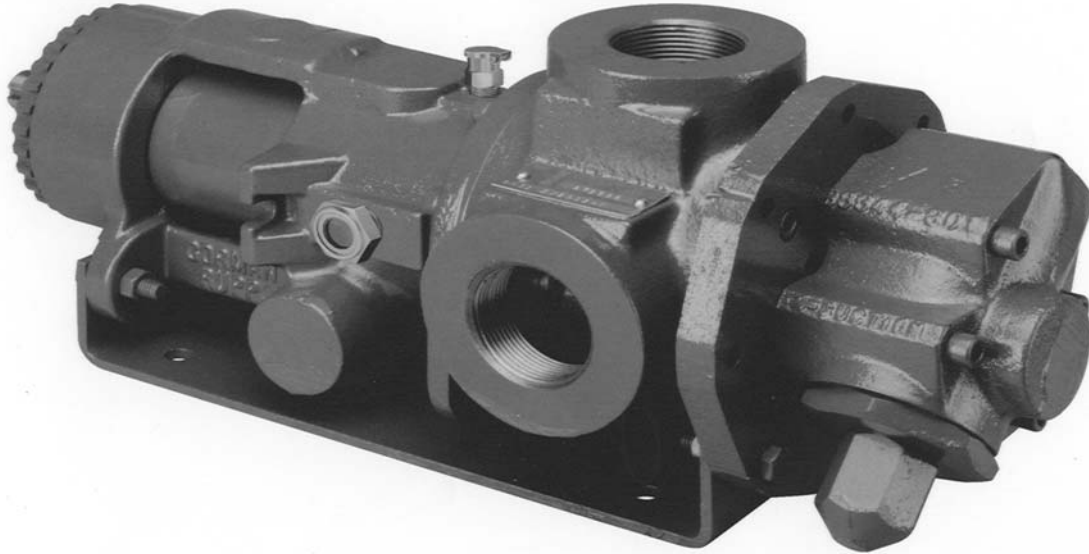


**GHA SERIES
 EXTREME DUTY ABRASIVE
 G, J, N, R & S HYD SIZE
 ROTARY GEAR PUMP**



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

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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.

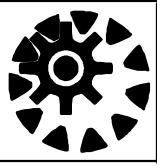
NOTE: PROPER PUMP APPLICATION REQUIRES CONSIDERATION OF ADDITIONAL FACTORS. PLEASE REVIEW APPLICATION GUIDE IN SECTION 500 OR CONSULT THE FACTORY.

GHA

**FOR GHA DRIVE OPTIONS
AND DIMENSIONS**

SEE

SECTION 545

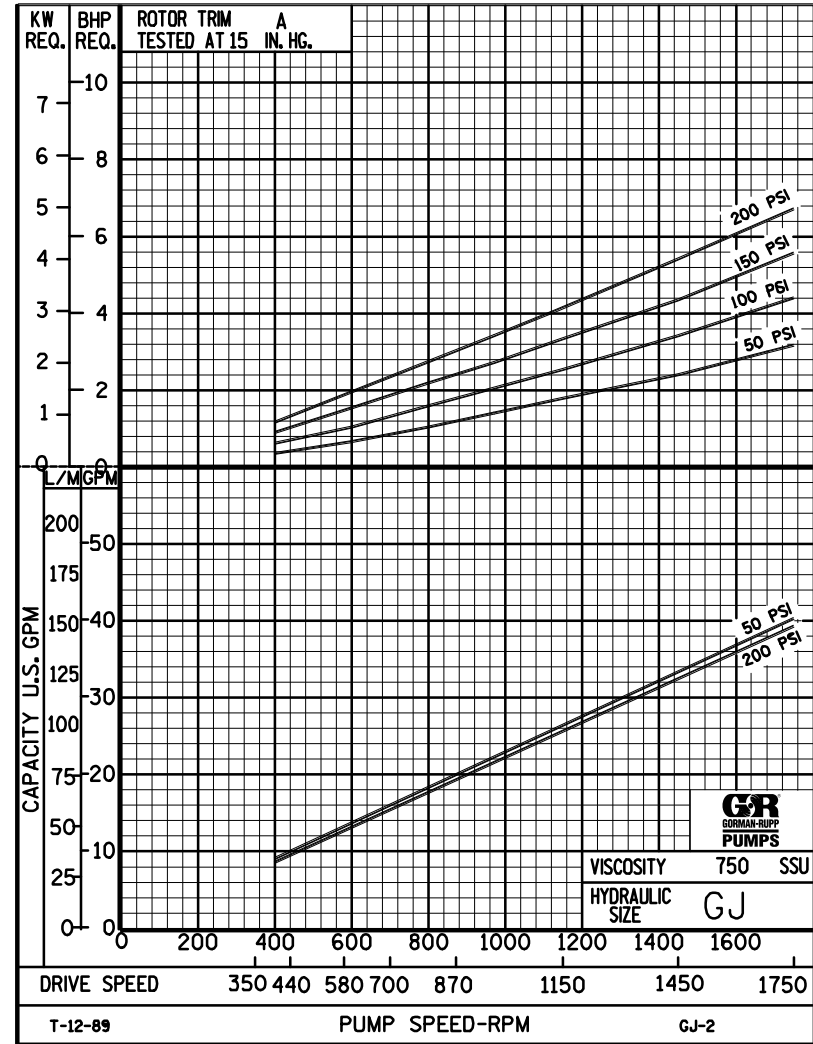
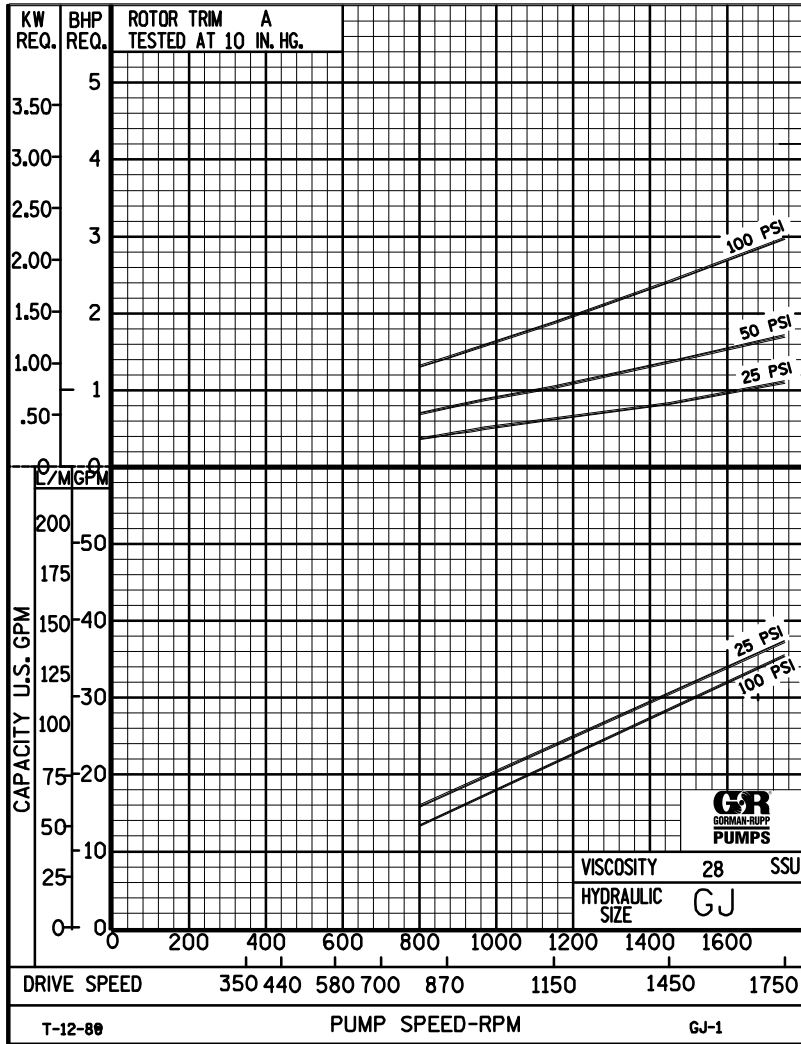


PERFORMANCE CURVES

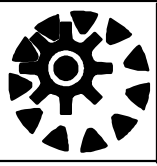
SPEED VS. CAPACITY/HORSEPOWER

GJ

Hydraulic Size



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PERFORMANCE CURVES

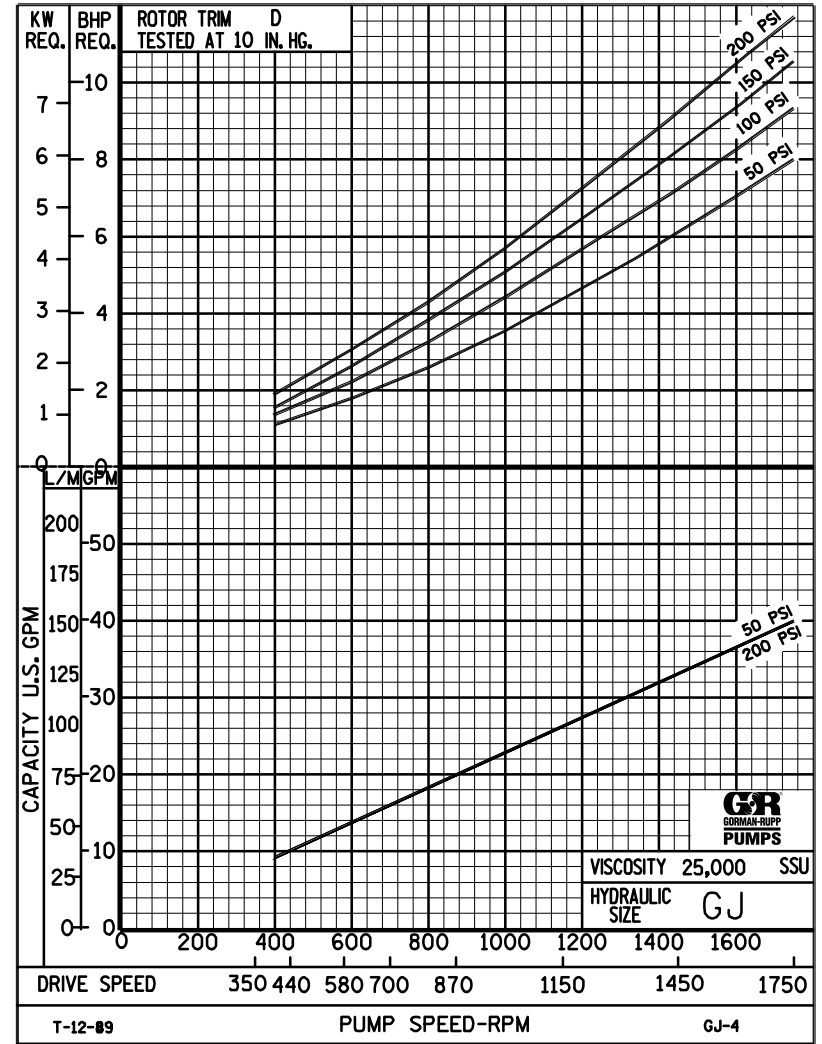
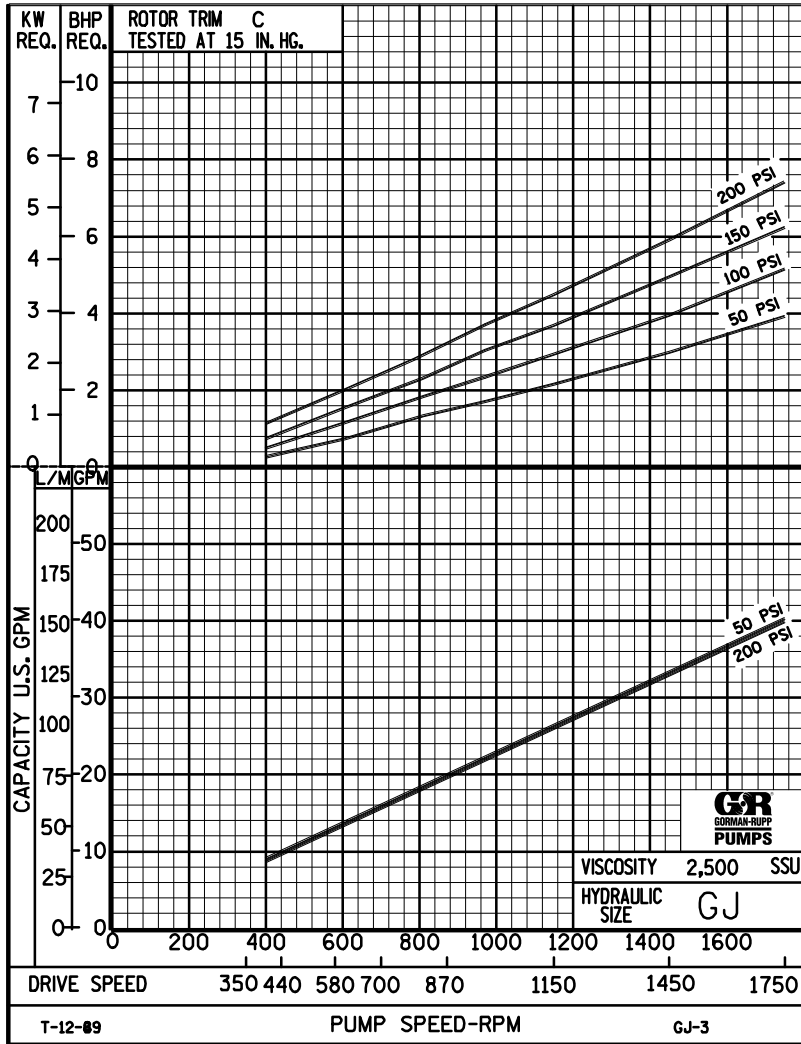
SPEED VS. CAPACITY/HORSEPOWER

GJ Hydraulic Size

SEC. 500

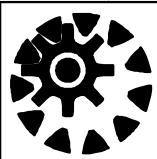
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 GORMAN-RUPP OF CANADA LIMITED • ST. THOMAS, ONTARIO, CANADA

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GJ

PUMP HYDRAULIC SIZE CHART

SEC. 500

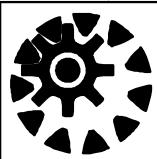
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**38 GPM
1750 RPM**

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)										
					3/4"	1"	1 1/4"	1 1/2"	2"	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						
38	1750	STD	28	4.5	.02	.01	.01	.01	.01	74	100	127				37	36	36	35						
			32		.88	.28	.08	.04	.01							1.1	1.7	2.4	3.0						
			38	4.5	1.12	.35	.10	.05	.02	74	100	128	180			38	37	37	37	36					
			50		1.33	.44	.12	.06	.02							1.5	2.0	2.6	3.2	4.5					
			70	4.5	1.45	.46	.13	.06	.02	76	101	128	182	240		39	38	38	38	37	36				
			100		1.74	.56	.16	.08	.03							1.5	2.1	2.8	3.4	4.7	6.0				
			150	4.5	1.91	.63	.17	.08	.03							39	39	39	38	38	38				
			200		2.26	.72	.18	.09	.03	78	103	130	184	242		1.9	2.5	3.1	3.7	4.9	6.1				
			300	4.5	2.45	.81	.19	.10	.04	78	103	132	184	244		40	40	39	39	39	38				
			500		2.82	.92	.31	.17	.06							2.1	2.8	3.6	4.3	5.4	6.5				
		750	4.5	3.64	1.39	.46	.25	.09	80	105	134	186	246		40	40	40	40	39	39					
		1,000		4.85	1.85	.62	.33	.12							2.3	3.2	3.8	4.4	5.6	6.7					
				"C"	2,000	5.9	9.69	3.69	1.23	.67	.25	80	105	136	186	247		40	40	40	40	39	39		
					3,500		17.0	6.46	2.16	1.17	.43							3.3	3.9	4.6	5.1	6.3	7.4		
				"C"	5,000	6.8	24.3	9.23	3.08	1.66	.61	86	106	136	186	247		40	40	40	40	40	40		
					7,500		36.4	13.9	4.62	2.50	.92							4.8	5.3	5.9	6.5	7.6	8.8		
				"C"	10,000	7.7	48.5	18.5	6.16	3.33	1.23	92	117	142	192	247		40	40	40	40	40	40		
					15,000		72.7	27.7	9.24	4.99	1.84							6.0	6.7	7.2	7.8	9.0	10		
				"D"	20,000	8.5	97.0	36.9	12.3	6.65	2.45	98	123	148	198	248		40	40	40	40	40	40		
					25,000		121	46.1	15.4	8.31	3.06							7.4	8.0	8.7	9.4	11	12		
		"D"	50,000																						
			75,000																						
			100,000																						
			150,000																						
			200,000																						
		"D"	250,000																						

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



GJ

PUMP HYDRAULIC SIZE CHART

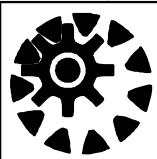
SEC. 500

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25 GPM
1150 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)												
					3/4"	1"	1 1/4"	1 1/2"	2"	LOW PRES R/V			HI PRES R/V		MEDIUM DUTY AND HEAVY DUTY				HEAVY DUTY ONLY								
25	1150	STD	28	2.5	.01	.01	.01	.01	.01	66	92	118			23	23	22	21									
			32		.42	.13	.04	.02	.01						.63	1.0	1.5	1.9									
			38	2.5	.53	.17	.05	.02	.01	66	92	118	170			24	24	23	22	21							
			50		.64	.21	.06	.03	.01							.95	1.2	1.6	2.0	2.6							
			70	2.5	.70	.23	.06	.03	.01	67	93	120	170	230			25	25	24	23	23	22					
			100		.85	.27	.08	.04	.01								1.2	1.4	1.7	2.1	3.0	3.7					
			150	2.5	.94	.32	.08	.04	.01	67	93	122	172	232			26	26	25	24	24	22					
			200		.97	.35	.10	.06	.02								1.3	1.5	1.9	2.3	3.1	3.8					
			300	2.5	.99	.37	.13	.07	.03	68	95	122	174	234			26	26	25	25	25	24					
			500		1.60	.61	.21	.11	.04								1.3	1.7	2.3	2.5	3.5	4.0					
		750	2.5	2.39	.91	.31	.17	.06	68	95	124	174	235			26	26	26	26	25	25						
		1,000		3.19	1.22	.41	.22	.08								1.3	1.8	2.2	2.5	3.3	4.2						
		2,000	3.4	6.38	2.43	.81	.44	.16	69	98	125	175	235			26	26	26	26	26	26						
		3,500		11.2	4.25	1.42	.77	.28								1.8	2.3	2.8	3.2	3.9	4.7						
		5,000	4.0	16.0	6.07	2.03	1.09	.41	78	105	130	180	237			26	26	26	26	26	26						
		7,500		23.9	9.10	3.04	1.64	.61								2.4	2.9	3.4	3.7	4.7	5.2						
		10,000	4.7	31.9	12.2	4.06	2.19	.81	87	112	137	187	237			26	26	26	26	26	26						
		15,000		47.8	18.2	6.08	3.28	1.21								2.9	3.7	4.2	4.5	5.4	6.0						
		20,000	5.2	63.8	24.3	8.11	4.38	1.61	87	112	137	187	237			26	26	26	26	26	26						
		25,000		79.7	30.4	10.2	5.47	2.02								4.0	4.5	4.9	5.3	6.1	6.8						
50,000																											
75,000																											
100,000																											
150,000																											
200,000																											
250,000																											

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



GJ

PUMP HYDRAULIC SIZE CHART

SEC. 500

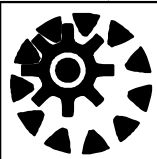
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**19 GPM
870 RPM**

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)											
					3/4"	1"	1 1/4"	1 1/2"	2"	LOW PRES R/V			HI PRES R/V		MEDIUM DUTY AND HEAVY DUTY				HEAVY DUTY ONLY							
19	870	STD	28	1.7	.01	.01	.01	.01	.01	64	90	116			17	16	16	15								
			32		.26	.08	.02	.01	.01						.45	.79	1.1	1.4								
			38	1.7	.33	.11	.03	.02	.01	64	90	116	168			18	17	17	16	15						
			50		.40	.13	.04	.02	.01							.58	.81	1.1	1.5	2.2						
			70	1.7	.44	.14	.04	.02	.01	65	91	118	168	228			19	18	18	17	17	16				
			100		.53	.17	.05	.02	.01								.61	.85	1.3	1.6	2.4	2.7				
			150	1.7	.58	.19	.06	.03	.01	65	91	120	170	230			19	19	18	18	18	17				
			200		.62	.23	.08	.04	.01								.65	.90	1.4	1.6	2.6	3.0				
			300	1.7	.74	.28	.10	.05	.02	66	93	120	172	232			19	19	19	19	18	18				
			500		1.21	.46	.16	.09	.03								.77	1.1	1.4	1.7	2.7	3.1				
		750	1.7	1.82	.69	.23	.13	.05	66	93	122	172	233			20	20	19	19	19	19					
		1,000		2.43	.92	.31	.17	.06								.81	1.3	1.6	1.9	2.9	3.3					
		2,000	2.5	4.85	1.85	.62	.33	.12	67	96	123	173	233			20	20	20	19	19	19					
		3,500		8.48	3.23	1.08	.58	.22								1.2	1.5	1.9	2.1	3.1	3.4					
		5,000	3.1	12.1	4.61	1.54	.83	.31	76	103	128	178	235			20	20	20	20	19	19					
		7,500		18.2	6.92	2.31	1.25	.46								1.6	2.0	2.3	2.6	3.5	3.8					
		10,000	3.7	24.3	9.23	3.08	1.66	.61	85	110	135	185	235			20	20	20	20	19	19					
		15,000		36.4	13.9	4.62	2.50	.92								2.1	2.5	2.9	3.3	3.9	4.4					
		20,000	4.1	48.5	18.5	6.16	3.33	1.23	85	110	135	185	235			19	19	19	19	19	19					
		25,000		60.6	23.1	7.70	4.16	1.53								2.8	2.9	3.2	3.6	4.1	5.0					
50,000	4.5	121	46.2	15.4	8.32	3.06	85	114	141	193	246			19	19	19	19	19	19							
75,000		-	-	-	-	-								3.7	4.1	4.5	4.9	5.2	5.6							
100,000																										
150,000																										
200,000																										
250,000																										

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



GJ

PUMP HYDRAULIC SIZE CHART

SEC. 500

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**13 GPM
580 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)											
					3/4"	1"	1 1/4"	1 1/2"	2"	LOW PRES R/V			HI PRES R/V		MEDIUM DUTY AND HEAVY DUTY				HEAVY DUTY ONLY							
13	580	STD	28	1.2	.01	.01	.01	.01	.01	58	84	109			11	11	10	10								
			32		.13	.04	.01	.01	.01						.36	.60	.81	1.0								
			38	1.2	.17	.06	.02	.01	.01	58	84	109	159			12	11	11	11	10						
			50		.21	.07	.02	.01	.01							.47	.63	.93	1.2	1.7						
			70	1.2	.23	.08	.03	.01	.01	60	86	111	161	219			12	12	12	11	11	10				
			100		.28	.09	.03	.01	.01								.50	.69	.99	1.3	1.8	2.0				
			150	1.2	.34	.11	.04	.02	.01	60	86	111	162	220			13	12	12	12	12	11				
			200		.43	.15	.06	.03	.01								.57	.80	1.1	1.3	1.8	2.1				
			300	1.2	.52	.20	.07	.04	.01	62	88	113	164	222			13	13	13	12	12	12				
			500		.83	.34	.11	.06	.02								.66	.92	1.2	1.4	1.8	2.2				
		750	1.2	1.26	.49	.16	.09	.03	62	88	113	164	222			13	13	13	13	12.9	12					
		1,000		1.68	.65	.21	.12	.05								.74	1.1	1.3	1.5	1.9	2.2					
		2,000	1.9	3.23	1.32	.44	.24	.09	63	90	115	165	223			13	13	13	13	12	12					
		3,500		6.10	2.31	.77	.42	.16								.92	1.3	1.5	1.7	2.1	2.2					
		5,000	2.4	8.25	3.28	1.11	.58	.23	67	92	117	165	223			13	13	13	13	13	13					
		7,500		13.1	5.01	1.61	.89	.33								1.2	1.7	1.9	2.1	2.5	2.9					
		10,000	2.9	17.8	6.85	2.22	1.21	.45	70	96	120	166	224			13	13	13	13	13	13					
		15,000		25.2	9.90	3.41	1.83	.68								1.4	1.7	2.0	2.2	2.6	3.0					
		20,000	3.3	34.4	13.0	4.33	2.28	.91	74	99	122	166	224			13	13	13	13	13	13					
		25,000		45.3	16.8	5.54	3.01	1.11								1.6	1.8	2.1	2.3	2.7	3.1					
50,000	5.5	85.2	32.6	11.2	6.22	2.21	84	109	132	176	234			13	13	13	13	13	13							
75,000		132	48.8	16.9	9.31	3.28								2.4	2.6	2.9	3.1	3.6	3.9							
100,000																										
150,000																										
200,000																										
250,000																										

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