

**GHC SERIES
 HEAVY DUTY COMPACT
 STEEL ROTARY GEAR PUMP**

This heavy duty series pump is ideal for refining, petrochemical and applications requiring extra strength or shock resistance. The steel construction conforms to ASTM designation A216 Grade WCB. Superior rotor shaft support and an integral, maintenance-free radial/thrust bearing, reduce deflection and wear.



The GHC steel series is designed for applications in the operating ranges noted on the model pages. These units are available with head jackets for temperature control, carbon graphite bushings for low viscosity liquids, silicon carbide bushings for wear resistance, and numerous shaft seal options described on the following pages. These units may be foot mounted or, by using a motor adaptor, direct connected to NEMA "C" flange motors.

FEATURES

- 400 PSI CAPABILITY
- BALL BEARING THRUST CONTROL
- ROTOR END CLEARANCE EXTERNALLY ADJUSTABLE
- HIGH STRENGTH, COMPUTER PROFILED GEARING FOR QUIET OPERATION
- MULTIPLE PORT POSITIONS
- INTERNAL SEAL VENT

OPERATING RANGE

CAPACITY	(GPM) :	(3 TO 107)
	[LPM] :	[11 TO 405]
PRESSURE	(PSI) :	[0 TO 300]
	[BAR] :	[0 TO 21]
VISCOSITY	(SSU) :	(28 TO 25,000)
	[cSt] :	[1 TO 5417]
TEMPERATURE	(F) :	(-20° TO 350°)
	[C] :	[-29° TO 177°]

APPLICATIONS

- USE WITH ANY CLEAN LIQUID COMPATIBLE WITH IRON/STEEL
- ★ BOOSTER SERVICE
 - ★ CIRCULATING
 - ★ FILTERING
 - ★ LUBRICATING
 - ★ TRANSFERRING

EXTERIOR	BACKHD	ROTOR & IDLER	HOUSING PORTS	BUSHING	IDLER PIN	SHAFT	SHAFT SEALING		ROTA-TION	INTERNAL RELIEF VALVE	
							MECH. SEAL ●	PACKING ■		MATERIAL	SETTING
STEEL ③	DUCTILE IRON	HIGH STRENGTH IRON	150# FLG GHC 180° GHS 90°	BRONZE	HARD STEEL	STEEL	VITON	CARBON FIBER	C.W.	STEEL	75 PSI [5 BAR]

Standard Models

G H C 3 JG 32 - B
G H S 3 JG 32 - B
 | | | | | | | | | | | |
 GEAR DUTY DESIGN PORT SIZE HYDRAULIC SEAL STYLE

MODEL NUMBER		NOM. CAPACITY - SPEED				MAXIMUM				SHIPPING DATA		
		MAXIMUM		ALTERNATIVE		DIFF. PRESSURE - PSI [BAR]			TEMP	Wt.	Vol.	
		GPM [LPM]	RPM 60 Hz [50 HZ]	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]			
GHC	GHS							LBS [KG]	CU. FT.			
GHC 1 DC32-B ① ● †		9 [28]		6 [19]						39 [17,7]	0.6	
GHC 1 DE32-B ① ● †		11 [35]		7 [22]						39 [17,7]	0.6	
GHC 1-1/2 GC32-B ● †	GHS 1-1/2 GC32-B ● † GHS 1-1/2 GC38-B ■ †	16 [50]	1750 [1460]	10 [32]	1150 [960]			300 [21]	GHC ● 350 [177]	71 [32,2]	2.9	
GHC 1-1/2 GF32-B ● †	GHS 1-1/2 GF32-B ● † GHS 1-1/2 GF38-B ■ †	23 [73]		15 [47]							71 [32,2]	2.9
GHC 1-1/2 GH32-B ● †	GHS 1-1/2 GH32-B ● † GHS 1-1/2 GH38-B ■ †	31 [98]		20 [63]							71 [32,2]	2.9
GHC 1-1/2 GJ32-B ② ● †	GHS 1-1/2 GJ32-B ② ● † GHS 1-1/2 GJ38-B ② ■ †	38 [120]		25 [79]		100 [7]	150 [10]				400 [204]	71 [32,2]
GHC 3 JG32-B ● †	GHS 3 JG32-B ● † GHS 3 JG38-B ■ †	40 [126]	1150 [960]	30 [95]	870 [725]				GHS ● 500 [260]	154 [69,8]	5.3	
GHC 3 JJ32-B ● †	GHS 3 JJ32-B ● † GHS 3 JJ38-B ■ †	56 [177]		36 [114]				300 [21]			154 [69,8]	5.3
GHC 3 JL32-B ● †	GHS 3 JL32-B ● † GHS 3 JL38-B ■ †	77 [243]		58 [183]							154 [69,8]	5.3
GHC 3 JP32-B ② ● †	GHS 3 JP32-B ② ● † GHS 3 JP38-B ② ■ †	107 [338]		81 [256]							200 [14]	154 [69,8]

STANDARD MODELS CONTINUED

NOTE: RECOMMENDED PORT SIZES ARE SHOWN IN **BOLDFACE**. EXAMPLE: **GHC 3 JG32-B, GHS 3 JG32-B**

- MECHANICAL SEAL
- LIPSEAL/PACKING
- † PORTS ARE COMPATIBLE WITH 150# ANSI FLANGES. ALL OTHER PORTS ARE TAPPED NPT FOR ANSI PIPE. OPTIONAL [DIN] FLANGES OR TAPPED [BSP] PORTS AVAILABLE FOR EXPORT MARKET.

- ① 3450 [2875] RPM PERMISSIBLE TO 1,000 SSU [220 cSt] AND 100 PSI [7 BAR]
- ② PUMP LIMITED TO 200 PSI MAXIMUM PRESSURE.
- ③ REFER TO REFERENCE SECTION FOR SPECIFIC CONSTRUCTION DETAILS.

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MODEL NUMBER		NOM. CAPACITY - SPEED				MAXIMUM			SHIPPING DATA		
		MAXIMUM		ALTERNATIVE		DIFF. PRESSURE - PSI [BAR]			TEMP.	Wt.	Vol.
		GPM	RPM	GPM	RPM	BELOW	38 TO	100 TO	° F	LBS	CU.
GHC	GHS	[LPM]	60 Hz	[LPM]	60 Hz	38 SSU	100 SSU	250,000 SSU	[° C]	[KG]	FT.
			[50 HZ]		[50 HZ]	[4 cSt]	[21 cSt]	[55,000 cSt]			
	GHS 2 NK32-B ● † GHS 2 NK38-B ■ †	99 [375]		60 [189]				300 [21]		200	5.3
										[90,7]	
	GHS 3 NK32-B ● † GHS 3 NK38-B ■ †	132 [500]	960 [960]	80 [252]	580 [480]					200	5.3
										[90,7]	
	GHS 2 NM32-B ● † GHS 2 NM38-B ■ †	165 [624]		99 [312]						200	5.3
										[90,7]	
	GHS 3 NP32-B ① ● † GHS 3 NP38-B ① ■ †	172 [542]	720 [600]	115 [362]		100 [7]	150 [10]	300 [21]	GHS ● 400 [204]	302	10.7
										[136,9]	
	GHS 3 RM32-B ● † GHS 3 RM38-B ■ †	215 [678]		143 [451]	480 [400]					302	10.7
										[136,9]	
	GHS 4 RM32-B ● † GHS 4 RM38-B ■ †	255 [804]		170 [536]						302	10.7
										[136,9]	
	GHS 2-1/2 RP32-B ● † GHS 2-1/2 RP38-B ■ †	295 [930]		196 [618]						302	10.7
										[136,9]	
	GHS 3 RP32-B ● † GHS 3 RP38-B ■ †	255 [804]		170 [536]						302	10.7
										[136,9]	
	GHS 4 RP32-B ● † GHS 4 RP38-B ■ †	295 [930]		196 [618]						302	10.7
										[136,9]	
	GHS 3 RR32-B ● † GHS 3 RR38-B ■ †	295 [930]		196 [618]						302	10.7
										[136,9]	
	GHS 4 RR32-B ● † GHS 4 RR38-B ■ †	295 [930]		196 [618]						302	10.7
										[136,9]	
	GHS 3 RS32-B ① ● † GHS 3 RS38-B ① ■ †	295 [930]		196 [618]						302	10.7
										[136,9]	
	GHS 4 RS32-B ① ● † GHS 4 RS38-B ① ■ †	295 [930]		196 [618]						302	10.7
										[136,9]	

STANDARD MODELS CONTINUED

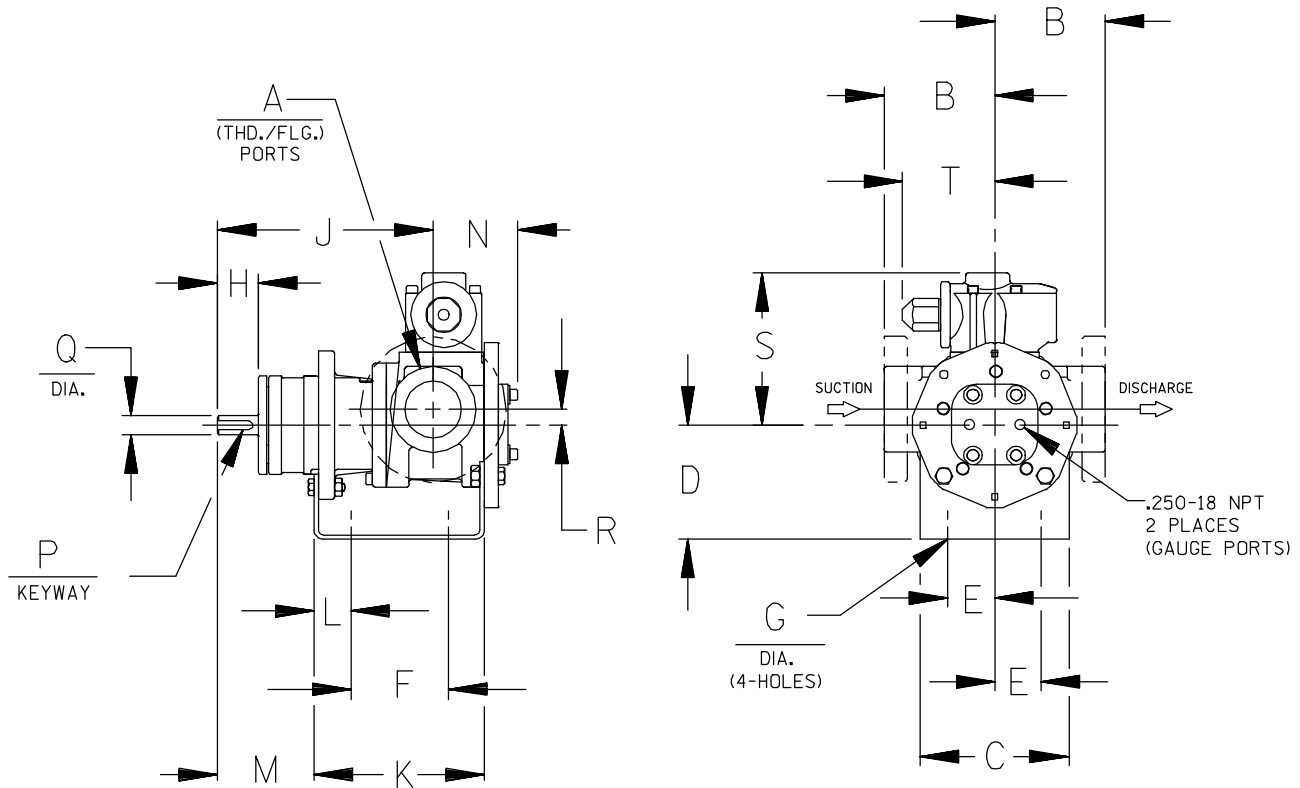
- MECHANICAL SEAL
- LIPSEAL/PACKING
- † PORTS ARE COMPATIBLE WITH 150# ANSI FLANGES. ALL OTHER PORTS ARE TAPPED NPT FOR ANSI PIPE. OPTIONAL [DIN] FLANGES OR TAPPED [BSP] PORTS AVAILABLE FOR EXPORT MARKET.

① PUMP LIMITED TO 200 PSI MAXIMUM PRESSURE.

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APPLICATION RECOMMENDATIONS:		
APPLICATION	OPTIONS REQUIRED (Select One From Each Row)	OPERATING LIMITATIONS
GHS ONLY HIGH TEMPERATURE	25U, 25V, OR 25W 35J – 35M (AS REQ'D) 40M, 40W 61H, OR 65Q 70K	TEMPERATURE: 675° F MAX. PRESSURE: 200 PSI MAX.
ASPHALT	35J–35M (AS REQ'D) 40M, 40W, 40G 41R, 41W 65S 70, 70K, 71K	TEMPERATURE:500° MAX.
JACKETED	40G, 40J, 40K, 40W, 41U, 41W	LIMIT JACKET PRESSURE TO 150 PSIG

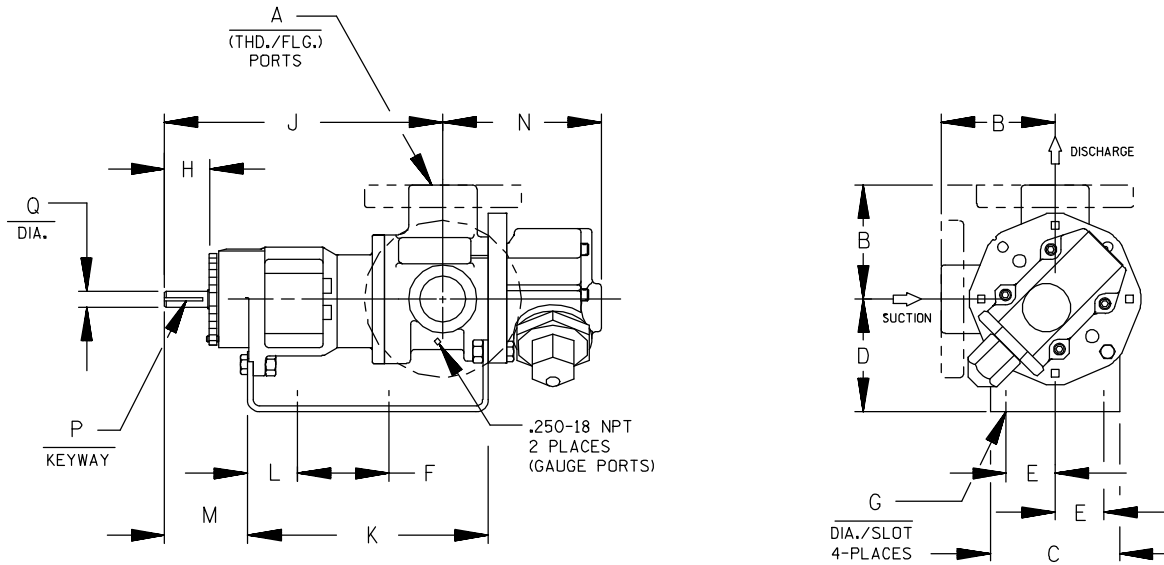
NOTE: PROPER PUMP APPLICATION REQUIRES CONSIDERATION OF ADDITIONAL FACTORS. PLEASE REVIEW APPLICATION GUIDE IN SECTION 500 OR CONSULT THE FACTORY.



CAD FILE NO.: 16458D

MODEL NUMBERS	PUMP DIMENSIONS - INCHES [MILLIMETERS]																	
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
GHC D	1"	4.00 † [102]	4.00 [102]	3.50* [89] 4.50 [114] 5.25 [133]	1.62 [41]	3.12 [79]	.41 [10]	1.16 [30]	6.19 [157]	5.04 [128]	.76 [19]	2.62 [66]	2.74 [70]	.12 [3] x .75 [19]	.50 [13]	.62 [16]	5.19 [132]	3.58 [91]
GHC G	1-1/2"	4.00 † [102]	5.88 [149]	3.50* [89] 4.50 [114] 5.25 [133] 6.25 [159]	1.62 [41]	4.00 [102]	.41 [10]	1.62 [41]	8.50 [216]	6.71 [170]	1.06 [27]	3.82 [97]	3.35 [85]	.19 [5] x 1.25 [32]	.75 [19]	.62 [16]	6.00 [152]	3.62 [92]
GHC J	3"	6.00* [152] † 6.31 † [160]	6.88 [175]	4.50 [114] 5.25* [133] 6.25 [159] 7.00 [178] 8.00 [203]	2.88 [73]	4.25 [108]	.44 [11]	2.50 [64]	12.12 [308]	9.75 [248]	1.75 [44]	5.50 [140]	4.66 [118]	.25 [6] x 2.00 [51]	1.00 [25]	1.12 [28]	9.06 [230]	6.75 [171]

* STANDARD DIMENSION
 PORTS ARE COMPATIBLE WITH 150# OR 300# ANSISTEEL FLANGES. ALL OTHER PORTS ARE TAPPED NPT
 † FOR ANSIPipe. OPTIONAL [DIN FLANGES OR TAPPED [BSP] PORTS AVAILABLE FOR EXPORT MARKET.
 NPT FOR ANSIPipe. OPTIONAL (DIN) FLANGES OR TAPPED (BSP) PORTS AVAILABLE FOR EXPORT MARKET.
 ‡ 90° HOUSING



CAD FILE NO.: 16669F

MODEL NUMBERS	PUMP DIMENSIONS - INCHES [MILLIMETERS]														
	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q
GHS G	1-1/2"	4.00 [102]	4.88 [124]	3.50* [89] 4.50 [114] 5.25 [133] 6.25 [159]	1.62 [41]	8.00 [203]	.41 [10]	1.62 [41]	12.06 [306]	10.72 [272]	1.52 [39]	3.35 [85]	5.70 [145]	.19 [5] x 1.25 [32]	.75 [19]
GHS J	3"	6.00† [152] 6.31 [160]	6.88 [175]	5.25* [133] 6.25 [159] 7.00 [178] 8.00 [203]	2.88 [73]	10.00 [254]	.44 [11]	2.50 [64]	15.68 [398]	14.31 [363]	2.77 [70]	4.48 [114]	8.50 [216]	.25 [6] x 2.00 [51]	1.00 [25]
GHS N	2"	5.25* [133] 5.38 [137]	8.00 [203]	4.50 [114] 5.25* [133]	2.88 [73]	10.00 [254]	.44 [11]	2.58 [66]	16.37 [416]	15.14 [385]	2.69 [68]	4.56 [116]	7.59 [193]	.25 [6] x 2.00 [51]	1.12 [32]
	3"	7.19 [183]		8.72* [221]											
GHS R	2-1/2"	7.19 [183]	10.50 [267]	7.00 [178]	3.75 [95]	13.75 [349]	.52 [13]	2.25 [57]	17.87 [454]	17.36 [441]	1.80 [46]	4.70 [119]	11.31 [287]	.38 [10] x 1.88 [48]	1.44 [37]
	3"														
	4"														

* STANDARD DIMENSION

† PORTS ARE COMPATIBLE WITH 150# OR 300# ANSISTEEL FLANGES. ALL OTHER PORTS ARE TAPPED NPT FOR ANSIPIPE. OPTIONAL (DIN) FLANGES OR TAPPED (BSP) PORTS AVAILABLE FOR EXPORT MARKET.

† 180° HOUSING

GHC/GHS

**FOR GHC DRIVE OPTIONS
AND DIMENSIONS**

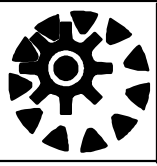
SEE

SECTION 540

**FOR GHS DRIVE OPTIONS
AND DIMENSIONS**

SEE

SECTION 545



PERFORMANCE CURVES

SPEED VS. CAPACITY/HORSEPOWER

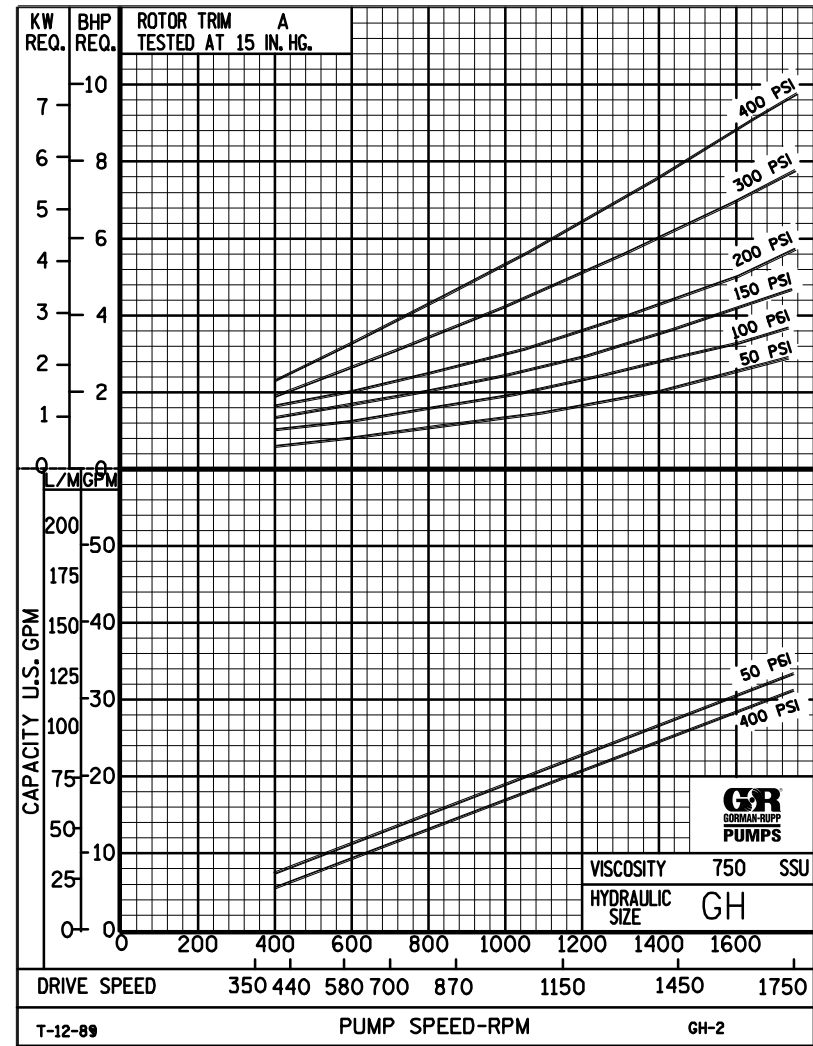
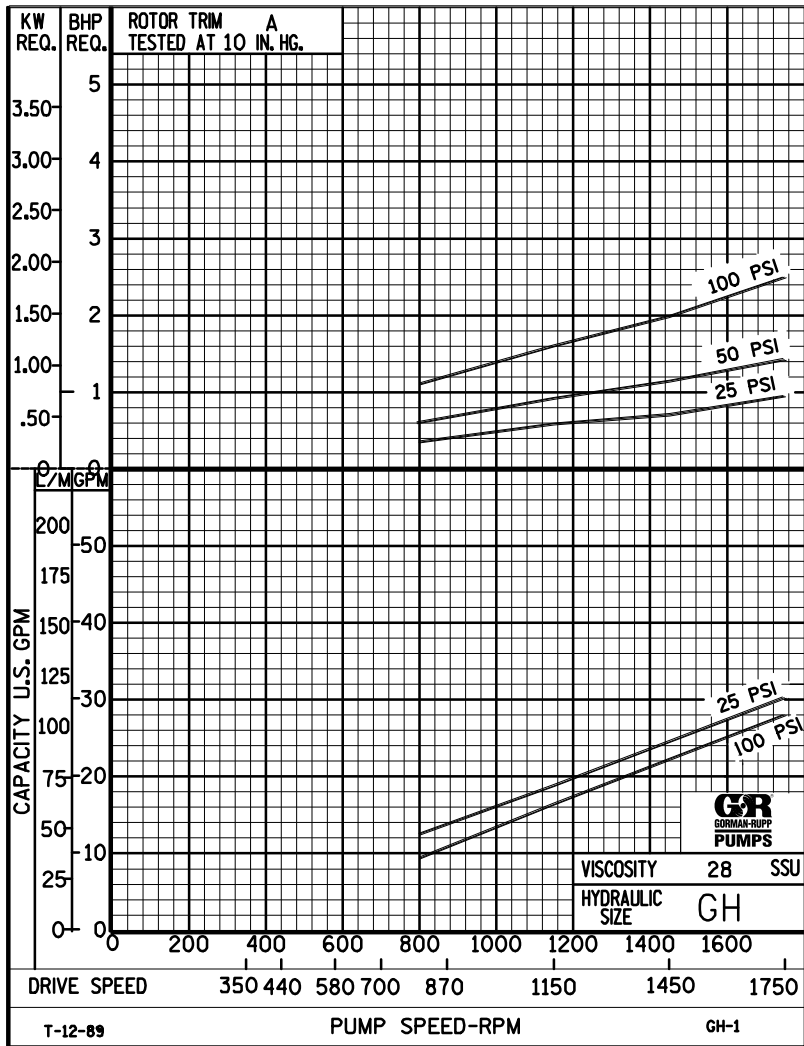
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Hydraulic Size

SEC. 500

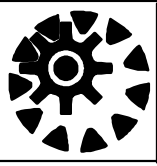
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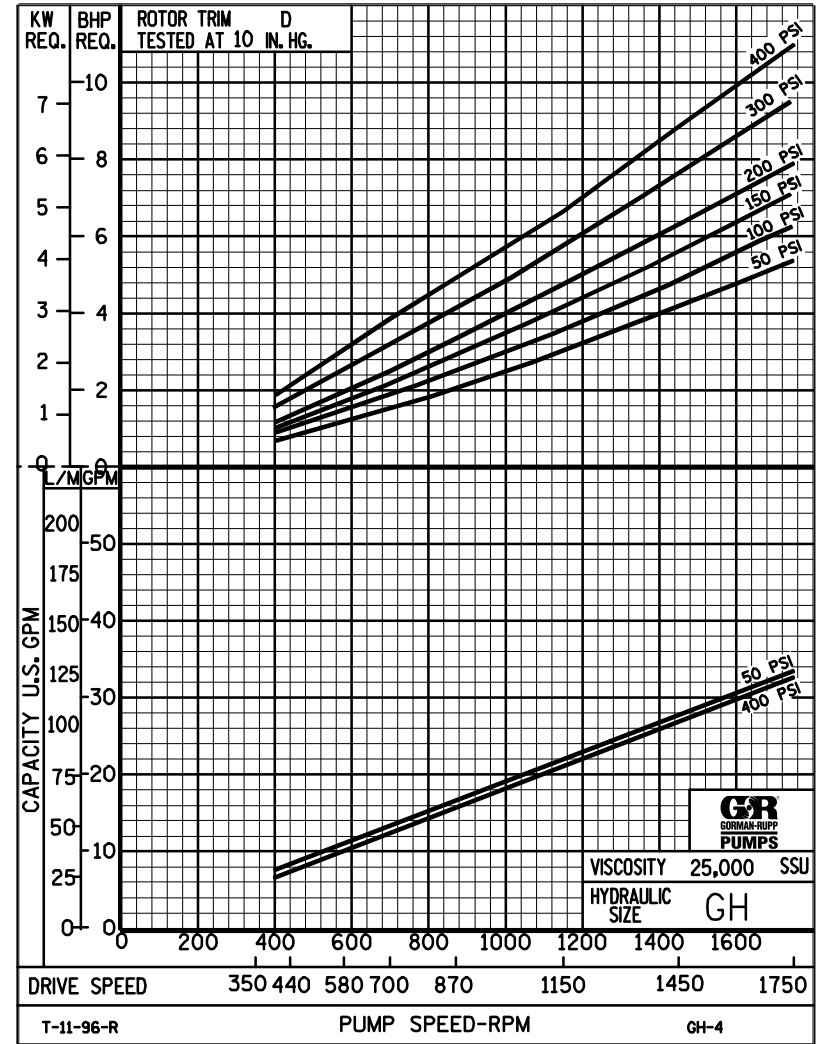
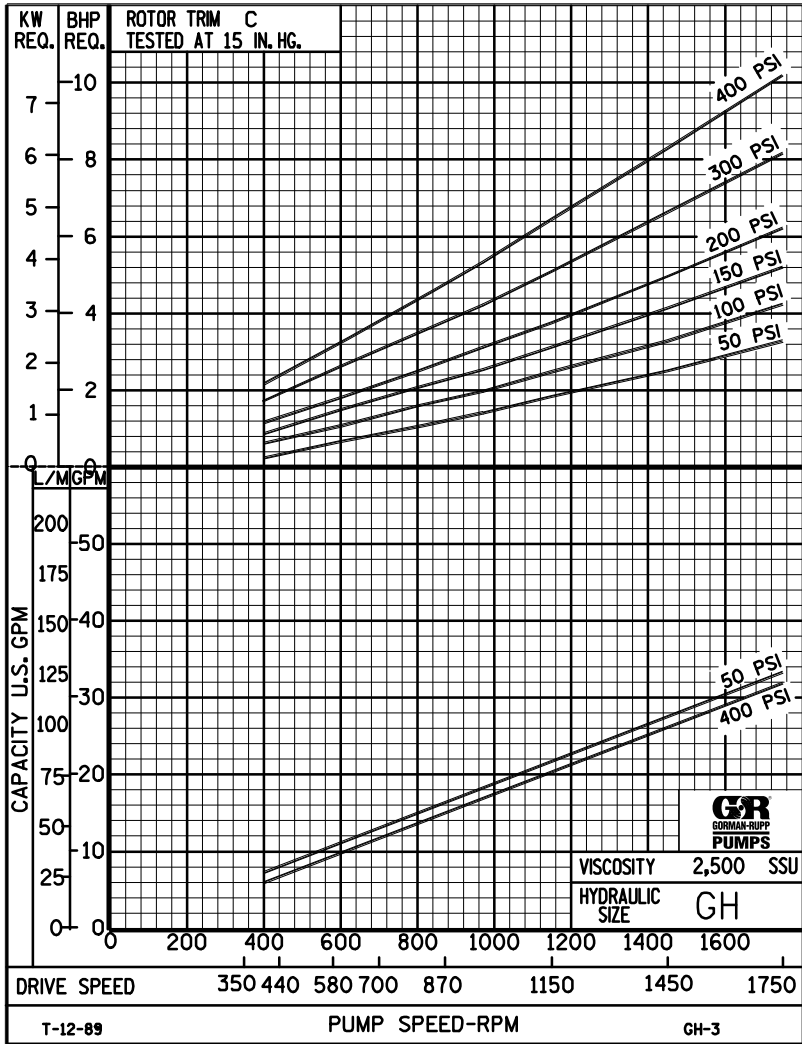


PERFORMANCE CURVES

SPEED VS. CAPACITY/HORSEPOWER

GH

Hydraulic Size



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PUMP HYDRAULIC SIZE CHART

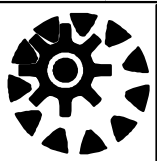
SEC. 500

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**31 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										
					PIPE DIAMETER					CRACKING PRESS. (PSI)					DIFFERENTIAL PRESSURE (PSI)										
CAP. GPM	SPEED RPM				¾"	1"	1¼"	1½"	2"	LOW PRES R/V					MEDIUM DUTY AND HEAVY DUTY				HEAVY DUTY ONLY						
										50	75	100	150	200	25	50	75	100	150	200	300	400			
31	1750	STD	28	4.2	.01	.01	.01	.01	.01	68	97	126			30	29	28	28							
			32		.61	.19	.05	.03	.01							.95	1.4	2.0	2.5						
			38	4.2	.78	.25	.07	.03	.01	68	97	126	176			31	30	29	29	28					
			50		.93	.30	.08	.04	.01							1.2	1.8	2.5	2.7	3.9					
			70	4.2	1.02	.35	.09	.05	.02	70	99	128	176	230		32	31	31	30	29	29				
			100		1.22	.39	.11	.05	.02							1.4	2.0	2.6	3.0	4.2	5.0				
			150	4.2	1.35	.44	.12	.06	.02	72	101	130	176	232		32	32	32	31	31	30	29	28		
			200		1.58	.52	.13	.07	.03							1.6	2.3	2.8	3.3	4.4	5.2	7.3	9.3		
			300	4.2	1.80	.61	.16	.08	.03	72	101	130	177	234		33	32	32	32	31	31	30	30		
			500		1.98	.75	.25	.14	.05							1.9	2.8	3.1	3.7	4.8	5.6	7.5	9.6		
		750	4.2	2.97	1.13	.38	.21	.08	74	102	132	177	235		33	33	33	33	32	32	31	30			
		1,000		3.96	1.51	.51	.27	.10							2.0	3.0	3.5	3.8	5.0	5.8	7.7	9.8			
		2,000	5.5	7.91	3.01	1.00	.54	.20	76	103	133	178	238		33	33	33	33	33	32	32	31			
		3,500		13.9	5.27	1.76	.95	.35							2.2	3.3	4.0	4.5	5.5	6.5	8.4	11			
		5,000	6.3	20.0	7.53	2.52	1.36	.50	80	105	137	180	240		33	33	33	33	33	32	32	31			
		7,500		29.7	11.3	3.77	2.04	.75							2.9	4.4	5.0	5.4	6.4	7.3	9.2	11.0			
		10,000	7.1	39.6	15.1	5.03	2.71	1.00	84	109	140	182	242		33	33	33	33	33	32	32	32			
		15,000		59.3	22.6	7.54	4.07	1.50							3.7	5.5	6.0	6.6	7.6	8.5	10	12			
		20,000	7.8	79.1	30.1	10.1	5.43	2.00	88	113	144	184	244		33	33	33	33	33	32	32	32			
		25,000		98.9	37.6	12.6	6.78	2.50							4.7	6.8	7.4	7.9	8.9	9.9	12	14			
50,000																									
75,000																									
100,000																									
150,000																									
200,000																									
250,000																									

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



GH

PUMP HYDRAULIC SIZE CHART

SEC. 500

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**10 GPM
580 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					MEDIUM DUTY AND HEAVY DUTY				HEAVY DUTY ONLY											
							50	75	100	150	200	25	50	75	100	150	200	300	400								
10	580	STD	28	1.2	.01	.01	.01	.01	.01	56	81	106			9	8.5	8	7.5									
			32		.08	.03	.01	.01	.01							.25	.41	.59	.73								
			38	1.2	.11	.04	.01	.01	.01	56	81	106	157			9.5	9	8.5	8	7.5							
			50		.13	.04	.01	.01	.01							.29	.45	.63	.80	1.1							
			70	1.2	.14	.05	.02	.01	.01	56	81	107	158	209			10	9.5	9.5	9	8.5	8.5					
			100		.14	.05	.02	.01	.01							.40	.54	.69	.84	1.1	1.4						
			150	1.2	.17	.07	.03	.02	.01	57	82	108	158	211			10	10	10	9.5	9.5	9	9	9	8		
			200		.30	.12	.04	.02	.01							.45	.58	.73	.88	1.2	1.4	2.0	2.6				
			300	1.2	.39	.15	.05	.02	.01	57	82	109	159	212			11	10	10	10	10	9.5	9.5	9			
			500		.64	.24	.08	.05	.02							.49	.62	.77	.92	1.2	1.5	2.1	2.7				
		750	1.2	.96	.36	.12	.07	.03	57	82	111	161	214			11	11	10	10	10	10	10	10	9.5			
		1,000		1.28	.49	.16	.09	.03							.54	.66	.82	.97	1.3	1.6	2.2	2.8					
				"C"	2,000	1.7	2.55	.97	.33	.18	.07	58	85	112	162	214	11	11	11	10	10	10	10	10			
					3,500		4.46	1.70	.57	.31	.12							.64	.76	.91	1.1	1.4	1.7	2.3	2.9		
					5,000	2.1	6.38	2.43	.81	.44	.16	60	85	112	162	214	11	11	11	11	10	10	10	10	10		
					7,500		9.57	3.64	1.22	.66	.24							.82	.97	1.1	1.3	1.6	1.9	2.4	3.0		
					10,000	2.5	12.8	4.86	1.62	.88	.32	63	88	114	166	216	11	11	11	11	10	10	10	10	10		
					15,000		19.2	7.29	2.43	1.31	.49							1.1	1.3	1.4	1.6	1.9	2.2	2.8	3.4		
				"D"	20,000	2.9	25.5	9.71	3.24	1.75	.65	66	91	116	168	218	11	11	11	11	10	10	10	10	10		
					25,000		31.9	12.2	4.05	2.19	.81							1.4	1.5	1.7	1.9	2.2	2.5	3.2	3.9		
		50,000	4.8		63.8	24.3	8.11	4.38	1.61	69	94	122	172	224	11	11	11	11	10	10	10	10	10				
		75,000			95.7	36.4	12.2	6.56	2.42							2.0	2.2	2.4	2.5	2.9	3.2	3.9	4.6				
		100,000	7.1		128	48.6	16.2	8.75	3.22	73	98	126	176	230	11	11	11	11	10	10	10	10	10				
		150,000			191	72.9	24.3	13.1	4.83							2.5	2.8	3.0	3.2	3.5	3.9	4.5	5.2				
		200,000																									
		250,000																									

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



GH

SEC. 500

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4 GPM
200 RPM

NOMINAL		VISCOSITY		N.I.P.R.	FRICTION PIPE LOSS (PSI/FT) <small>(Schedule 40 Steel Pipe)</small>					CAPACITY (GPM)				H.P. REQUIRED							
GPM	RPM	ROTOR TRIM	(SSU)	(PSIa)	PIPE DIAMETER					MEDIUM-DUTY & HEAVY-DUTY				HEAVY-DUTY ONLY							
					1½"	2"	2½"	3"	4"	DIFFERENTIAL PRESSURE (PSI)				150	200	300	400				
						25	50	75	100	150	200	300	400								
4	200	STD																			
				"D"																	
					200,000	2.4	7	2.6	1.3	0.5	0.2	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.7	3.7	
					399,999		14	5.2	2.5	1.1	0.4	1.1	1.2	1.4	1.5	1.7	1.8	2.0	2.1		
					400,000	2.7						3.8	3.8	3.8	3.8	3.8	3.8	3.7	3.7		
					599,999		21	7.7	3.8	1.6	0.5	1.3	1.4	1.5	1.7	1.9	2.0	2.1	2.2		
					600,000	3.3						3.8	3.8	3.8	3.8	3.8	3.8	3.7	3.7		
					799,999		NR	10.3	5.1	2.1	0.7	1.4	1.5	1.6	1.8	2.0	2.1	2.2	2.3		
					800,000	3.6						3.8	3.8	3.8	3.8	3.8	3.8	3.7	3.7		
		1M	NR	12.9	6.3		2.7	0.9	1.6	1.9	1.9	1.9	2.1	2.2	2.3	2.4					

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