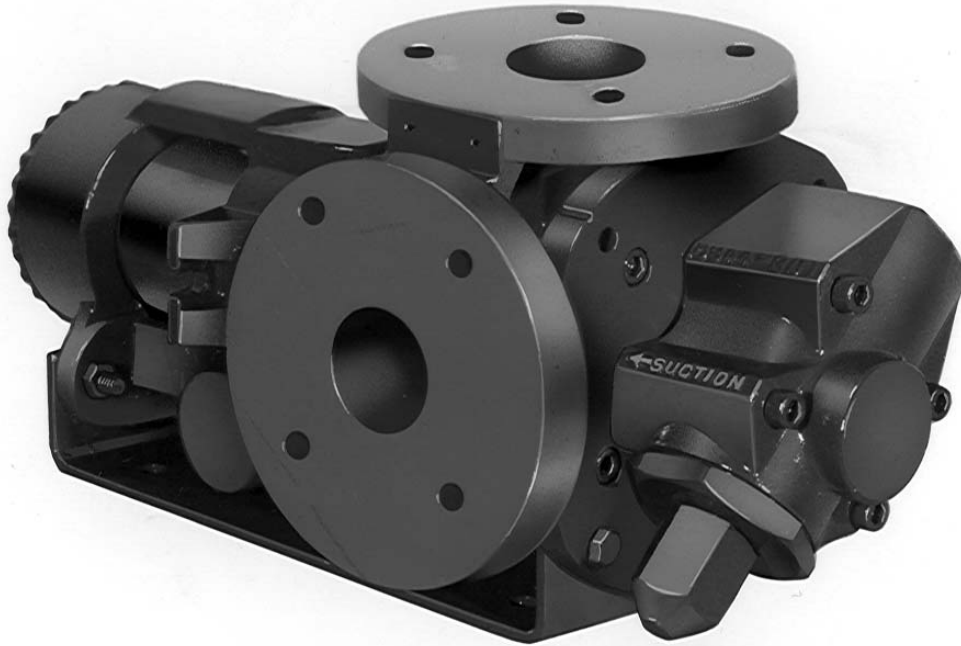


# GHS SERIES Flexible Seal HEAVY DUTY STANDARD STEEL ROTARY GEAR PUMP

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 GHS steel series is designed for applications in the operating ranges noted below. These units are available with head and backhead 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.

### FEATURES

*400 PSI CAPABILITY*  
*BALL BEARING THRUST CONTROL*  
*ROTOR END CLEARANCE EXTERNALLY ADJUSTABLE*  
*HIGH STRENGTH, COMPUTER PROFILED GEARING FOR QUIET OPERATION*  
*MULTIPLE PORT POSITIONS*  
*FLEXIBLE SEAL DESIGN ALLOWS FOR A VARIETY OF INDUSTRIAL STANDARD SEALS OR PACKING*  
*INTERNAL SEAL VENT*

### OPERATING RANGE

CAPACITY (GPM) : (3 TO 295)  
 [LPM] : [11 TO 1116]  
 PRESSURE (PSI) : [0 TO 300]  
 [BAR] : [0 TO 21]  
 VISCOSITY (SSU) : (28 TO 2,000,000)  
 [cSt] : [1 TO 440,000]  
 TEMPERATURE (F) : (-20° TO 675°)  
 [C] : [-29° TO 358°]

### 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 ●	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]						350 [177]	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]						GHS ●	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]	2.9
GHC 3 JG32-B ● †	GHS 3 JG32-B ● † GHS 3 JG38-B ■ †	40 [126]	1150 [960]	30 [95]	870 [725]				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]	5.3

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]	960 [960]	60 [189]	580 [480]			300 [21]		200	5.3
										[90,7]	
	GHS 3 NK32-B ● † GHS 3 NK38-B ■ †	132 [500]	960 [960]	80 [252]	580 [480]			300 [21]		200	5.3
										[90,7]	
	GHS 2 NM32-B ● † GHS 2 NM38-B ■ †	165 [624]	720 [600]	99 [312]	480 [400]	100 [7]	150 [10]	300 [21]		200	5.3
										[90,7]	
	GHS 3 NP32-B ① ● † GHS 3 NP38-B ① ■ †	172 [542]	720 [600]	115 [362]	480 [400]	100 [7]	150 [10]	300 [21]	GHS ● 400 [204]	200	5.3
										[90,7]	
	GHS 2-1/2 RM32-B ● † GHS 2-1/2 RM38-B ■ †	215 [678]	720 [600]	143 [451]	480 [400]	100 [7]	150 [10]	300 [21]	500 [260]	302	10.7
										[136,9]	
	GHS 3 RM32-B ● † GHS 3 RM38-B ■ †	255 [804]	720 [600]	170 [536]	480 [400]	100 [7]	150 [10]	300 [21]	500 [260]	302	10.7
										[136,9]	
	GHS 4 RM32-B ● † GHS 4 RM38-B ■ †	295 [930]	720 [600]	196 [618]	480 [400]	100 [7]	150 [10]	300 [21]	500 [260]	302	10.7
										[136,9]	
	GHS 2-1/2 RP32-B ● † GHS 2-1/2 RP38-B ■ †	255 [804]	720 [600]	170 [536]	480 [400]	100 [7]	150 [10]	300 [21]	500 [260]	302	10.7
										[136,9]	
	GHS 3 RP32-B ● † GHS 3 RP38-B ■ †	295 [930]	720 [600]	196 [618]	480 [400]	100 [7]	150 [10]	300 [21]	500 [260]	302	10.7
										[136,9]	
	GHS 4 RP32-B ● † GHS 4 RP38-B ■ †	295 [930]	720 [600]	196 [618]	480 [400]	100 [7]	150 [10]	300 [21]	500 [260]	302	10.7
										[136,9]	
	GHS 3 RR32-B ● † GHS 3 RR38-B ■ †	295 [930]	720 [600]	196 [618]	480 [400]	100 [7]	150 [10]	300 [21]	500 [260]	302	10.7
										[136,9]	
	GHS 4 RR32-B ● † GHS 4 RR38-B ■ †	295 [930]	720 [600]	196 [618]	480 [400]	100 [7]	150 [10]	300 [21]	500 [260]	302	10.7
										[136,9]	
	GHS 3 RS32-B ① ● † GHS 3 RS38-B ① ■ †	295 [930]	720 [600]	196 [618]	480 [400]	100 [7]	150 [10]	300 [21]	500 [260]	302	10.7
										[136,9]	
	GHS 4 RS32-B ① ● † GHS 4 RS38-B ① ■ †	295 [930]	720 [600]	196 [618]	480 [400]	100 [7]	150 [10]	300 [21]	500 [260]	302	10.7
										[136,9]	

STANDARD MODELS CONTINUED

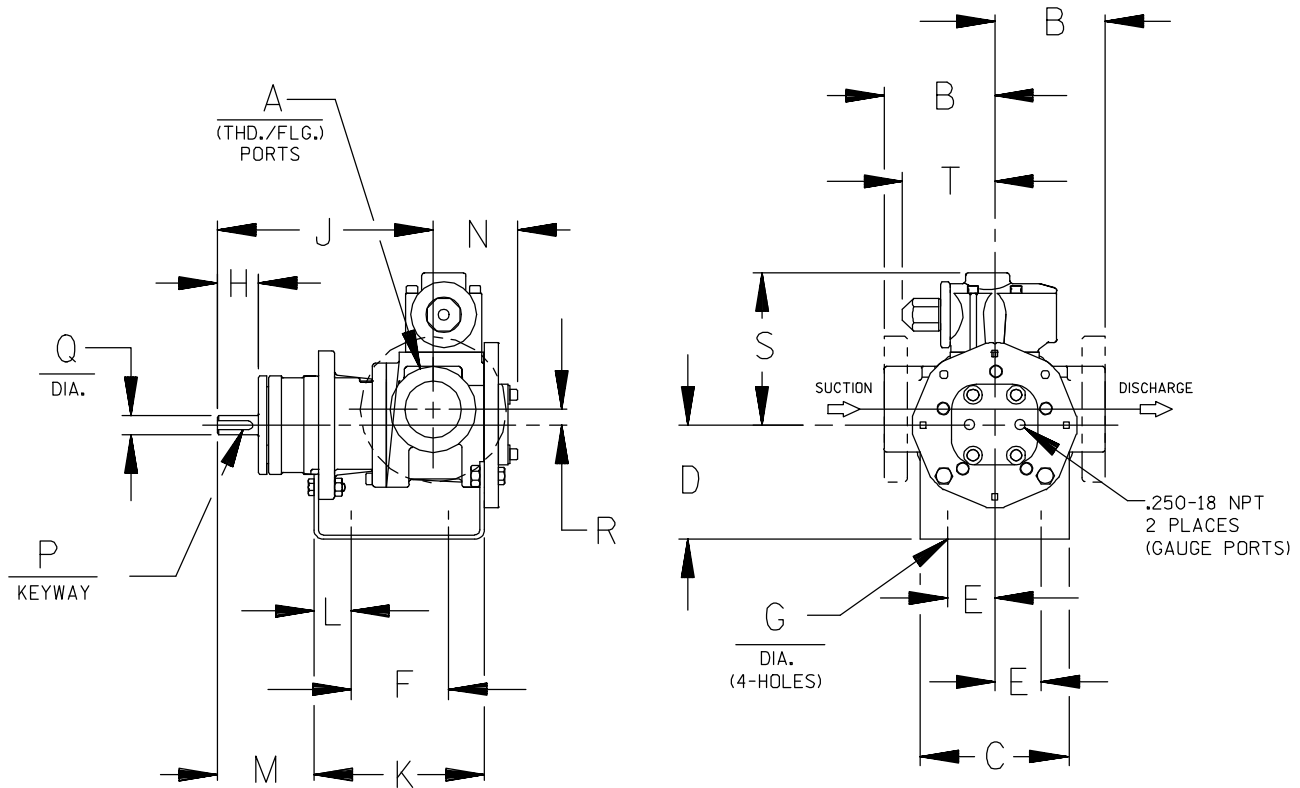
- MECHANICAL SEAL
- LIPSEAL/PACKING
- † PORTS ARE COMPATIBLE WITH 150# ANSI FLANGES. ALL OTHER PORTS ARE TAPPED NPT FOR ANSI PIPE. OPTIONAL [DIN] FLANGES OR TAPPED [BSP] PORTS AVAILABLE FOR EXPORT MARKET.

① PUMP LIMITED TO 200 PSI MAXIMUM PRESSURE.

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<b>APPLICATION RECOMMENDATIONS:</b>		
<b>APPLICATION</b>	<b>OPTIONS REQUIRED (Select One From Each Row)</b>	<b>OPERATING LIMITATIONS</b>
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

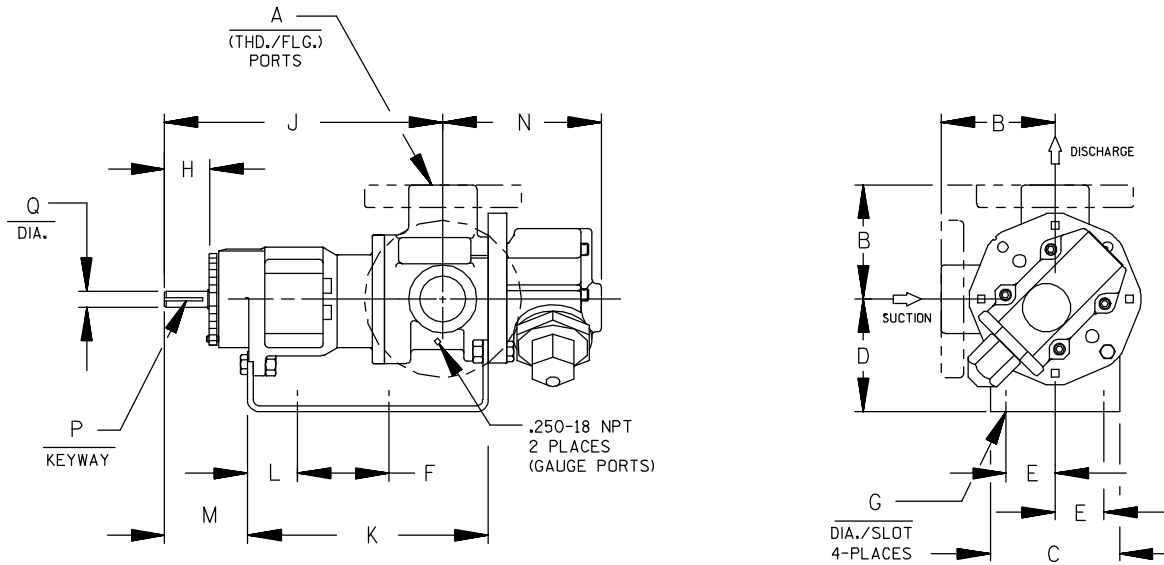
NOTE: PROPER PUMP APPLICATION REQUIRES CONSIDERATION OF ADDITIONAL FACTORS. PLEASE REVIEW APPLICATION GUIDE IN SECTION 500 OR CONSULT THE FACTORY.



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] 6.25 [159] 7.00 [178] 8.00 [203]	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"													.38 [10] x 1.88 [48]	1.44 [37]
	3"	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]		
	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**

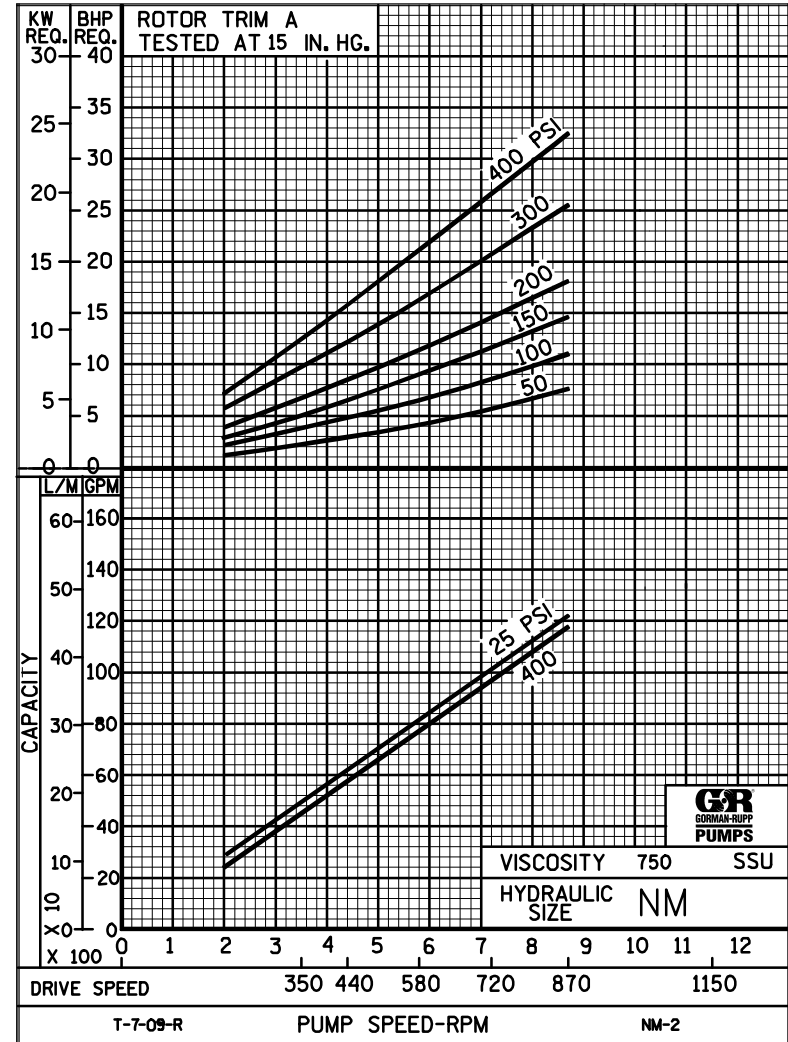
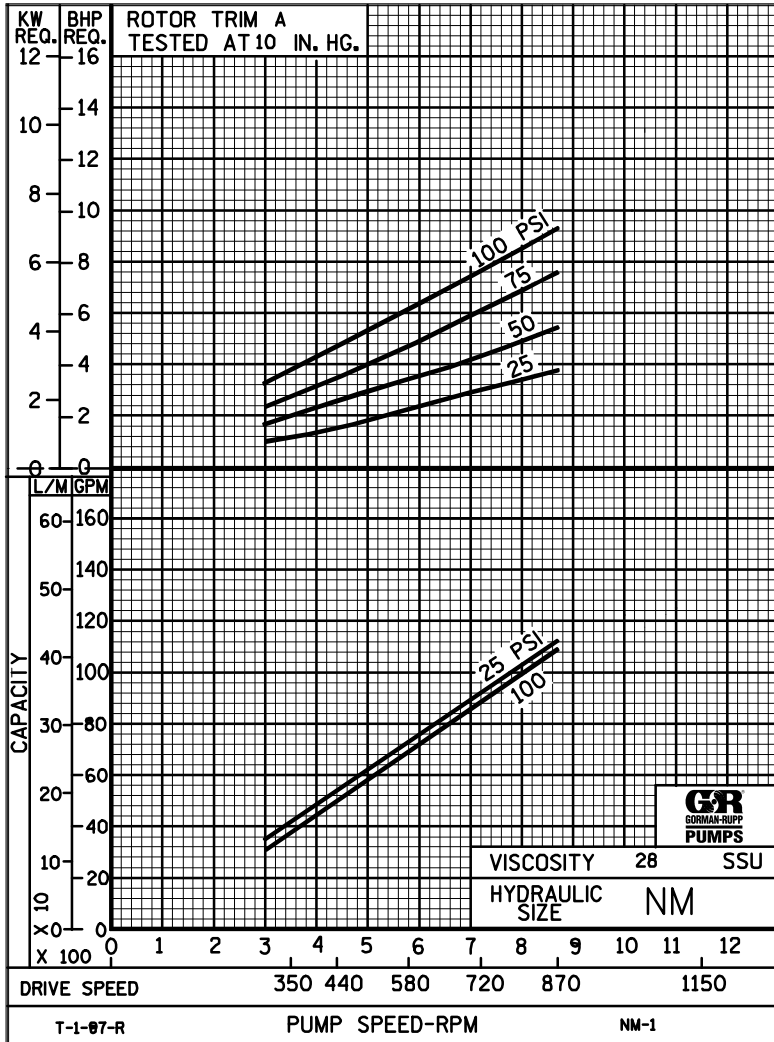


# PERFORMANCE CURVES

## SPEED VS. CAPACITY/HORSEPOWER

# NM

Hydraulic Size



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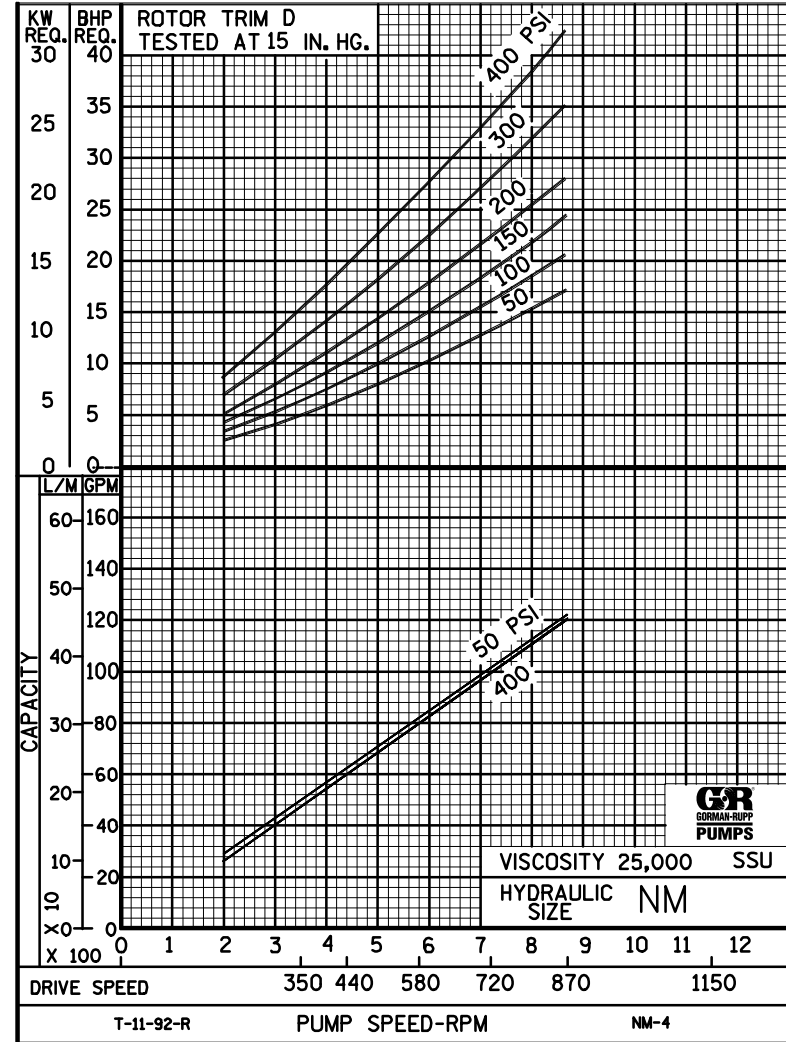
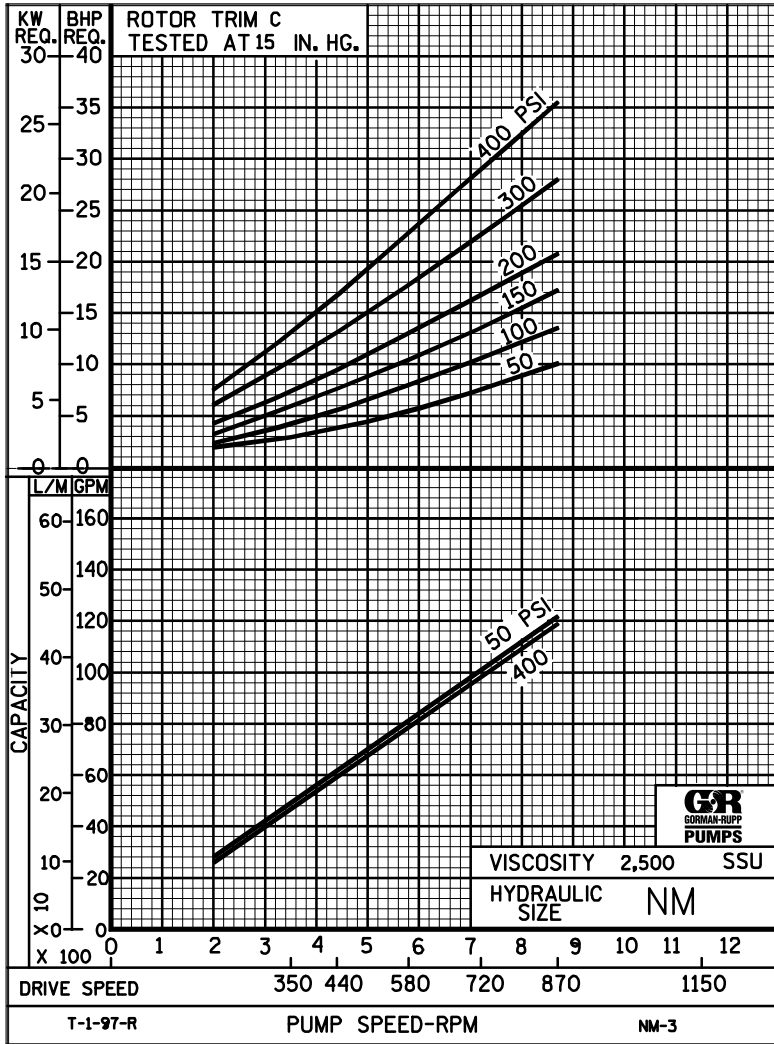


# PERFORMANCE CURVES

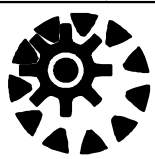
## SPEED VS. CAPACITY/HORSEPOWER

# NM

Hydraulic Size



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# NM

## PUMP HYDRAULIC SIZE CHART

SEC. 500

Page 94

January 2010

120 GPM  
870 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"	5"	LOW PRES R/V			HI PRES R/V		MEDIUM DUTY AND HEAVY DUTY				HEAVY DUTY ONLY									
120	870	STD	28	3.8	.01	.01	.01	.01	.01	64	92	118				113	111	110	109									
			32		.09	.04	.02	.01	.01							3.9	5.5	7.8	9.5									
			38	3.8	.11	.05	.02	.01	.01	64	92	118	166				116	115	114	113	110							
			50		.13	.06	.02	.01	.01								4.0	5.6	7.9	9.6	13							
			70	3.8	.15	.07	.02	.01	.01	66	94	122	168	220			119	118	117	116	113	112						
			100		.17	.07	.03	.01	.01								4.3	6.0	8.0	9.6	13	17						
			150	3.8	.19	.08	.03	.01	.01	66	94	124	171	222			120	120	119	118	116	116	115	109				
			200		.20	.09	.03	.01	.01								4.8	6.3	8.1	9.8	13	17	24	31				
			300	3.8	.23	.10	.03	.01	.01	68	96	127	173	224			121	121	120	120	118	117	117	112				
			500		.24	.10	.04	.02	.01								5.6	7.1	8.9	10	14	18	25	32				
		750	3.8	.29	.14	.06	.02	.01	70	98	130	175	226			122	122	121	121	119	119	118	115					
		1,000		.39	.19	.08	.03	.01								6.7	8.0	9.8	11	15	19	26	33					
		2,000	4.9	.78	.38	.16	.06	.02	78	106	136	182	232			122	122	122	121	121	121	119	118					
		3,500		1.36	.67	.28	.10	.04								9.1	10	12	14	18	21	28	36					
		5,000	5.6	1.93	.95	.40	.14	.06	82	108	138	185	235			122	122	122	121	121	121	119	118					
		7,500		2.90	1.43	.60	.20	.08								11	12	14	16	20	24	30	38					
		10,000	6.3	3.87	1.90	.80	.27	.11	84	110	140	188	239			122	121	121	121	121	121	120	119					
		15,000		5.80	2.85	1.20	.41	.17								13	15	17	19	22	26	33	40					
		20,000	6.9	7.73	3.80	1.60	.54	.22	84	112	142	192	242			122	121	121	121	121	121	121	120					
		25,000		9.66	4.75	1.99	.67	.27								15	17	19	21	25	28	35	42					
50,000																												
75,000																												
100,000																												
150,000																												
200,000																												
250,000																												

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



# NM

## PUMP HYDRAULIC SIZE CHART

SEC. 500

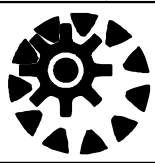
Page 95

January 2010

**80 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)													
					2"	2 1/2"	3"	4"	5"	LOW PRES R/V		HI PRES R/V			MEDIUM DUTY AND HEAVY DUTY				HEAVY DUTY ONLY									
80	580	STD	28	2.1	.01	.01	.01	.01	.01	58	84	114				73	72	71	70									
			32		.04	.02	.01	.01	.01							2.6	3.7	4.6	6.2									
			38	2.1	.05	.02	.01	.01	.01	58	84	114	160				76	75	74	73	71							
			50		.06	.03	.01	.01	.01								2.6	3.8	4.6	6.3	8.7							
			70	2.1	.07	.03	.01	.01	.01	60	86	116	160	206			78	78	77	76	74	73						
			100		.08	.04	.02	.01	.01								2.7	3.8	4.8	6.4	8.8	11						
			150	2.1	.10	.04	.02	.01	.01	60	88	116	164	210			80	79	79	78	76	76	73	72				
			200		.10	.05	.02	.01	.01								2.8	3.9	4.9	6.4	8.9	11	16	21				
			300	2.1	.10	.05	.02	.01	.01	62	90	118	164	214			81	80	80	79	78	78	75	75				
			500		.13	.07	.03	.01	.01								3.1	4.1	5.2	6.5	9.0	12	16	21				
			750	2.1	.20	.10	.04	.02	.01	64	92	118	168	218			81	81	81	81	79	79	77	77				
			1,000		.26	.13	.06	.02	.01								3.6	4.6	5.7	6.9	9.4	12	17	22				
		2,000	2.8	.52	.26	.11	.04	.02	70	98	124	176	226			81	81	81	81	80	80	78	78					
		3,500		.90	.45	.19	.07	.03								5.0	6.0	7.0	8.3	11	13	18	23					
		5,000	3.3	1.29	.64	.27	.09	.04	72	100	126	180	230			81	81	81	81	80	80	79	79					
		7,500		1.93	.95	.40	.14	.06								6.0	7.0	8.1	9.3	12	14	19	24					
		10,000	3.9	2.58	1.27	.53	.18	.07	74	102	128	184	232			81	81	81	81	81	80	79	79					
		15,000		3.87	1.90	.80	.27	.11								7.1	8.4	9.5	11	13	16	21	25					
		20,000	4.4	5.16	2.53	1.06	.36	.15	76	104	130	188	236			81	81	81	81	80	80	80	79					
		25,000		6.44	3.17	1.33	.45	.18								8.3	9.7	11	12	15	17	22	27					
		50,000	6.9	12.9	6.33	2.66	.90	.36	84	116	142	204	246			81	81	81	81	80	80	80	79					
		75,000		19.4	9.49	3.98	1.35	.55								12	14	16	17	20	23	26	31					
		100,000																										
		150,000																										
200,000																												
250,000																												

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



# NM

## PUMP HYDRAULIC SIZE CHART

SEC. 500

Page 96

January 2010

**48 GPM  
350 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"	5"	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									
48	350	STD	28	1.3	.01	.01	.01	.01	.01	56	82	108			43	42	40	40										
			32		.02	.01	.01	.01	.01						1.2	2.0	3.0	3.8										
			38	1.3	.02	.01	.01	.01	.01	56	82	108	158			46	45	44	43	42								
			50		.03	.01	.01	.01	.01							1.2	2.0	3.0	3.8	5.2								
			70	1.3	.03	.02	.01	.01	.01	57	83	110	159	210			47	47	46	45	44	42						
			100		.04	.02	.01	.01	.01								1.3	2.1	3.1	3.8	5.2	6.5						
			150	1.3	.04	.02	.01	.01	.01	57	83	110	159	210			48	48	47	46	45	44	43	42				
			200		.04	.02	.01	.01	.01								1.4	2.2	3.1	3.8	5.2	6.5	9.3	12				
			300	1.3	.05	.03	.01	.01	.01	58	84	112	161	212			49	49	48	47	46	45	45	44				
			500		.08	.04	.02	.01	.01								1.6	2.2	3.1	3.9	5.3	6.7	9.6	13				
			750	1.3	.12	.06	.03	.01	.01	58	84	112	161	212			49	49	49	48	47	47	46	46				
			1,000		.16	.08	.04	.01	.01								1.8	2.3	3.1	3.9	5.3	6.8	9.8	13				
		2,000	1.7	.31	.15	.07	.02	.01	60	86	114	164	214			49	49	49	48	48	48	47	47					
		3,500		.54	.27	.11	.04	.02								2.6	3.2	4.0	4.7	6.3	7.6	11	13					
		5,000	2.1	.78	.38	.16	.06	.03	60	86	114	168	216			49	49	49	49	48	48	48	47					
		7,500		1.16	.57	.24	.08	.04								3.1	3.7	4.5	5.2	6.8	8.1	11	14					
		10,000	2.5	1.55	.76	.32	.11	.05	62	88	116	168	218			49	49	49	49	48	48	48	47					
		15,000		2.32	1.14	.48	.16	.07								3.6	4.3	5.0	5.8	7.3	8.7	12	15					
		20,000	3.0	3.09	1.52	.64	.22	.09	62	88	116	170	218			49	49	49	49	48	48	48	47					
		25,000		3.87	1.90	.80	.27	.11								4.2	4.7	5.5	6.3	7.7	9.3	12	15					
		50,000	4.4	7.73	3.80	1.60	.54	.22	64	90	118	172	220			49	49	49	49	48	48	48	47					
		75,000		11.6	5.70	2.39	.81	.33								5.5	6.3	7.0	8.1	9.6	11	14	17					
		100,000	7.8	15.5	7.60	3.19	1.08	.44	68	94	122	176	224			49	49	49	49	48	48	48	47					
		150,000		23.2	11.4	4.78	1.61	.65								7.0	7.8	8.6	10	12	13	16	19					
200,000	12.3	30.9	15.2	6.37	2.15	.87	72	98	127	181	230			49	49	49	49	48	48	48	47							
250,000		38.7	19.0	7.97	2.69	1.09								8.9	9.3	10	12	14	16	18	22							

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