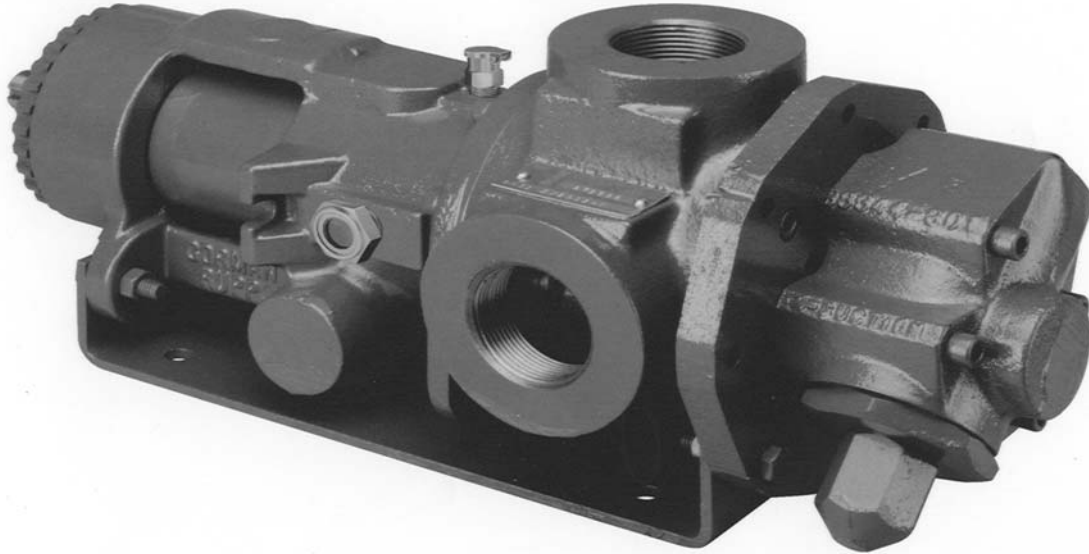


GHA SERIES
EXTREME DUTY ABRASIVE
G, J, N, R & S HYD SIZE
ROTARY GEAR PUMP



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]						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

Standard Models Cont'd

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.

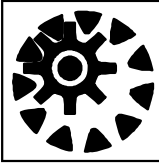
NOTE: PROPER PUMP APPLICATION REQUIRES CONSIDERATION OF ADDITIONAL FACTORS. PLEASE REVIEW APPLICATION GUIDE IN SECTION 500 OR CONSULT THE FACTORY.

GHA

**FOR GHA DRIVE OPTIONS
AND DIMENSIONS**

SEE

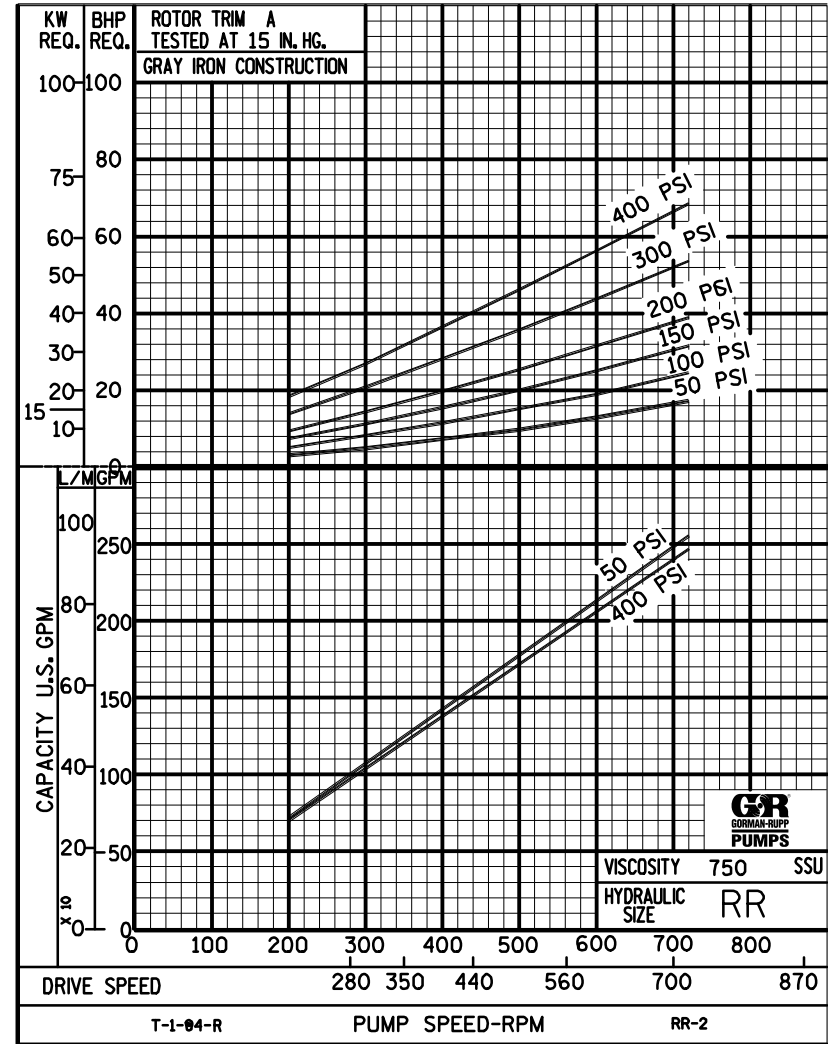
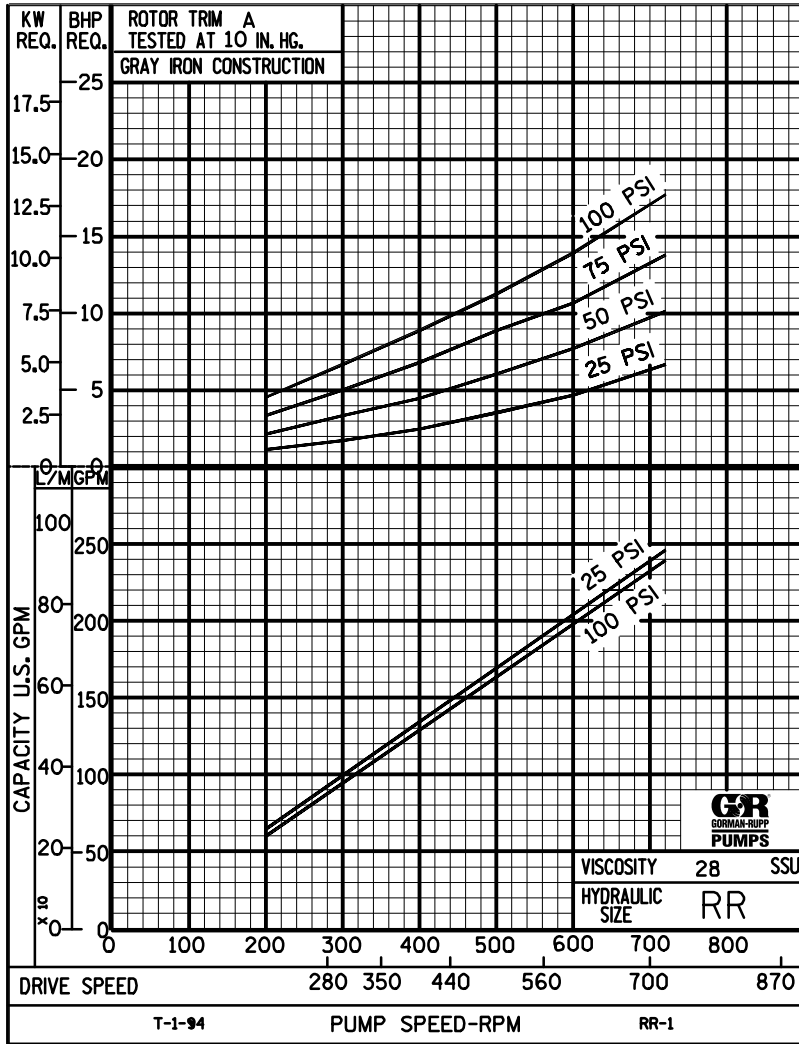
SECTION 545



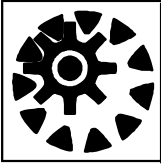
PERFORMANCE CURVES

SPEED VS. CAPACITY/HORSEPOWER

RR Hydraulic Size



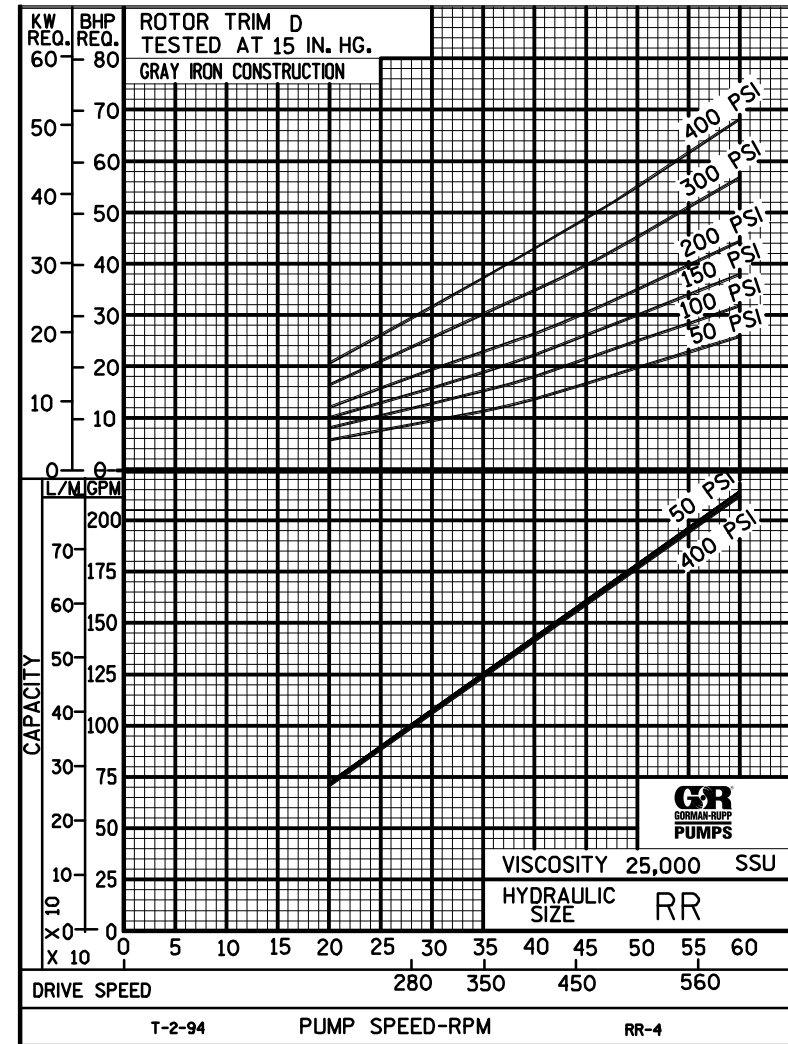
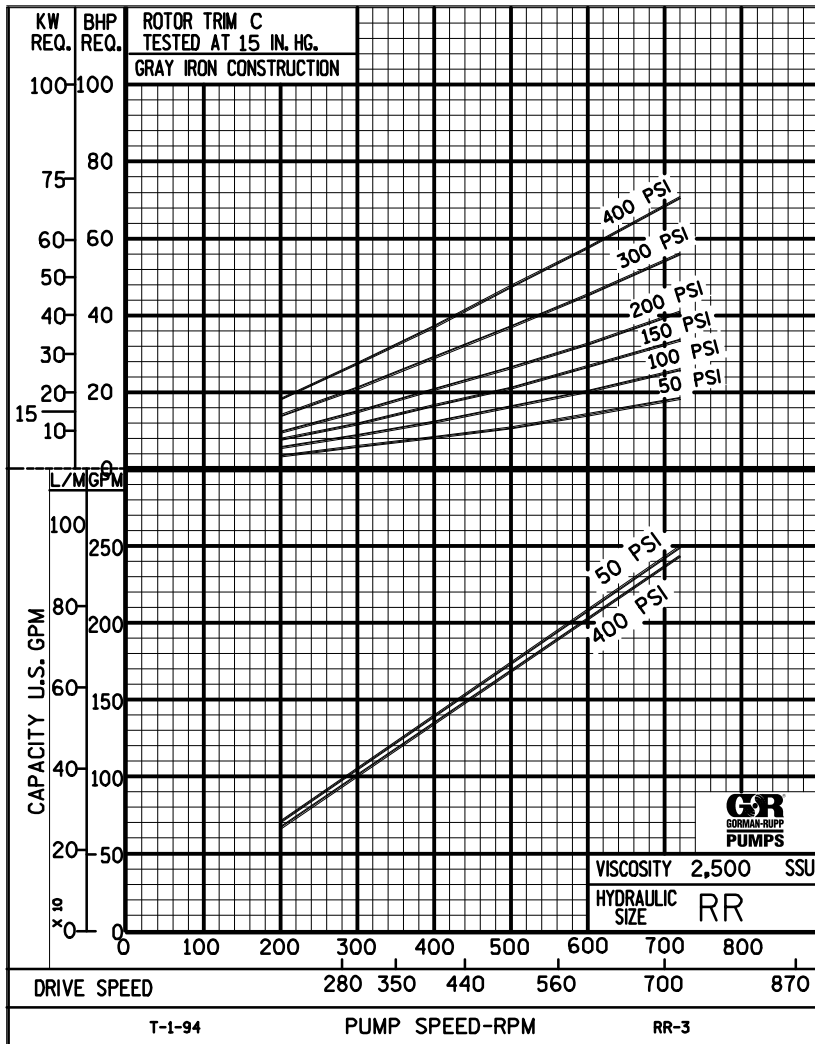
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PERFORMANCE CURVES

SPEED VS. CAPACITY/HORSEPOWER

RR Hydraulic Size



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RR

PUMP HYDRAULIC SIZE CHART

SEC. 500

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January 2010

185 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			
185	520	STD	28	2.6	.24	.10	.03	.01	-	59	85	122	179		177	173	172	171						
			32		.26	.10	.04	.01	-						3.9	6.5	9.4	12						
			38	2.6	.27	.11	.04	.01	-	62	88	124	182		178	174	174	173	169					
			50		.30	.13	.04	.01	-						4.9	7.3	11	14	18					
			70	2.6	.33	.14	.05	.01	-	66	91	127	186	247	181	178	177	176	173	170				
			100		.37	.16	.06	.02	-						6.1	8.6	12	15	20	24				
			150	2.6	.41	.17	.06	.02	-	70	96	131	190	252	183	181	180	179	177	175	171	166		
			200		.44	.19	.07	.02	-						6.9	9.2	13	17	21	25	35	46		
			300	2.6	.49	.21	.08	.02	-	76	101	135	195	259	185	183	182	182	180	178	177	173		
			500		.58	.25	.06	.02	-						7.8	10	14	18	22	26	37	48		
		750	2.7	.45	.22	.09	.03	.01	80	106	139	199	264	186	185	184	184	182	180	179	177			
		1,000		.60	.29	.12	.04	.01						7.9	11	14	18	22	27	38	49			
		2,000	3.5	1.19	.59	.25	.08	.02	87	113	145	206	274	182	181	181	181	180	179	177	175			
		3,500		2.09	1.03	.43	.15	.03						10	12	16	18	23	29	40	50			
		5,000	4.1	2.98	1.46	.61	.21	.04	92	118	149	210	280	183	183	182	182	182	180	179	177			
		7,500		4.47	2.20	.92	.31	.06						13	15	18	20	26	31	42	52			
		10,000	4.7	5.96	2.93	1.23	.41	.08	96	122	153	214	285	185	184	184	183	183	182	181	179			
		15,000		8.94	4.39	1.84	.62	.12						16	19	22	24	29	35	45	55			
		20,000	5.2	11.9	5.86	2.46	.83	.16	99	125	156	217	289	186	186	185	185	185	184	184	181			
		25,000		14.9	7.32	3.07	1.04	.20						19	21	24	26	32	37	48	58			
50,000	7.2	29.8	14.7	6.14	2.07	.40	106	132	161	223	297	186	186	185	185	185	184	184	181					
75,000		44.8	22.0	9.21	3.11	.60						26	29	31	34	39	45	56	66					
100,000																								
150,000																								
200,000																								
250,000																								

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



RR

PUMP HYDRAULIC SIZE CHART

SEC. 500

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January 2010

125 GPM
350 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				
125	350	STD	28	1.6	.11	.05	.02	-	-	55	83	119	176	117	114	113	112						
			32		.12	.05	.02	-	-					1.9	4.1	6.1	7.9						
			38	1.6	.13	.05	.02	.01	-	57	85	121	177	118	117	115	114	111					
			50		.15	.06	.02	.01	-					2.6	4.6	6.6	8.6	13					
			70	1.6	.16	.07	.02	.01	-	60	88	123	180	236	120	119	118	117	115	113			
			100		.18	.08	.03	.01	-					3.4	5.2	7.2	9.4	13	16				
			150	1.6	.21	.09	.03	.01	-	64	91	125	182	239	122	121	120	120	118	117	115	113	
			200		.22	.10	.03	.01	-					3.9	5.7	7.6	10	14	17	24	31		
			300	1.6	.25	.11	.02	.01	-	68	95	128	185	242	124	123	123	122	121	120	119	118	
			500		.20	.10	.04	.01	-					3.9	5.9	8.1	10	14	17	25	32		
		750	1.7	.30	.15	.06	.02	-	72	98	130	187	244	125	124	124	124	123	122	121	120		
		1,000		.40	.20	.08	.03	.01					4.1	6.2	8.4	10	14	17	25	32			
		2,000	2.2	.81	.40	.17	.06	.01	78	104	134	191	249	123	122	122	122	121	120	118	117		
		3,500		1.41	.69	.29	.10	.02					5.1	7.4	9.4	11	15	19	26	33			
		5,000	2.7	2.01	.99	.42	.14	.03	81	107	136	194	252	123	123	123	123	122	121	119	118		
		7,500		3.02	1.48	.62	.21	.04					6.2	8.3	11	12	16	20	27	34			
		10,000	3.4	4.03	1.98	.83	.28	.05	85	110	139	196	254	124	124	124	123	123	122	121	120		
		15,000		6.04	2.97	1.25	.42	.08					7.7	10	12	14	18	21	29	36			
		20,000	4.1	8.06	3.96	1.66	.56	.11	87	112	140	197	256	125	125	125	124	124	124	123	122		
		25,000		10.1	4.95	2.08	.70	.14					8.8	11	13	15	19	23	30	37			
50,000	6.2	20.1	9.90	4.15	1.40	.27	93	117	143	202	260	125	125	125	124	124	124	123	122				
75,000		30.2	14.9	6.23	2.10	.41					13	15	17	19	23	27	34	41					
100,000	8.1	40.3	19.8	8.30	2.80	.54	96	120	146	204	262	125	125	125	124	124	124	123	122				
150,000		60.4	29.7	12.5	4.20	.82					17	19	21	24	27	31	38	45					
200,000	9.8	80.6	39.6	16.6	5.60	1.09	98	122	148	205	264	125	125	125	124	124	124	123	122				
250,000		-	-	-	-	-					21	23	26	28	31	35	42	50					

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