

**GHA SERIES
 EXTREME DUTY ABRASIVE
 G, J, N, R & S HYD SIZE
 ROTARY GEAR PUMP**



The GHA series is designed for applications in the operating ranges noted below. These units are available with head and backhead jackets for temperature control, and packing or carbide mechanical seal options described on the following pages.

This abrasive handling, extreme duty series, provides superior wear resistance. The design also provides superior rotor shaft support and an integral, maintenance-free radial/thrust bearing for reduced deflection and wear. Reduced speeds enable service over extended periods. Information such as percentage, size and hardness of solids present in the liquid are useful to estimate pump life.

FEATURES

- HARDENED, WEAR RESISTANT GEARS, HOUSING, HEAD, PIN, AND BUSHING*
- HARD FACE, WEAR RESISTANT MECHANICAL SEAL*
- OVERSIZED TAPERED SEAL CAVITY*
- HEAVY DUTY NEEDLE ROLLER BEARING*
- ROTOR END CLEARANCE EXTERNALLY ADJUSTABLE*
- FLEXIBLE SEAL DESIGN ALLOWS FOR A VARIETY OF INDUSTRY STANDARD SEALS OR PACKING*
- BALL BEARING THRUST CONTROL*

OPERATING RANGE

CAPACITY	(GPM) :	(8 TO 325)
	[LPM] :	[25 TO 1020]
PRESSURE	(PSI) :	[0 TO 200]
	[BAR] :	[0 TO 14]
VISCOSITY	(SSU) :	(28 TO 250,000)
	[cSt] :	[1 TO 55,000]
TEMPERATURE	(F) :	(-60° TO 500°)
	[C] :	[-51° TO 260°]

APPLICATIONS

- USE WITH ANY LIQUID COMPATIBLE WITH CAST IRON
- ★ PAINTS
- ★ INKS
- ★ ADHESIVES
- ★ WASTE LIQUIDS
- ★ EMULSIONS
- ★ FILTERING

EXTER- IOR	ROTOR & IDLER	HSG PORTS	IDLER BUSHING	BACKHD BEARING	IDLER PIN	SHAFT	SHAFT SEALING		ROTA- TION	INTERNAL RELIEF VALVE	
							MECHANICAL SEAL ●	PACKING ■		MATERIAL	SETTING
CAST IRON	HARD IRON	90° TAPPED/ FLNG'D	SILICON CARBIDE	① NEEDLE BEARING	TUNGSTEN CARBIDE	HARD. STEEL	SILICON CARB. SILICON CARB. VITON	ARAMID FIBER W/GRAPHITE	C.W.	DUCTILE IRON	75 PSI [5 BAR]

Standard Models

G H A 2 NK 3 - B
 | | | | | | |
 GEAR DUTY DESIGN PORT SIZE HYDRAULIC SEAL STYLE
 SIZE SIZE

MODEL NUMBER	NOM. CAPACITY-SPEED		MAXIMUM				SHIPPING DATA	
	MAXIMUM		DIFFERENTIAL PRESSURE - PSI [BAR]			TEMP.	② Weight	Volume
	GPM [LPM]	RPM 60 Hz [50 HZ]	BELOW 38 SSU [4 cSt]	38 TO 100 SSU [21 cSt]	100 TO 250,000 SSU [55,000 cSt]	°F [°C]		
GHA 1-1/2 GC 3-B ● GHA 1-1/2 GC 4-B ■	8 [25]	870 [720]					57 [25,9]	2.9
GHA 1-1/2 GF 3-B ● GHA 1-1/2 GF 4-B ■	11 [36]							
GHA 1-1/2 GH 3-B ● GHA 1-1/2 GH 4-B ■	15 [49]							
GHA 1-1/2 GJ 3-B ● GHA 1-1/2 GJ 4-B ■	19 [60]							
GHA 2 JJ 3-B ● GHA 2 JJ 4-B ■	28 [88]	580 [480]	100 [7]	150 [10]	200 [14]	● 250 [119]	144 [65,5]	5.3
GHA 2 JL 3-B ● GHA 2 JL 4-B ■	38 [121]							
GHA 2 JP 3-B ● GHA 2 JP 4-B ■	54 [169]							
GHA 2 NK 3-B ● GHA 2 NK 4-B ■	60 [188]	580 [480]				■ 500 [260]	180 [81,6]	5.3
GHA 3 NK 3-B ● GHA 3 NK 4-B ■	80 [251]							
GHA 2 NM 3-B ● GHA 2 NM 4-B ■	80 [251]							
GHA 3 NM 3-B ● GHA 3 NM 4-B ■	80 [251]							
GHA 2 NP 3-B ● GHA 2 NP 4-B ■	99 [313]	580 [480]				● 250 [119]	180 [81,6]	10.7
GHA 3 NP 3-B ● GHA 3 NP 4-B ■	99 [313]							

STANDARD MODELS CONT.

① EXCEPT "S" SIZE AND 4-B MODELS (SILICON CARBIDE BUSHING).

② FOR 4-B UNIT WEIGHT, REFER TO GHS SECTION

● MECHANICAL SEAL
■ PACKING

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GORMAN-RUPP OF CANADA LIMITED • ST. THOMAS, ONTARIO, CANADA

MODEL NUMBER	NOM. CAPACITY-SPEED		MAXIMUM				SHIPPING DATA		
	MAXIMUM		DIFFERENTIAL PRESSURE - PSI [BAR]			TEMP.	Weight	Volume	
	GPM [LPM]	RPM 60 Hz [50 HZ]	BELOW 38 SSU [4 cSt]	38 TO 100 SSU [21 cSt]	100 TO 250,000 SSU [55,000 cSt]	°F [°C]	LBS [KG]	CU. FT.	
GHA 2 RM 3-B ● GHA 2 RM 4-B ■	85 [271]	350 [290]	100 [7]	150 [10]	200 [14]	● 250 [119] ■ 500 [260]	357 [162]	10.7	
GHA 2-1/2 RM 3-B ● GHA 2-1/2 RM 4-B ■							357 [162]		
GHA 3 RM 3-B ● GHA 3 RM 4-B ■							357 [162]		
GHA 3 RP 3-B ● GHA 3 RP 4-B ■							105 [339]		357 [162]
GHA 3 RR 3-B ● GHA 3 RR 4-B ■							125 [402]		357 [162]
GHA 3 RS 3-B ● GHA 3 RS 4-B ■							146 [465]		357 [162]
GHA 4 RS 3-B ● GHA 4 RS 4-B ■							146 [465]		357 [162]
GHA 3 SR 3-B ● GHA 3 SR 4-B ■	210 [660]	350 [290]	100 [7]	150 [10]	200 [14]	● 400 [204] ■ 500 [260]	530 [240]	17.3	
GHA 4 SR 3-B ● GHA 4 SR 4-B ■							530 [240]		
GHA 3 SU 3-B ● GHA 3 SU 4-B ■							325 [1020]		530 [240]
GHA 4 SU 3-B ● GHA 4 SU 4-B ■									530 [240]

PORTS ARE COMPATIBLE WITH 125# ANSI CAST IRON FLANGES. ALL OTHER PORTS ARE TAPPED NPT FOR ANSI PIPE.

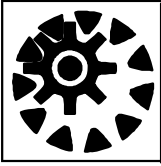
NOTE: PROPER PUMP APPLICATION REQUIRES CONSIDERATION OF ADDITIONAL FACTORS. PLEASE REVIEW APPLICATION GUIDE IN SECTION 500 OR CONSULT THE FACTORY.

GHA

**FOR GHA DRIVE OPTIONS
AND DIMENSIONS**

SEE

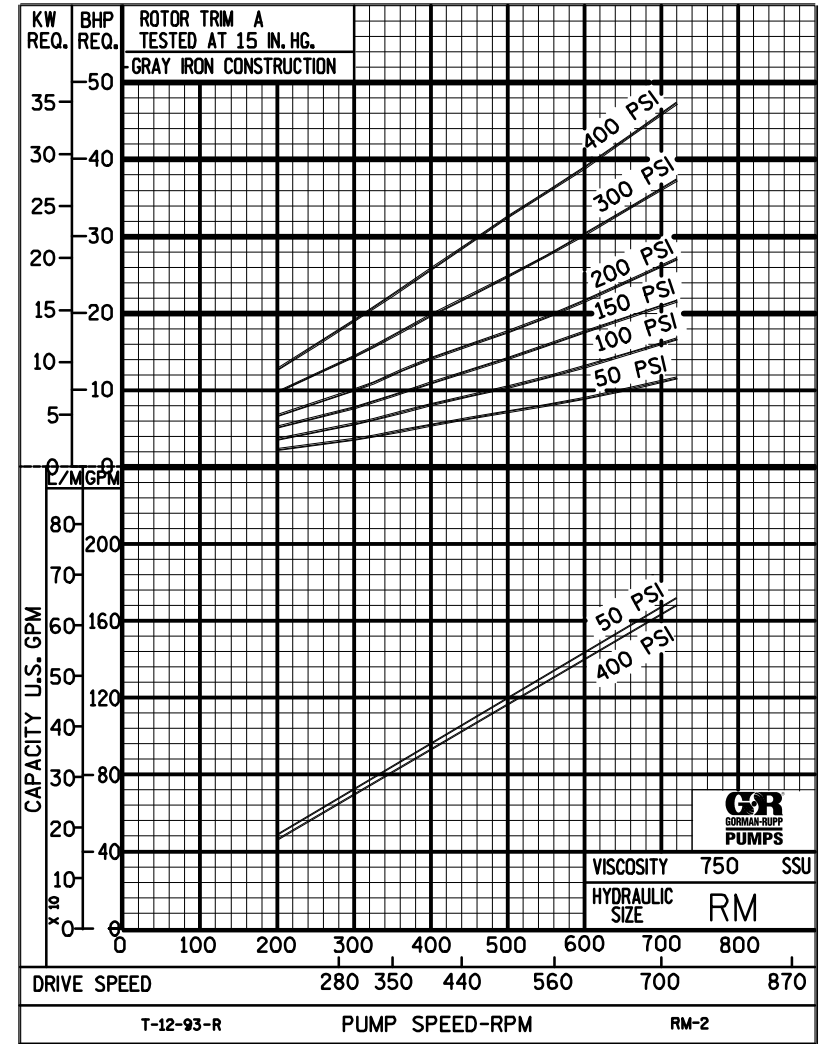
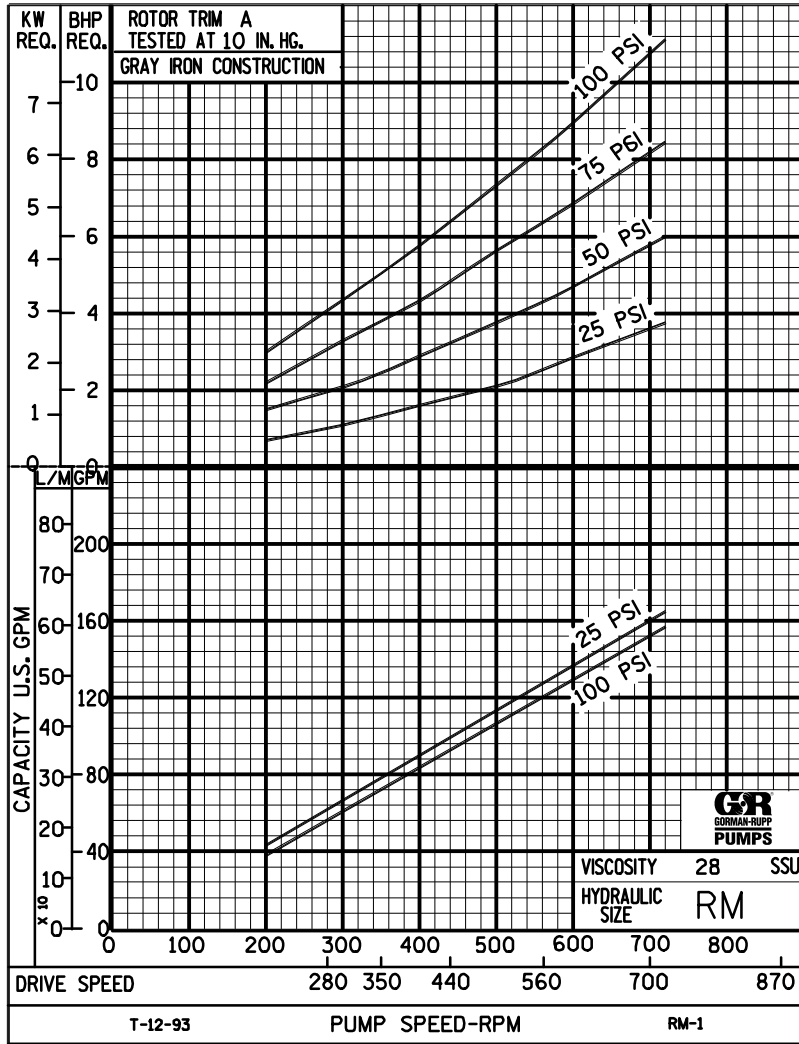
SECTION 545



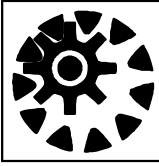
PERFORMANCE CURVES

SPEED VS. CAPACITY/HORSEPOWER

RM Hydraulic Size



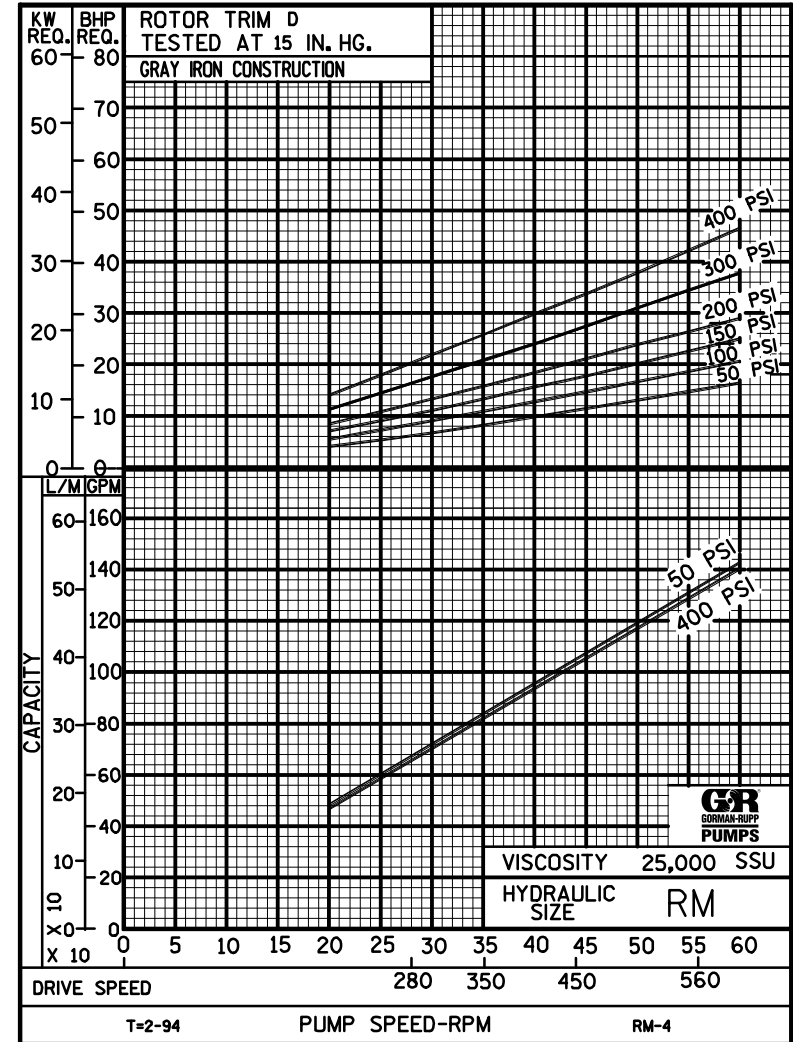
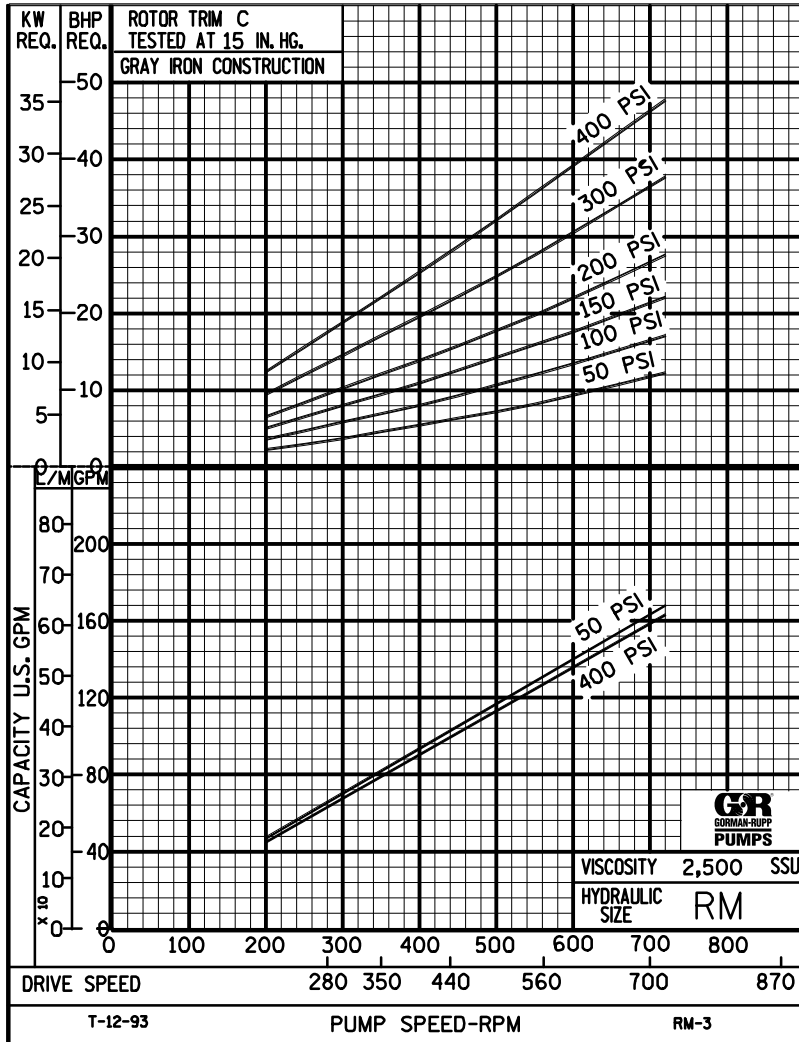
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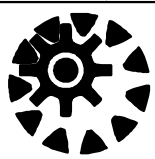
PERFORMANCE CURVES

SPEED VS. CAPACITY/HORSEPOWER

RM Hydraulic Size



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RM

PUMP HYDRAULIC SIZE CHART

SEC. 500

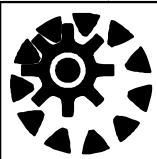
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153 GPM
640 RPM

NOMINAL		ROTOR TRIM	VISCOSITY (SSU)	N.I.P.R. (PSIA)	FRICTION PIPE LOSS (PSI/FT) (Based on Sch 40 Steel Pipe)					FULL BYPASS RELIEF VALVE PRESSURE (PSI)					CAPACITY (GPM) / H.P. REQUIRED								
CAP. GPM	SPEED RPM				PIPE DIAMETER					CRACKING PRESS. (PSI)					DIFFERENTIAL PRESSURE (PSI)								
					2"	2 1/2"	3"	4"	6"	LOW PRES R/V			HI PRES R/V		MEDIUM DUTY AND HEAVY DUTY				HEAVY DUTY ONLY				
							50	75	100	150	200	25	50	75	100	150	200	300	400				
153	640	STD	28	2.5	.16	.07	.02	.01	-	57	84	120	178		145	142	139	137					
			32		.17	.07	.02	.01	-						3.3	6.1	7.9	10					
			38	2.5	.19	.08	.03	.01	-	60	86	122	180		146	144	141	140	137				
			50		.20	.09	.03	.01	-						4.5	6.8	9.1	11	16				
			70	2.5	.23	.10	.03	.01	-	63	89	124	183	242		148	146	144	143	141	139		
			100		.25	.11	.04	.01	-							5.9	8.1	10	12	17	23		
			150	2.5	.28	.12	.04	.01	-	66	93	127	186	246		150	149	148	147	145	144	142	139
			200		.31	.13	.05	.01	-							6.7	9.2	11	13	18	23	32	41
			300	2.5	.35	.15	.05	.01	-	72	98	131	190	251		152	151	150	150	149	148	146	145
			500		.41	.12	.05	.02	-							7.8	10	12	14	19	24	33	42
		750	2.6	.36	.18	.07	.03	-	75	101	134	193	254		153	152	152	152	151	150	150	149	
		1,000		.48	.24	.10	.03	.01							7.9	10	12	14	19	24	33	42	
		2,000	2.7	.97	.47	.20	.07	.01	82	110	139	199	260		151	150	150	149	149	148	147	146	
		3,500		1.69	.83	.35	.12	.02							8.8	11	13	15	20	24	33	43	
		5,000	2.9	2.42	1.19	.50	.17	.03	86	112	142	202	264		151	150	150	150	149	148	147	146	
		7,500		3.63	1.78	.75	.25	.05							10	13	15	16	21	26	35	45	
		10,000	3.2	4.83	2.37	1.00	.34	.07	89	115	145	205	268		151	151	150	150	150	149	148	147	
		15,000		7.25	3.56	1.49	.50	.10							12	14	16	18	23	28	36	47	
		20,000	3.5	9.67	4.75	1.99	.67	.13	92	118	147	207	270		152	151	151	150	150	150	149	148	
		25,000		12.1	5.94	2.49	.84	.16							14	16	18	20	25	30	39	50	
50,000	"D"																						
75,000																							
100,000	"D"																						
150,000																							
200,000	"D"																						
250,000																							

(NOTE) For speeds not shown on the pump hydraulic charts, consult factory.



RM

PUMP HYDRAULIC SIZE CHART

SEC. 500

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125 GPM
520 RPM

NOMINAL		ROTOR TRIM	VISCOSITY (SSU)	N.I.P.R. (PSIA)	FRICTION PIPE LOSS (PSI/FT) (Based on Sch 40 Steel Pipe)					FULL BYPASS RELIEF VALVE PRESSURE (PSI)					CAPACITY (GPM) / H.P. REQUIRED								
CAP. GPM	SPEED RPM				PIPE DIAMETER					CRACKING PRESS. (PSI)					DIFFERENTIAL PRESSURE (PSI)								
					2"	2 1/2"	3"	4"	6"	LOW PRES R/V		HI PRES R/V			MEDIUM DUTY AND HEAVY DUTY				HEAVY DUTY ONLY				
							50	75	100	150	200	25	50	75	100	150	200	300	400				
125	520	STD	28	1.9	.11	.05	.02	-	-	55	83	119	176	116	113	112	109						
			32		.12	.05	.02	-	-					2.3	4.1	7.1	9.8						
			38	1.9	.13	.05	.02	.01	-	57	85	121	177	118	115	113	111	108					
			50		.15	.06	.02	.01	-					3.5	5.1	7.9	10	14					
			70	1.9	.16	.07	.02	.01	-	60	88	123	180	236	120	118	117	115	113	110			
			100		.18	.08	.03	.01	-						4.5	6.1	8.9	11	15	18			
			150	1.9	.21	.09	.03	.01	-	64	91	125	182	239	122	121	120	119	117	115	113	111	
			200		.22	.10	.03	.01	-						5.2	6.8	9.3	11	15	18	26	34	
			300	1.9	.25	.11	.02	.01	-	68	95	128	185	242	124	123	122	121	120	119	118	117	
			500		.20	.10	.04	.01	-						5.6	7.4	9.4	11	15	18	26	34	
		750	2.0	.30	.15	.06	.02	-	72	98	130	187	244	125	124	124	123	123	122	122	121		
		1,000		.40	.20	.08	.03	.01						5.9	7.6	9.6	11	15	18	26	34		
		2,000	2.3	.81	.40	.17	.06	.01	78	104	134	191	249	123	122	122	121	120	120	118	118		
		3,500		1.41	.69	.29	.10	.02						6.7	8.4	11	12	16	19	26	34		
		5,000	2.6	2.01	.99	.42	.14	.03	81	107	136	194	252	123	123	122	122	121	121	119	119		
		7,500		3.02	1.48	.62	.21	.04						8.4	10	12	14	17	21	28	35		
		10,000	2.9	4.03	1.98	.83	.28	.05	85	110	139	196	254	124	123	123	122	122	122	120	120		
		15,000		6.04	2.97	1.25	.42	.08						10	12	14	16	19	23	30	37		
		20,000	3.2	8.06	3.96	1.66	.56	.11	87	112	140	197	256	124	124	123	123	123	123	122	121		
		25,000		10.1	4.95	2.08	.70	.14						12	13	16	17	21	25	32	39		
50,000	4.6	20.1	9.90	4.15	1.40	.27	93	117	143	202	260	124	124	123	123	123	123	122	121				
75,000		30.2	14.8	6.23	2.10	.41						16	18	20	22	26	30	38	45				
100,000																							
150,000																							
200,000																							
250,000																							

(NOTE) For speeds not shown on the pump hydraulic charts, consult factory.

