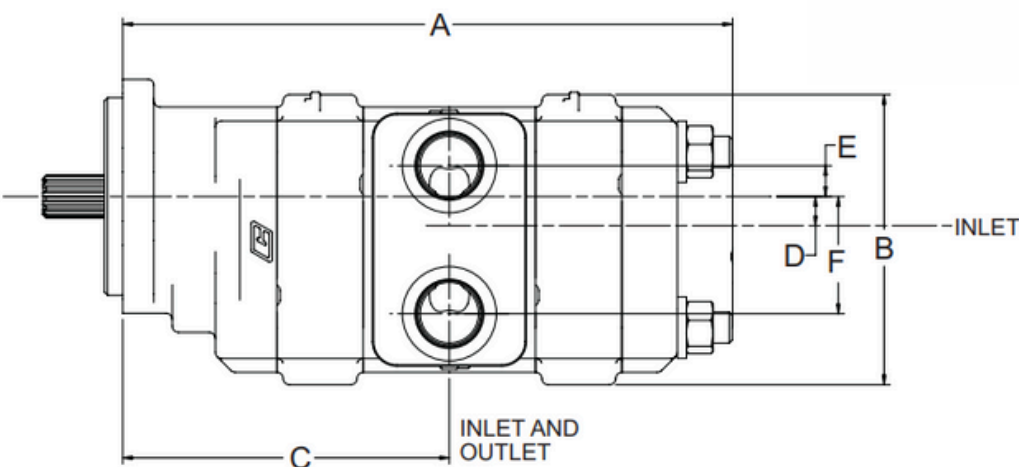
43 SAE BB Keyed**25 SAE B Spline****11 SAE C Keyed****7 SAE C Spline****98 SAE B-B Spline**

Single pump/motor

There is only one split flange port of each inlet and outlet port.

Multiple pump/motor

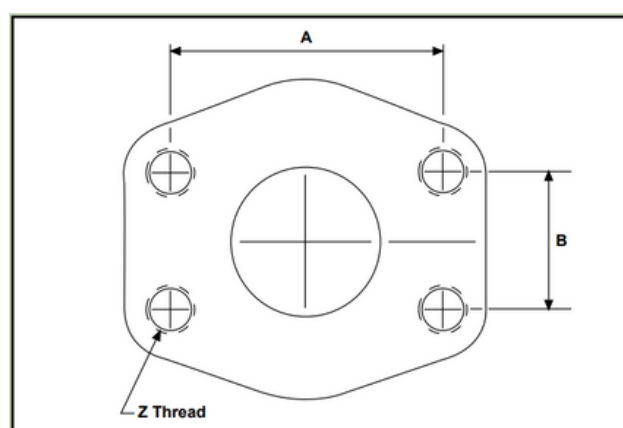
There are single bearing carrier (1 Inlet, 1 Outlet port) and dual bearing carrier (1 Inlet, 2 Outlet port) available.

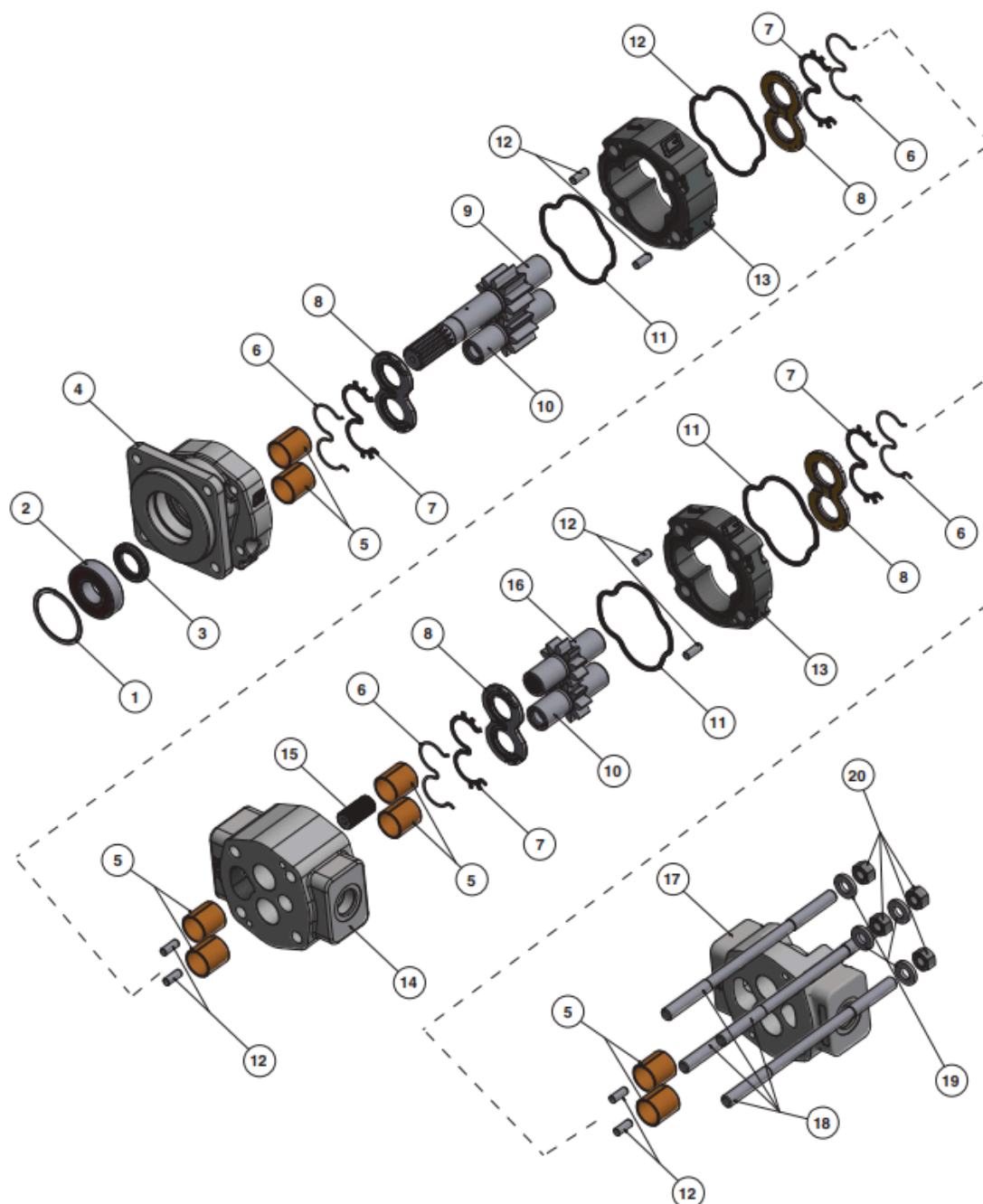


Port Size (SAE 3000)

PGP/PGM 300 Series

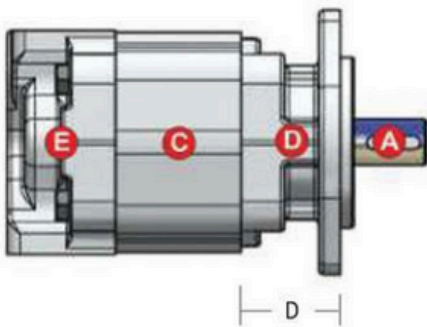
SAE Flange Size (D)	Dash Size	A		B		Thread (Z)	
		mm	inches	mm	inches	UNC	Metric
1/2"	- 08	38.10	1.5	17.48	0.69	5/16"	M8
3/4"	- 12	47.63	1.88	22.23	0.88	3/8"	M10
1"	- 16	52.37	2.06	26.19	1.03	3/8"	M10
1 1/4"	- 20	58.72	2.31	30.18	1.19	7/16"	M10
1 1/2"	- 24	69.85	2.75	35.71	1.41	1/2"	M12
2"	- 32	77.77	3.06	42.88	1.69	1/2"	M12
2 1/2"	- 40	88.90	3.50	50.80	2.00	1/2"	M12
3"	- 48	106.38	4.19	61.93	2.44	5/8"	M16



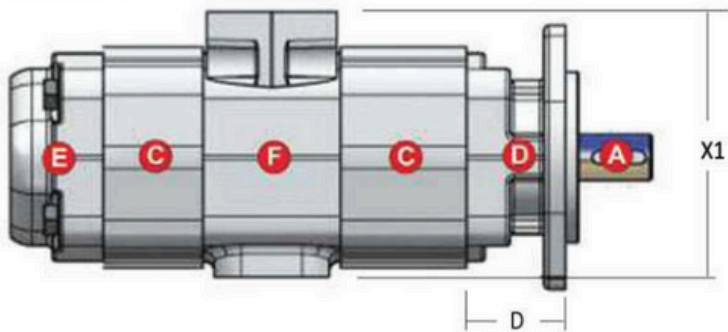


Item	Description	Item	Description
1	Snap Ring	11	Gasket Seal
2	Outboard Bearing	12	Dowel Pin
3	Lip Seal, Shaft Seal	13	Gear housing
4	Front End Cover	14	Bearing Carrier (Single & Dual)
5	Bushing	15	Connecting Shaft
6	Back Up Seal	16	Drive Match Gear
7	Channel Seal	17	Port End Cover
8	Trust Plate (or Pressure Plate)	18	Stud 5/8"
9	Gear Shaft, Drive Gear	19	Washer
10	Driven Match Gear	20	Hex Nut

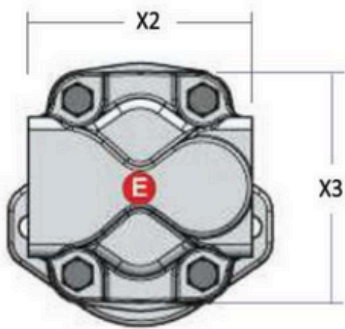
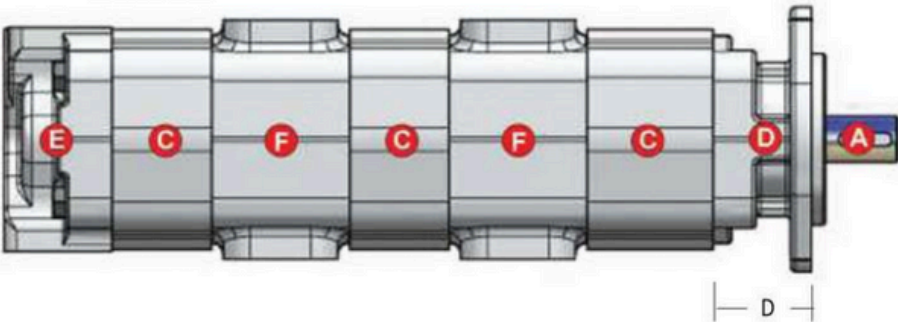
SINGLE



DOUBLE



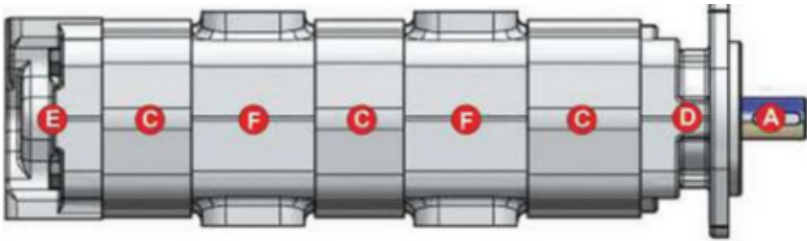
TRIPLE



<div><div>C</div>SERIES 330 / 350 / 365</div>			
Gear Housing	GW	inches	mm.
	- 05	1"	25.40
	- 07	1-1/4"	31.75
	- 10	1-1/2"	38.10
	- 12	1-3/4"	44.45
	- 15	2"	50.80
	- 17	2-1/4"	57.15
	- 20	2-1/2"	63.50
	- 22	2-3/4"	69.85
	- 25	3"	76.20

Series	E	D	F	X1	X2	X3
330	80 mm.	56 mm.	89 mm.	173 mm.	179 mm.	149 mm.
	3.15"	2.20"	3.5"	6.82"	7.06"	5.87"
350	89 mm.	56 mm.	89 mm.	195 mm.	184 mm.	157 mm.
	3.52"	2.20"	3.5"	7.68"	7.25"	6.18"
365	96 mm.	76 mm.	102 mm.	212 mm.	188 mm.	189 mm.
	3.76"	2.97"	4.01"	7.42"	7.42"	7.44"

SINGLE PUMP/MOTOR



Front End Cover	330			350			365		
	Pump		Motor	Pump		Motor	Pump		Motor
	Right	Left	Bi-direction	Right	Left	Bi-direction	Right	Left	Bi-direction
Gear width	05	07	10	12	15	17	20	22	25
	330 - 16.00 cc/rev 350 - 20.90 cc/rev 365 -	330 - 24.10 cc/rev 350 - 31.30 cc/rev 365 - 44.30 cc/rev	330 - 32.20 cc/rev 350 - 41.80 cc/rev 365 - 59.00 cc/rev	330 - 40.30 cc/rev 350 - 52.20 cc/rev 365 - 73.80 cc/rev	330 - 48.30 cc/rev 350 - 62.70 cc/rev 365 - 88.50 cc/rev	330 - 56.40 cc/rev 350 - 73.10 cc/rev 365 - 103.30 cc/rev	330 - 64.50 cc/rev 350 - 83.60 cc/rev 365 - 118.00 cc/rev	330 - 72.60 cc/rev 350 - 94.00 cc/rev 365 - 132.80 cc/rev	330 - 80.70 cc/rev 350 - 104.50 cc/rev 365 - 147.50 cc/rev
Gear Shaft									
	SAE B Keyed 1"			SAE B Spline 13T			SAE C Keyed 1.25"		
Front End Cover									
	SAE B 2 Bolt 146mm.			SAE 4 Bolt 89/119mm.			SAE B 2 1/4 Bolt 89/146mm.		
Inlet	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/4"	2-1/2"	
	Outlet	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/4"	2-1/2"

DOUBLE PUMP

Gear width	05	07	10	12	15	17	20	22	25
	330 - 16.00 cc/rev 350 - 20.90 cc/rev 365 -	330 - 24.10 cc/rev 350 - 31.30 cc/rev 365 - 44.30 cc/rev	330 - 32.20 cc/rev 350 - 41.80 cc/rev 365 - 59.00 cc/rev	330 - 40.30 cc/rev 350 - 52.20 cc/rev 365 - 73.80 cc/rev	330 - 48.30 cc/rev 350 - 62.70 cc/rev 365 - 88.50 cc/rev	330 - 56.40 cc/rev 350 - 73.10 cc/rev 365 - 103.30 cc/rev	330 - 64.50 cc/rev 350 - 83.60 cc/rev 365 - 118.00 cc/rev	330 - 72.60 cc/rev 350 - 94.00 cc/rev 365 - 132.80 cc/rev	330 - 80.70 cc/rev 350 - 104.50 cc/rev 365 - 147.50 cc/rev
Inlet	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/4"	2-1/2"	
Outlet	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/4"	2-1/2"	

TRIPLE PUMP

Gear width	05	07	10	12	15	17	20	22	25
	330 - 16.00 cc/rev 350 - 20.90 cc/rev 365 -	330 - 24.10 cc/rev 350 - 31.30 cc/rev 365 - 44.30 cc/rev	330 - 32.20 cc/rev 350 - 41.80 cc/rev 365 - 59.00 cc/rev	330 - 40.30 cc/rev 350 - 52.20 cc/rev 365 - 73.80 cc/rev	330 - 48.30 cc/rev 350 - 62.70 cc/rev 365 - 88.50 cc/rev	330 - 56.40 cc/rev 350 - 73.10 cc/rev 365 - 103.30 cc/rev	330 - 64.50 cc/rev 350 - 83.60 cc/rev 365 - 118.00 cc/rev	330 - 72.60 cc/rev 350 - 94.00 cc/rev 365 - 132.80 cc/rev	330 - 80.70 cc/rev 350 - 104.50 cc/rev 365 - 147.50 cc/rev
Inlet	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/4"	2-1/2"	
Outlet	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/4"	2-1/2"	

