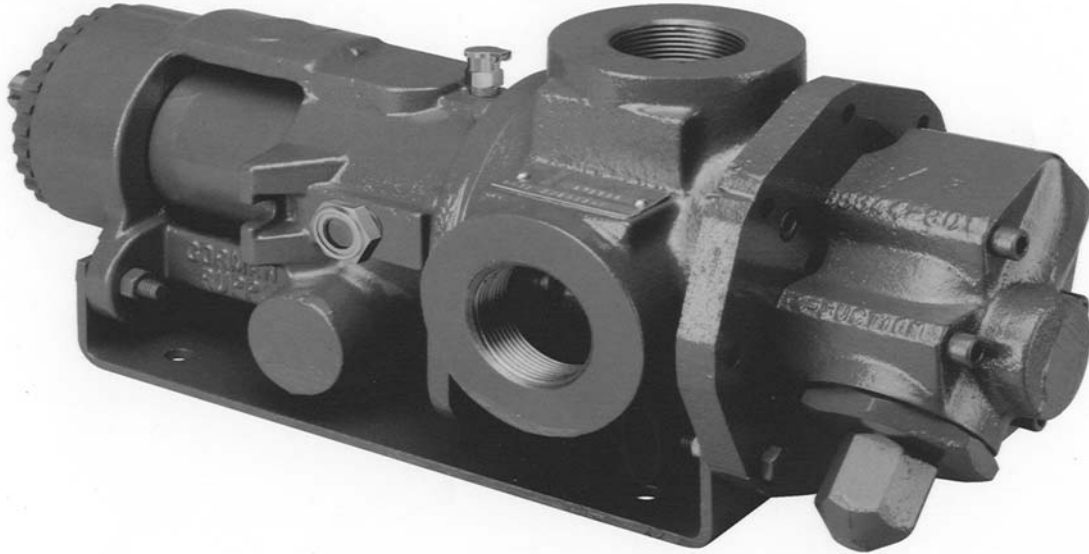


**GHA SERIES
 EXTREME DUTY ABRASIVE
 G, J, N, R & S HYD SIZE
 ROTARY GEAR PUMP**



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]			LBS [KG]
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]							57 [25,9]	
GHA 1-1/2 GH 3-B ● GHA 1-1/2 GH 4-B ■	15 [49]							57 [25,9]	
GHA 1-1/2 GJ 3-B ● GHA 1-1/2 GJ 4-B ■	19 [60]							57 [25,9]	
GHA 2 JJ 3-B ● GHA 2 JJ 4-B ■	28 [88]		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]							144 [65,5]	
GHA 2 JP 3-B ● GHA 2 JP 4-B ■	54 [169]							144 [65,5]	
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 ■								180 [81,6]	
GHA 2 NM 3-B ● GHA 2 NM 4-B ■	80 [251]							180 [81,6]	
GHA 3 NM 3-B ● GHA 3 NM 4-B ■								180 [81,6]	
GHA 2 NP 3-B ● GHA 2 NP 4-B ■	99 [313]							180 [81,6]	
GHA 3 NP 3-B ● GHA 3 NP 4-B ■								180 [81,6]	10.7

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

THE GORMAN-RUPP COMPANY • MANSFIELD, OHIO
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.

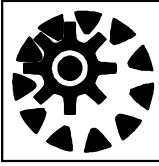
NOTE: PROPER PUMP APPLICATION REQUIRES CONSIDERATION OF ADDITIONAL FACTORS. PLEASE REVIEW APPLICATION GUIDE IN SECTION 500 OR CONSULT THE FACTORY.

GHA

**FOR GHA DRIVE OPTIONS
AND DIMENSIONS**

SEE

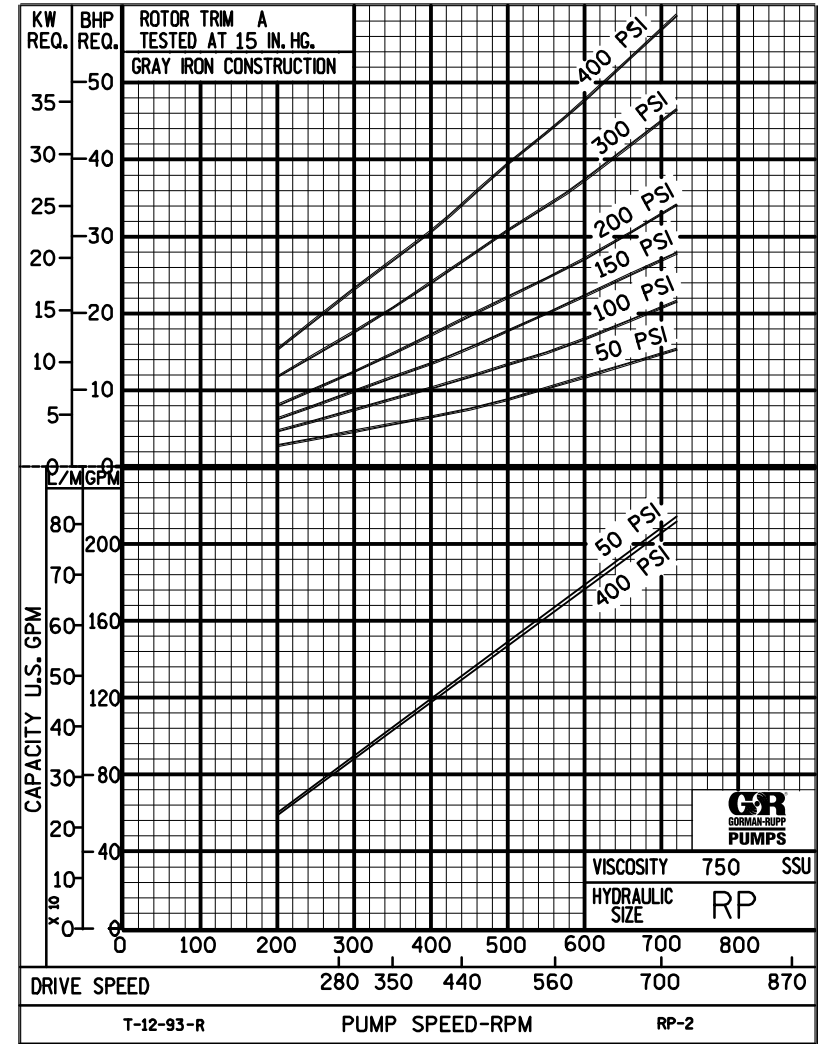
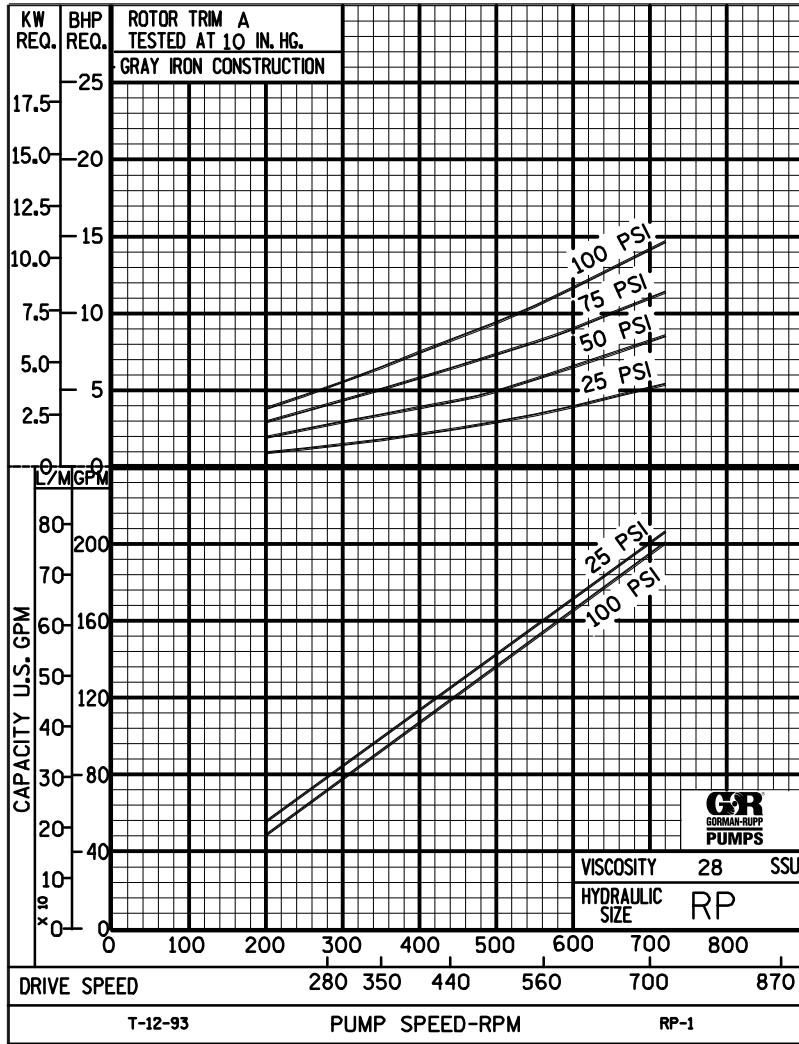
SECTION 545



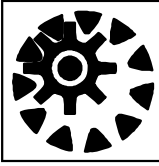
PERFORMANCE CURVES

SPEED VS. CAPACITY/HORSEPOWER

RP Hydraulic Size



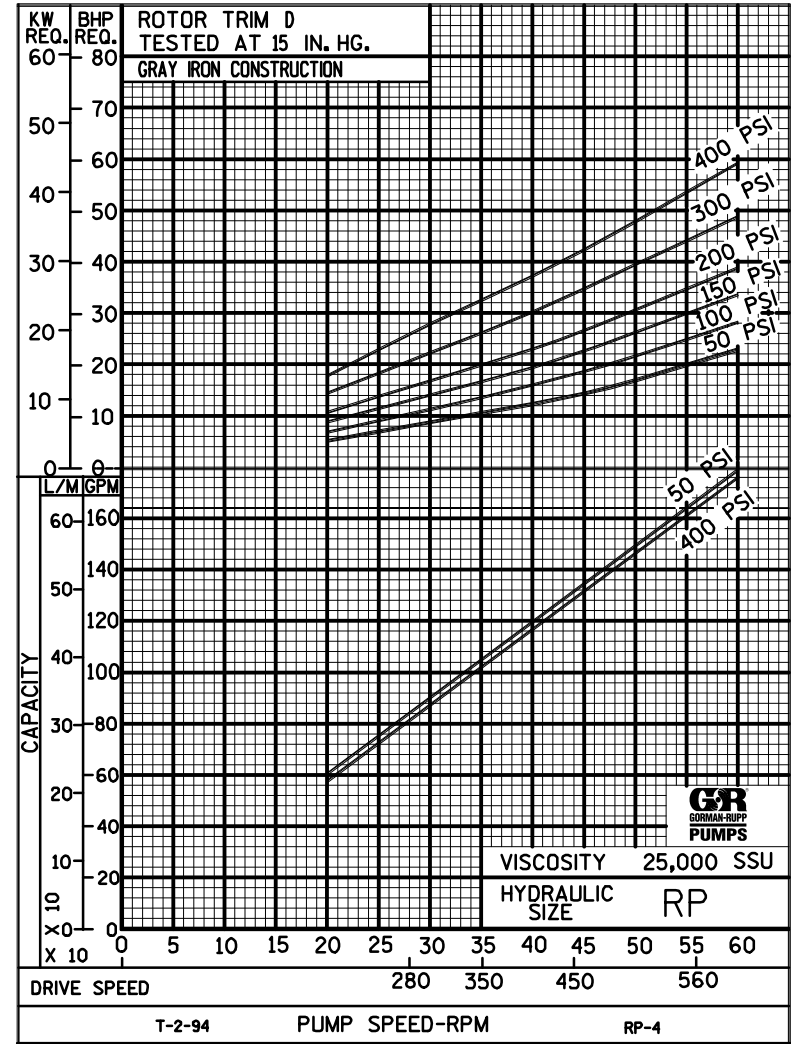
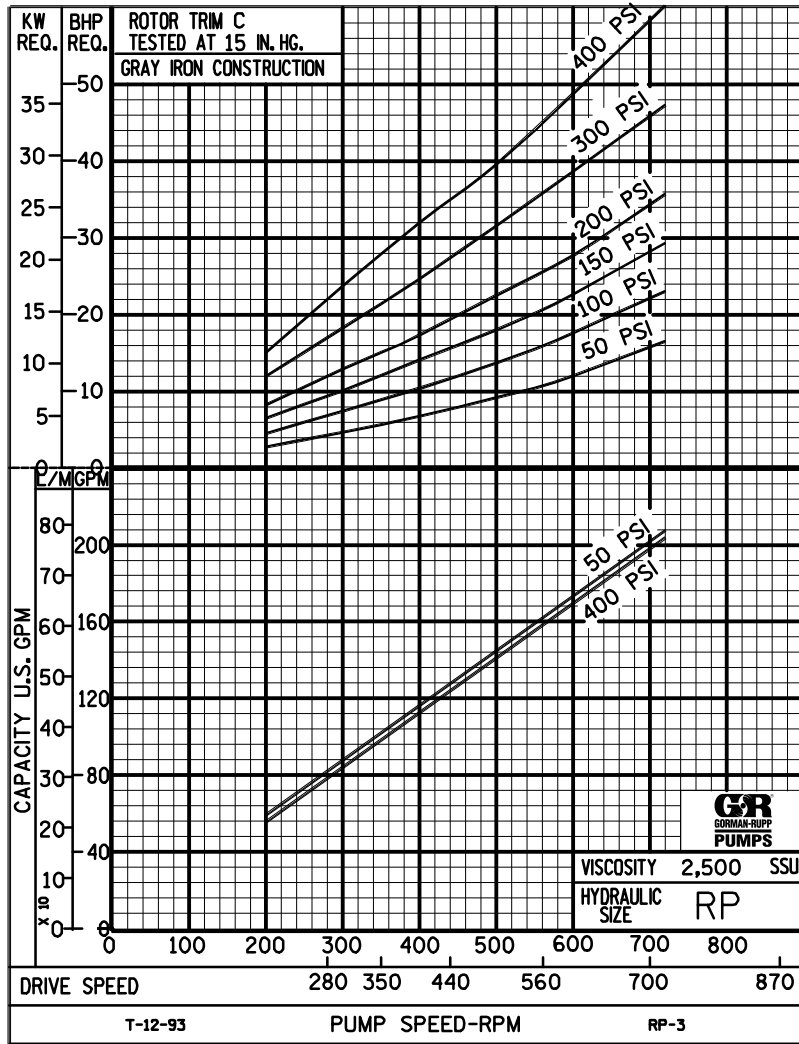
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PERFORMANCE CURVES

SPEED VS. CAPACITY/HORSEPOWER

RP Hydraulic Size



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RP

PUMP HYDRAULIC SIZE CHART

SEC. 500

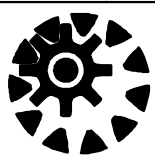
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January 2010

**215 GPM
720 RPM**

NOMINAL		ROTOR TRIM	VISCOSITY (SSU)	N.I.P.R. (PSIA)	FRICTION PIPE LOSS (PSI/FT) <small>(Based on Sch 40 Steel Pipe)</small>					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		HEAVY DUTY								
							50	75	100	150	200	25	50	75	100	150	200	300	400				
215	720	STD	28	4.0	.31	.13	.04	.01	-	62	87	123	185		206	204	202	200					
			32		.33	.13	.04	.01	-						5.9	8.1	12	15					
			38	4.0	.35	.14	.05	.01	-	64	90	126	187		208	206	204	202	196				
			50		.38	.16	.05	.01	-						7.3	9.3	13	16	23				
			70	4.0	.42	.18	.06	.02	-	69	95	130	192	251		210	208	208	206	202	198		
			100		.46	.20	.07	.02	-							9.3	12	15	18	25	30		
			150	4.0	.51	.22	.08	.02	-	74	99	134	196	258		212	212	210	210	208	204	202	200
			200		.55	.24	.08	.02	-							11	13	17	20	26	32	45	58
			300	4.0	.61	.27	.10	.03	-	80	105	140	202	267		214	212	212	212	210	208	206	206
			500		.72	.31	.11	.02	-							12	15	18	21	28	34	46	59
		750	4.0	.51	.25	.10	.04	.01	84	110	144	206	274		214	214	214	214	214	212	212	212	
		1,000		.68	.33	.14	.05	.01							13	16	19	22	29	35	47	60	
		2,000	4.3	1.35	.66	.28	.09	.02	92	118	151	213	287		208	208	208	206	206	206	206	204	
		3,500		2.37	1.16	.49	.16	.03							15	17	20	24	30	36	48	61	
		5,000	4.7	3.38	1.66	.70	.24	.05	97	123	156	218	294		208	208	208	208	206	206	206	204	
		7,500		5.08	2.49	1.05	.35	.07							16	19	22	25	32	39	50	63	
		10,000	5.2	6.77	3.32	1.39	.47	.09	102	127	160	222	301		210	208	208	208	208	208	206	206	
		15,000		10.2	4.99	2.09	.71	.14							18	20	24	28	34	41	53	66	
		20,000																					
		25,000																					
50,000																							
75,000																							
100,000																							
150,000																							
200,000																							
250,000																							

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



RP

PUMP HYDRAULIC SIZE CHART

SEC. 500

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January 2010

**190 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													
190	640	STD	28	3.2	.24	.10	.03	.01	-	60	85	122	180		184	181	179	177														
			32		.26	.10	.04	.01	-						4.9	7.3	10	13														
			38	3.2	.27	.11	.04	.01	-	63	88	124	183		185	182	180	179	174													
			50		.30	.13	.04	.01	-						6.2	8.9	12	15	19													
			70	3.2	.33	.14	.05	.01	-	67	92	128	187	248	187	185	183	178	176													
			100		.37	.16	.06	.02	-						7.9	10	13	16	21	28												
			150	3.2	.41	.17	.06	.02	-	71	97	132	191	253	189	187	186	185	183	181	179	176										
			200		.44	.19	.07	.02	-						8.9	12	15	18	22	29	39	50										
			300	3.2	.49	.21	.08	.02	-	77	102	136	196	260	190	189	188	188	187	185	184	183										
			500		.58	.25	.06	.02	-						10	13	16	19	24	30	40	50										
		750	3.2	.45	.22	.09	.03	.01	81	107	140	200	266	191	191	190	190	189	188	188	187											
		1,000		.60	.29	.12	.04	.01						11	13	16	19	24	30	41	51											
		2,000	3.5	1.19	.59	.25	.08	.02	88	114	146	207	276	186	185	185	184	183	183	182	180											
		3,500		2.09	1.03	.43	.15	.03						12	14	18	20	26	31	42	54											
		5,000	3.9	2.98	1.46	.61	.21	.04	93	119	150	211	281	187	186	185	185	184	184	184	181											
		7,500		4.47	2.20	.92	.31	.06						13	16	19	22	28	33	43	57											
		10,000	4.4	5.96	2.93	1.23	.41	.08	97	123	154	215	287	187	186	186	185	185	185	185	182											
		15,000		8.94	4.39	1.84	.62	.12						15	18	21	24	30	35	46	60											
		20,000	5.1	11.9	5.86	2.46	.83	.16	100	126	158	218	292	187	187	186	186	186	186	186	183											
		25,000		14.9	7.32	3.07	1.04	.20						17	20	23	27	32	37	48	63											
50,000																																
75,000																																
100,000																																
150,000																																
200,000																																
250,000																																

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

