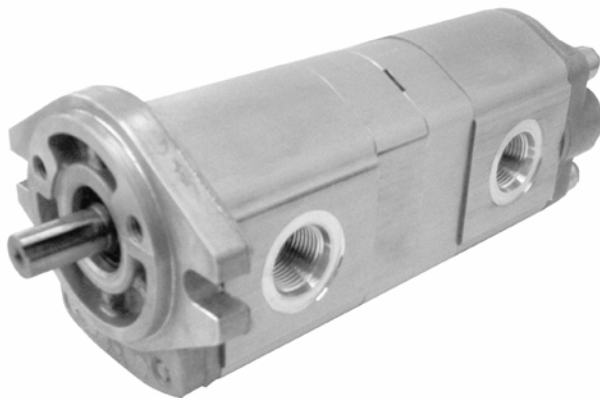


SPD1 DOUBLE PUMPS

The SPD1 series of double pumps consists of two SP20B pump sections. The typical performance of each section and the features of the pump are the same as indicated for the SP20B series of pumps.



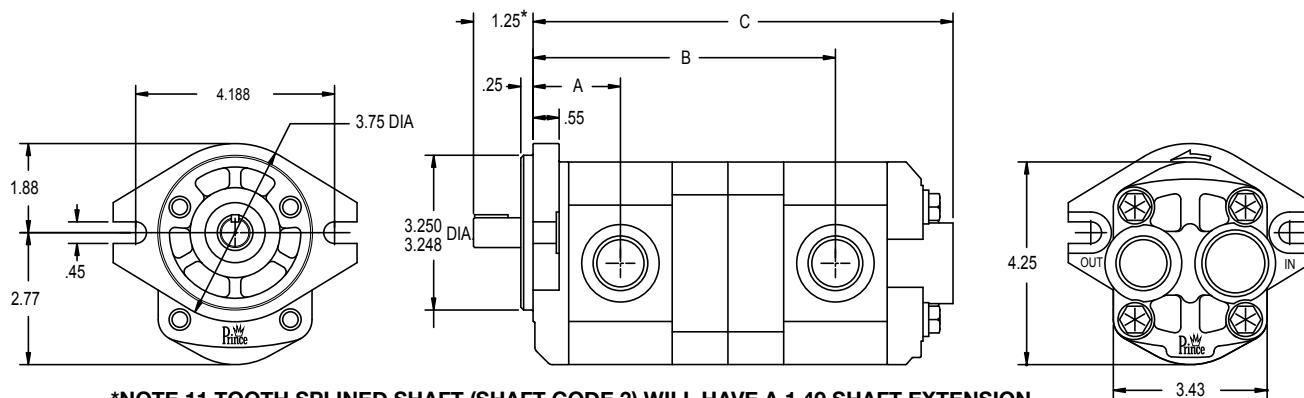
SPD1 DOUBLE PUMPS

SPD1B 16 09 - 1 H 9 L

<p>BASIC MODEL NO. _____</p> <p>FRONT PUMP (SHAFT END) _____</p> <p>Displacement Code (see chart)</p> <p>REAR PUMP _____</p> <p>DISPLACEMENT CODE (SEE CHART)</p>	<p>ROTATION: (FACING END OF SHAFT)</p> <p>L: COUNTER CLOCKWISE</p> <p>R: CLOCKWISE</p> <p>Drive Shaft Code:*</p> <p>9: SAE 9 TOOTH 16/32 SPLINE</p> <p>2: SAE 5/8" STRAIGHT KEYED</p> <p>3 - 11 TOOTH 16/32 SPLINE</p> <p>4 - 3/4 STRAIGHT KEYED</p> <p>MOUNTING:</p> <p>H: 2 BOLT "A" FLANGE</p> <p>INLET CODE:</p> <p>1: COMMON INLET (NO REAR INLET)</p> <p>2: SEPARATE INLET (INLETS-BOTH SECTIONS)</p>
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*Pumps with nonstandard shafts available in minimum quantities.

SPD1 DOUBLE PUMPS

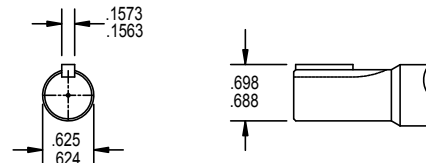


SPLINED SHAFT SPECIFICATIONS

SHAFT CODE 9
 9 Tooth
 16/32 DP
 30° PA
 Flat Root Side Fit

SHAFT CODE 3
 11 Tooth
 16/32 DP
 30° PA
 Flat Root Side Fit

KEYED SHAFT SPECIFICATIONS



SPD1 SERIES DOUBLE PUMPS

BASIC MODEL NUMBER & DISPLACEMENT CODES	DISPLACEMENT		MAXIMUM PRESSURE		MAXIMUM SPEED RPM	OUTLET PORT ^o SAE SIZE		INLET PORT SAE SIZE ^o SEPARATE INLET PUMP		INLET PORT SAE SIZE COMMON INLET PUMP		PUMP DIMENSIONS			WT. (L.B.)
	FRONT CU IN/REV	REAR CU IN/REV	FRONT PSI	REAR PSI		FRONT PUMP	REAR PUMP	FRONT PUMP	REAR PUMP	FRONT PUMP	REAR PUMP	A IN.	B IN.	C IN.	
SPD1B 08 08	0.499	0.499	3000	3000	3500	7/8-14	7/8-14	1/1/16-12	1/1/16-12	1/1/16-12	1/1/16-12	1.83	6.35	8.81	11.6
SPD1B 09 08	0.589	0.499	3000	3000	3500	7/8-14	7/8-14	1/1/16-12	1/1/16-12	1/1/16-12	1/1/16-12	1.87	6.43	8.89	11.8
SPD1B 09 09	0.589	0.589	3000	3000	3500	7/8-14	7/8-14	1/1/16-12	1/1/16-12	1/1/16-12	1/1/16-12	1.87	6.46	8.97	12.0
SPD1B 11 08	0.677	0.499	3000	3000	3500+	7/8-14	7/8-14	1/1/16-12	1/1/16-12	1/1/16-12	1/1/16-12	1.91	6.50	8.97	12.0
SPD1B 11 09	0.677	0.589	3000	3000	3500+	7/8-14	7/8-14	1/1/16-12	1/1/16-12	1/1/16-12	1/1/16-12	1.91	6.54	9.05	12.2
SPD1B 11 11	0.677	0.677	3000	3000	3500+	7/8-14	7/8-14	1/1/16-12	1/1/16-12	1/1/16-12	1/1/16-12	1.91	6.58	9.13	12.4
SPD1B 14 08	0.860	0.499	3000	3000	3500	7/8-14	7/8-14	1/1/16-12	1/1/16-12	1/1/16-12	1/1/16-12	1.99	6.66	9.13	12.2
SPD1B 14 09	0.860	0.589	2800*	2800*	3500	7/8-14	7/8-14	1/1/16-12	1/1/16-12	1/1/16-12	1/1/16-12	1.99	6.70	9.21	12.4
SPD1B 14 11	0.860	0.677	2600*	2800*	3500	7/8-14	7/8-14	1/1/16-12	1/1/16-12	1/1/16-12	1/1/16-12	1.99	6.74	9.29	12.6
SPD1B 14 14	0.860	0.860	2400*	2400*	3500	7/8-14	7/8-14	1/1/16-12	1/1/16-12	1/1/16-12	1/1/16-12	1.99	6.82	9.44	12.8
SPD1B 16 08	0.976	0.499	2800*	2800*	3500	7/8-14	7/8-14	1/1/16-12	1/1/16-12	1/1/16-12	1/1/16-12	2.04	6.76	9.23	12.5
SPD1B 16 09	0.976	0.589	2600*	2600*	3500	7/8-14	7/8-14	1/1/16-12	1/1/16-12	1/1/16-12	1/1/16-12	2.04	6.80	9.30	12.7
SPD1B 16 11	0.976	0.677	2400*	2600*	3500	7/8-14	7/8-14	1/1/16-12	1/1/16-12	1/1/16-12	1/1/16-12	2.04	6.84	9.38	12.9
SPD1B 16 14	0.976	0.860	2200*	2400*	3500	7/8-14	7/8-14	1/1/16-12	1/1/16-12	1/1/16-12	1/1/16-12	2.04	6.92	9.54	13.1
SPD1B 16 16	0.976	0.976	2000*	2200*	3500+	7/8-14	7/8-14	1/1/16-12	1/1/16-12	1/1/16-12	1/1/16-12	2.04	6.97	9.64	13.4
SPD1B 20 08	1.220	0.499	2400*	2400*	3500	1/1/16-12	7/8-14	1/5/16-12	1/1/16-12	1/5/16-12	1/5/16-12	2.15	6.98	9.44	12.7
SPD1B 20 09	1.220	0.589	2200*	2400*	3500	1/1/16-12	7/8-14	1/5/16-12	1/1/16-12	1/5/16-12	1/5/16-12	2.15	7.02	9.52	12.9
SPD1B 20 11	1.220	0.677	2200*	2200*	3500	1/1/16-12	7/8-14	1/5/16-12	1/1/16-12	1/5/16-12	1/5/16-12	2.15	7.06	9.60	13.1
SPD1B 20 14	1.220	0.860	2000*	2000*	3500	1/1/16-12	7/8-14	1/5/16-12	1/1/16-12	1/5/16-12	1/5/16-12	2.15	7.13	9.76	13.3
SPD1B 20 16	1.220	0.976	1800*	2000*	3500+	1/1/16-12	7/8-14	1/5/16-12	1/1/16-12	1/5/16-12	1/5/16-12	2.15	7.18	9.86	13.6
SPD1B 20 20	1.220	1.220	1600*	1800*	3500+	1/1/16-12	1/1/16-12	1/5/16-12	1/5/16-12	1/5/16-12	1/5/16-12	2.15	7.29	10.07	13.8
SPD1B 23 08	1.403	0.499	2200*	2200*	3500	1/1/16-12	7/8-14	1/5/16-12	1/1/16-12	1/5/16-12	1/5/16-12	2.23	7.13	9.60	12.9
SPD1B 23 09	1.403	0.589	2000*	2200*	3500	1/1/16-12	7/8-14	1/5/16-12	1/1/16-12	1/5/16-12	1/5/16-12	2.23	7.17	9.68	13.1
SPD1B 23 11	1.403	0.677	2000*	2000*	3500	1/1/16-12	7/8-14	1/5/16-12	1/1/16-12	1/5/16-12	1/5/16-12	2.23	7.21	9.76	13.3
SPD1B 23 14	1.403	0.860	1800*	2000*	3500	1/1/16-12	7/8-14	1/5/16-12	1/1/16-12	1/5/16-12	1/5/16-12	2.23	7.29	9.92	13.5
SPD1B 23 16	1.403	0.976	1800*	1800*	3500	1/1/16-12	7/8-14	1/5/16-12	1/1/16-12	1/5/16-12	1/5/16-12	2.23	7.34	10.01	13.8
SPD1B 23 20	1.403	1.220	1600*	1600*	3500+	1/1/16-12	1/1/16-12	1/5/16-12	1/5/16-12	1/5/16-12	1/5/16-12	2.23	7.45	10.23	14.0
SPD1B 23 23	1.403	1.403	1400*	1600*	3500+	1/1/16-12	1/1/16-12	1/5/16-12	1/5/16-12	1/5/16-12	1/5/16-12	2.23	7.53	10.39	14.2
SPD1B 27 08	1.654	0.499	1800*	2000*	3500	1/1/16-12	7/8-14	1/5/16-12	1/1/16-12	1/5/16-12	1/5/16-12	2.34	7.35	9.82	13.1
SPD1B 27 09	1.654	0.589	1800*	2000*	3500	1/1/16-12	7/8-14	1/5/16-12	1/1/16-12	1/5/16-12	1/5/16-12	2.34	7.39	9.90	13.3
SPD1B 27 11	1.654	0.677	1800*	1800*	3500	1/1/16-12	7/8-14	1/5/16-12	1/1/16-12	1/5/16-12	1/5/16-12	2.34	7.43	9.97	13.5
SPD1B 27 14	1.654	0.860	1600*	1800*	3500	1/1/16-12	7/8-14	1/5/16-12	1/1/16-12	1/5/16-12	1/5/16-12	2.34	7.51	10.13	13.7
SPD1B 27 16	1.654	0.976	1600*	1600*	3500	1/1/16-12	7/8-14	1/5/16-12	1/1/16-12	1/5/16-12	1/5/16-12	2.34	7.56	10.23	14.0
SPD1B 27 20	1.654	1.220	1400*	1600*	3500+	1/1/16-12	1/1/16-12	1/5/16-12	1/5/16-12	1/5/16-12	1/5/16-12	2.34	7.67	10.45	14.2
SPD1B 27 23	1.654	1.403	1400*	1400*	3500+	1/1/16-12	1/1/16-12	1/5/16-12	1/5/16-12	1/5/16-12	1/5/16-12	2.34	7.74	10.60	14.4
SPD1B 27 27	1.654	1.654	1200*	1400*	3500+	1/1/16-12	1/1/16-12	1/5/16-12	1/5/16-12	1/5/16-12	1/5/16-12	2.34	7.85	10.82	14.6

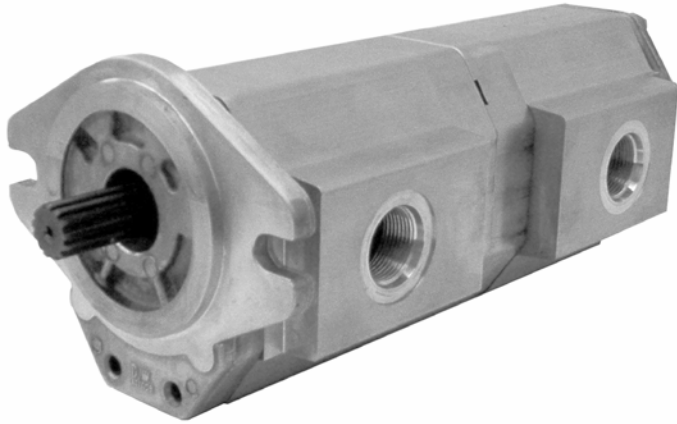
^o Standard ports as indicated are UN-2B straight thread 0-Ring boss ports. Optional sizes and configurations are available. Consult factory.

* Different pressure combinations may be used if required provided they conform to the following equation $PF \times DF + PR \times DR < 4150$ where PF and PR are the operating pressures (psi) and DF and DR are the displacements (cu in/rev) for the front and rear pumps respectively (maximum pressures are 3000 psi for displacement codes 8 -20 and 2500 psi for displacement codes 23 - 27).

+ Optional drive shafts available for higher pressure combinations. Consult factory.

+ Common inlet pumps require a reduction in maximum rpm. Consult factory.

SPD3 DOUBLE PUMPS



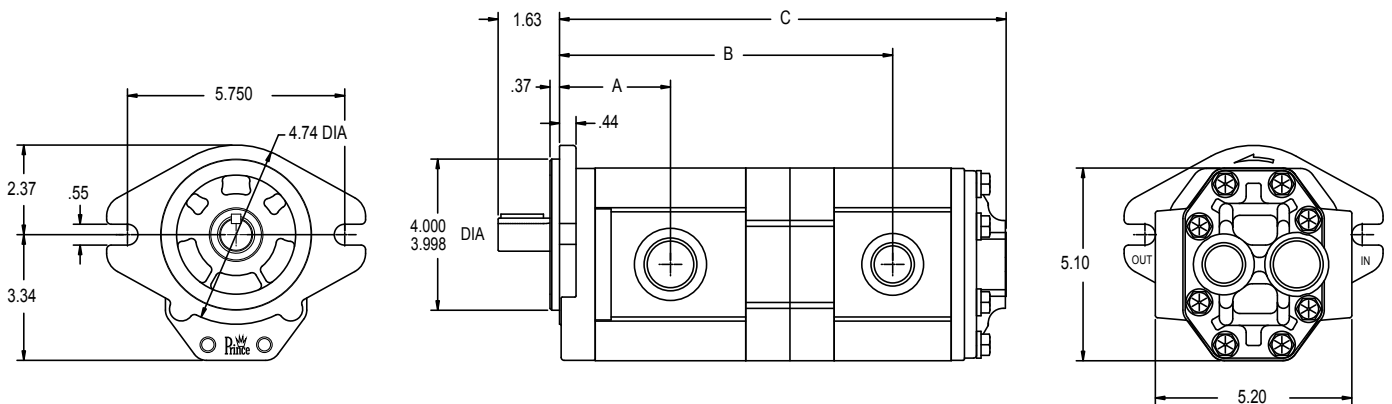
The SPD3 series of double pumps consists of two SP-25A pump sections. The typical performance of each section and the features of the pump are the same as indicated for the SP-25A series of pumps.

MODEL NO. CODING

SPD3 44 22 - 1 H 1 L

<p>BASIC MODEL NO. _____</p> <p>FRONT PUMP (SHAFT END) DISPLACEMENT CODE (SEE CHART) _____</p> <p>REAR PUMP DISPLACEMENT CODE (SEE CHART) _____</p>	<p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>	<p>ROTATION: (FACING END OF SHAFT) L: COUNTER CLOCKWISE R: CLOCKWISE</p> <p>Drive Shaft Code: 1: SAE 13 TOOTH 16/32 SPLINE 2: SAE 7/8" STRAIGHT KEYED</p> <p>MOUNTING: H: 2 BOLT "B" FLANGE</p> <p>INLET CODE: 1: COMMON INLET (NO REAR INLET) 2: SEPARATE INLET (INLETS-BOTH SECTIONS)</p>
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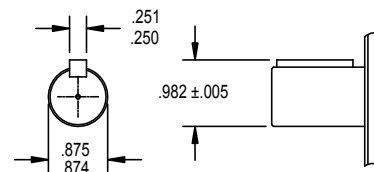
DIMENSIONS



SPLINED SHAFT SPECIFICATIONS

Per SAE Specifications
 13 Tooth
 16/32 Spline Pitch
 30 Degree Pressure Angle
 Flat Root Side Fit

KEYED SHAFT SPECIFICATIONS



SPD3 SERIES DOUBLE PUMPS

BASIC MODEL NUMBER & DISPLACEMENT CODES	DISPLACEMENT		MAXIMUM PRESSURE		MAXIMUM SPEED RPM	OUTLET PORT ^o SAE SIZE		INLET PORT SAE SIZE ^o SEPARATE INLET PUMP		INLET PORT SAE SIZE ^o COMMON INLET PUMP		PUMP DIMENSIONS			W.T. (L.B.)
	FRONT CU IN/REV	REAR CU IN/REV	FRONT PSI	REAR PSI		FRONT PUMP	REAR PUMP	FRONT PUMP	REAR PUMP	FRONT PUMP	REAR PUMP	A IN.	B IN.	C IN.	
SPD3 19 19	1.141	1.141	3000	3000	3000	1 1/16-12	1 1/16-12	1 5/16-12	1 5/16-12	1 5/8-12	NONE	2.49	7.93	10.93	23.3
SPD3 22 19	1.349	1.141	3000	3000	3000	1 1/16-12	1 1/16-12	1 5/16-12	1 5/16-12	1 5/8-12	NONE	2.55	8.05	11.05	23.5
SPD3 22 22	1.349	1.349	3000	3000	3000	1 1/16-12	1 1/16-12	1 5/16-12	1 5/16-12	1 5/8-12	NONE	2.55	8.11	11.17	23.7
SPD3 27 19	1.660	1.141	3000	3000	3000	1 1/16-12	1 1/16-12	1 5/16-12	1 5/16-12	1 5/8-12	NONE	2.64	8.23	11.23	23.9
SPD3 27 22	1.660	1.349	3000	3000	3000	1 1/16-12	1 1/16-12	1 5/16-12	1 5/16-12	1 5/8-12	NONE	2.64	8.29	11.35	24.1
SPD3 27 27	1.660	1.660	3000	3000	3000	1 1/16-12	1 1/16-12	1 5/16-12	1 5/16-12	1 5/8-12	NONE	2.64	8.37	11.52	24.5
SPD3 32 19	2.008	1.141	3000	3000	3000	1 5/16-12	1 1/16-12	1 5/8-12	1 5/16-12	1 7/8-12	NONE	2.74	8.42	11.42	24.3
SPD3 32 22	2.008	1.349	3000	3000	3000	1 5/16-12	1 1/16-12	1 5/8-12	1 5/16-12	1 7/8-12	NONE	2.74	8.48	11.54	24.5
SPD3 32 27	2.008	1.660	3000	3000	3000	1 5/16-12	1 1/16-12	1 5/8-12	1 5/16-12	1 7/8-12	NONE	2.74	8.57	11.72	24.9
SPD3 32 32	2.008	2.008	3000	3000	3000	1 5/16-12	1 5/16-12	1 5/8-12	1 5/8-12	1 7/8-12	NONE	2.74	8.67	11.92	25.3
SPD3 38 19	2.318	1.141	3000	3000	3000	1 5/16-12	1 1/16-12	1 5/8-12	1 5/16-12	1 7/8-12	NONE	2.83	8.60	11.60	24.8
SPD3 38 22	2.318	1.349	3000	3000	3000	1 5/16-12	1 1/16-12	1 5/8-12	1 5/16-12	1 7/8-12	NONE	2.83	8.66	11.72	25.0
SPD3 38 27	2.318	1.660	3000	3000	3000	1 5/16-12	1 1/16-12	1 5/8-12	1 5/16-12	1 7/8-12	NONE	2.83	8.75	11.90	25.4
SPD3 38 32	2.318	2.008	3000	3000	3000	1 5/16-12	1 5/16-12	1 5/8-12	1 5/8-12	1 7/8-12	NONE	2.83	8.85	12.09	25.8
SPD3 38 38	2.318	2.318	3000	3000	3000	1 5/16-12	1 5/16-12	1 5/8-12	1 5/8-12	1 7/8-12	NONE	2.83	8.94	12.27	26.3
SPD3 44 19	2.697	1.141	3000	3000	3000	1 5/16-12	1 1/16-12	1 5/8-12	1 5/16-12	1 7/8-12	NONE	2.94	8.82	11.82	25.3
SPD3 44 22	2.697	1.349	3000	3000	3000	1 5/16-12	1 1/16-12	1 5/8-12	1 5/16-12	1 7/8-12	NONE	2.94	8.88	11.94	25.5
SPD3 44 27	2.697	1.660	3000	3000	3000	1 5/16-12	1 1/16-12	1 5/8-12	1 5/16-12	1 7/8-12	NONE	2.94	8.96	12.11	25.9
SPD3 44 32	2.697	2.008	3000	3000	3000	1 5/16-12	1 5/16-12	1 5/8-12	1 5/8-12	1 7/8-12	NONE	2.94	9.06	12.31	26.3
SPD3 44 38	2.697	2.318	3000	3000	3000+	1 5/16-12	1 5/16-12	1 5/8-12	1 5/8-12	1 7/8-12	NONE	2.94	9.15	12.49	26.8
SPD3 44 44	2.697	2.697	3000	3000	3000+	1 5/16-12	1 5/16-12	1 5/8-12	1 5/8-12	1 7/8-12	NONE	2.94	9.26	12.70	27.3
SPD3 52 19	3.179	1.141	2500	3000	3000	1 5/16-12	1 1/16-12	1 5/8-12	1 5/16-12	1 7/8-12	NONE	3.07	9.09	12.09	26.1
SPD3 52 22	3.179	1.349	2500	3000	3000	1 5/16-12	1 1/16-12	1 5/8-12	1 5/16-12	1 7/8-12	NONE	3.07	9.15	12.21	26.3
SPD3 52 27	3.179	1.660	2500	3000	3000	1 5/16-12	1 1/16-12	1 5/8-12	1 5/16-12	1 7/8-12	NONE	3.07	9.24	12.39	26.7
SPD3 52 32	3.179	2.008	2500	3000	3000	1 5/16-12	1 5/16-12	1 5/8-12	1 5/8-12	1 7/8-12	NONE	3.07	9.34	12.59	27.1
SPD3 52 38	3.179	2.318	2300*	3000+	3000+	1 5/16-12	1 5/16-12	1 5/8-12	1 5/8-12	1 7/8-12	NONE	3.07	9.43	12.76	27.6
SPD3 52 44	3.179	2.697	2100*	3000+	3000+	1 5/16-12	1 5/16-12	1 5/8-12	1 5/8-12	1 7/8-12	NONE	3.07	9.54	12.98	28.1
SPD3 52 52	3.179	3.179	2000*	3000+	3000+	1 5/16-12	1 5/16-12	1 5/8-12	1 5/8-12	1 7/8-12	NONE	3.07	9.67	13.26	28.9
SPD3 63 19	3.869	1.141	2500*	2900*	3000	1 5/16-12	1 1/16-12	1 7/8-12	1 5/16-12	1 7/8-12	NONE	3.27	9.49	12.49	26.8
SPD3 63 22	3.869	1.349	2500*	2500*	3000	1 5/16-12	1 1/16-12	1 7/8-12	1 5/16-12	1 7/8-12	NONE	3.27	9.55	12.61	27.0
SPD3 63 27	3.869	1.660	2300*	2500*	3000	1 5/16-12	1 1/16-12	1 7/8-12	1 5/16-12	1 7/8-12	NONE	3.27	9.63	12.78	27.4
SPD3 63 32	3.869	2.008	2100*	2500*	3000+	1 5/16-12	1 5/16-12	1 7/8-12	1 5/8-12	1 7/8-12	NONE	3.27	9.73	12.98	27.8
SPD3 63 38	3.869	2.318	2000*	2300*	3000+	1 5/16-12	1 5/16-12	1 7/8-12	1 5/8-12	1 7/8-12	NONE	3.27	9.82	13.16	28.3
SPD3 63 44	3.869	2.697	1900*	2100*	3000+	1 5/16-12	1 5/16-12	1 7/8-12	1 5/8-12	1 7/8-12	NONE	3.27	9.93	13.37	28.8
SPD3 63 52	3.869	3.179	1700*	2000*	3000+	1 5/16-12	1 5/16-12	1 7/8-12	1 5/8-12	1 7/8-12	NONE	3.27	10.07	13.65	29.6
SPD3 63 63	3.869	3.869	1500*	1800*	3000+	1 5/16-12	1 5/16-12	1 7/8-12	1 7/8-12	1 7/8-12	NONE	3.27	10.26	14.04	30.3

^o Standard ports as indicated are UN-2B straight thread O-Ring boss ports. Optional sizes and configurations are available. Consult factory.

* Different pressure combinations may be used if required provided they conform to the following equation PF x DF + PR x DR < 13200 where PF and PR are the operating pressures (psi) and DF and DR are the displacements (cu in/rev) for the front and rear pumps respectively (maximum pressures are 3000 psi for displacement codes 19 - 44 and 2500 psi for displacement codes 52 - 63).

Consult factory.

+ Common inlet pumps require a reduction in maximum rpm. Consult factory.