

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]							
GHA 1-1/2 GH 3-B ● GHA 1-1/2 GH 4-B ■	15 [49]							
GHA 1-1/2 GJ 3-B ● GHA 1-1/2 GJ 4-B ■	19 [60]							
GHA 2 JJ 3-B ● GHA 2 JJ 4-B ■	28 [88]	580 [480]	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]							
GHA 2 JP 3-B ● GHA 2 JP 4-B ■	54 [169]							
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 ■	80 [251]							
GHA 2 NM 3-B ● GHA 2 NM 4-B ■	80 [251]							
GHA 3 NM 3-B ● GHA 3 NM 4-B ■	80 [251]							
GHA 2 NP 3-B ● GHA 2 NP 4-B ■	99 [313]	580 [480]				● 250 [119]	180 [81,6]	10.7
GHA 3 NP 3-B ● GHA 3 NP 4-B ■	99 [313]							

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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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.

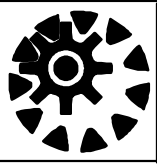
NOTE: PROPER PUMP APPLICATION REQUIRES CONSIDERATION OF ADDITIONAL FACTORS. PLEASE REVIEW APPLICATION GUIDE IN SECTION 500 OR CONSULT THE FACTORY.

GHA

**FOR GHA DRIVE OPTIONS
AND DIMENSIONS**

SEE

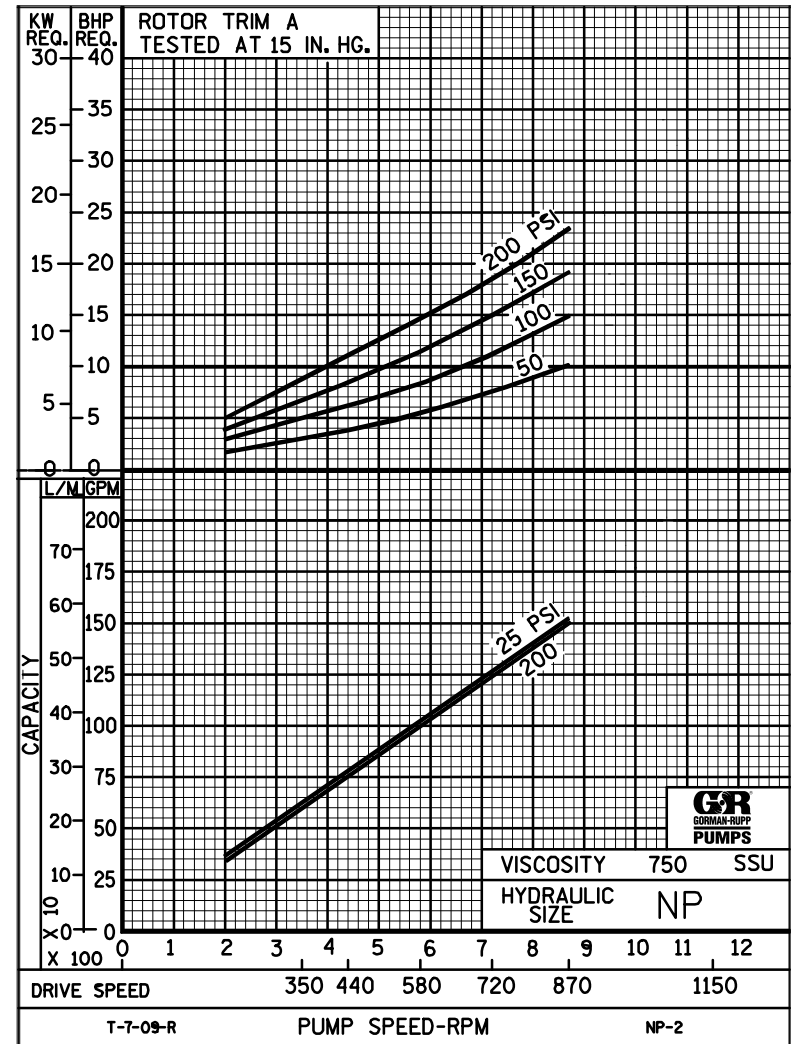
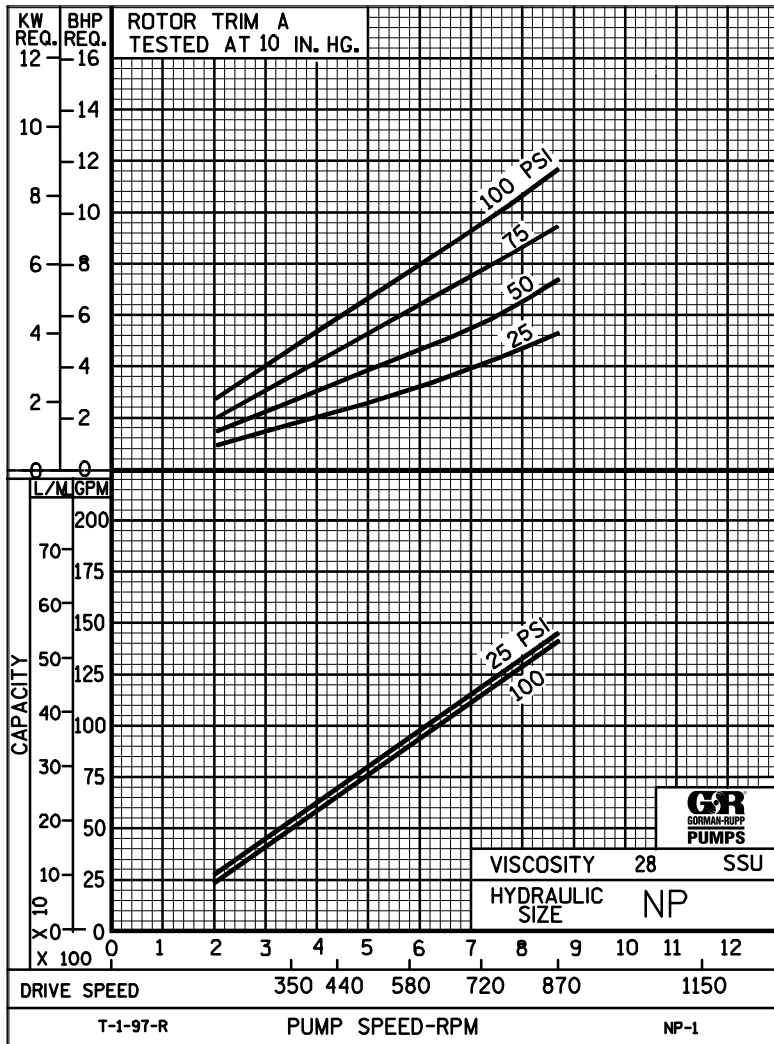
SECTION 545



PERFORMANCE CURVES

SPEED VS. CAPACITY/HORSEPOWER

NP Hydraulic Size



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PERFORMANCE CURVES

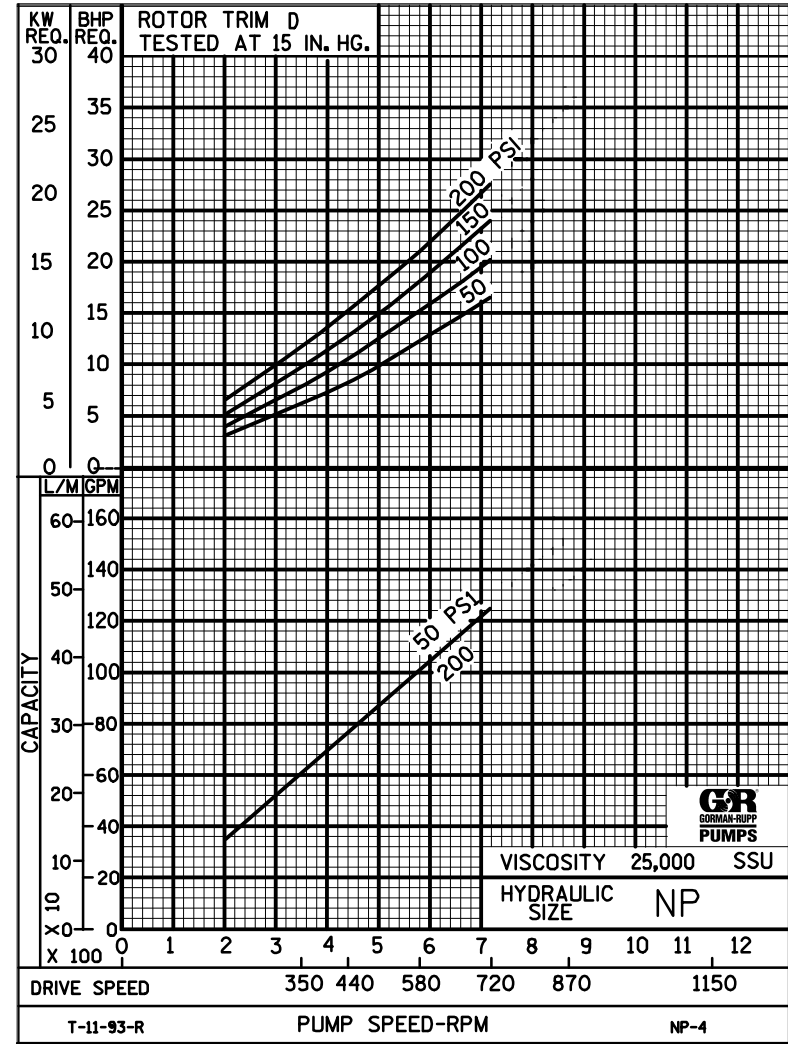
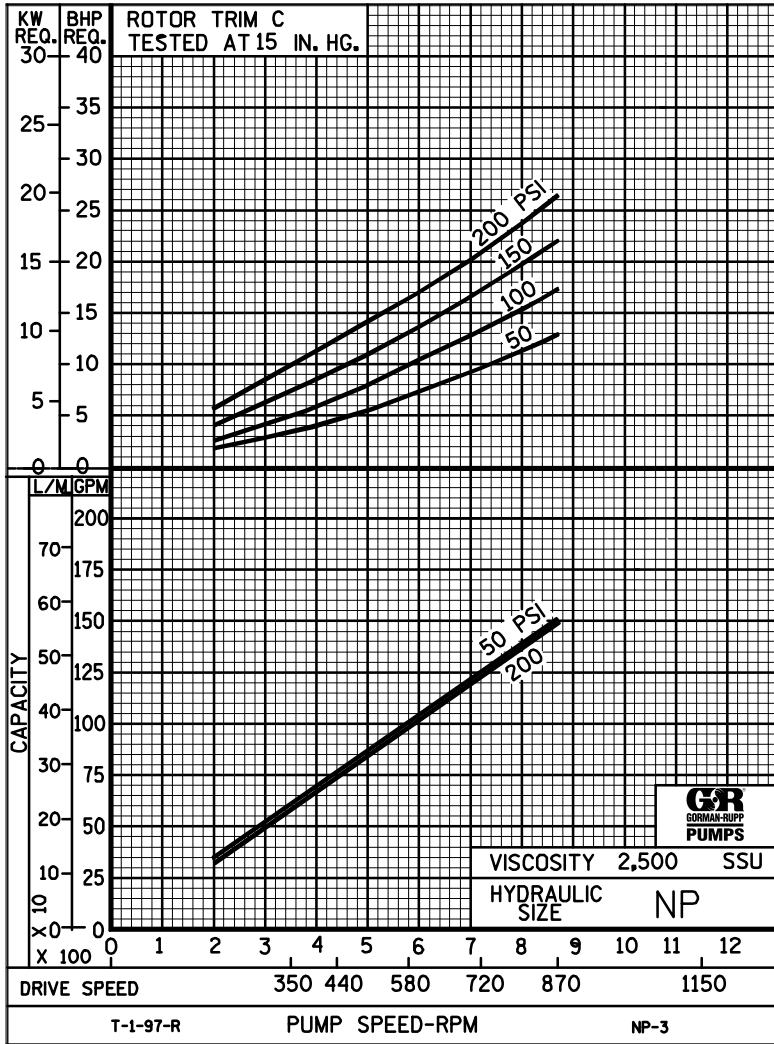
SPEED VS. CAPACITY/HORSEPOWER

NP Hydraulic Size

SEC. 500

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NP

PUMP HYDRAULIC SIZE CHART

SEC. 500

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**99 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							
						50	75	100	150	200	25	50	75	100	150	200	300	400					
99	580	STD	28	2.5	.01	.01	.01	.01	.01	62	88	118			95	92	91	90					
			32		.06	.03	.01	.01	.01							3.2	4.6	6.2	7.8				
			38	2.5	.08	.03	.01	.01	.01	62	88	118	164			96	94	94	93	92			
			50		.09	.04	.02	.01	.01							3.2	4.7	6.3	7.9	11			
			70	2.5	.11	.05	.02	.01	.01	64	90	120	164	210		98	97	96	96	95	94		
			100		.12	.05	.02	.01	.01							3.3	4.7	6.4	8.0	11	14		
			150	2.5	.14	.06	.02	.01	.01	64	92	120	168	214		99	99	98	98	97	96		
			200		.15	.06	.03	.01	.01							3.5	4.9	6.5	8.1	11	14		
			300	2.5	.17	.06	.03	.01	.01	66	94	122	168	218		100	99	99	99	98	98		
			500		.17	.08	.04	.01	.01							4.0	5.1	6.8	8.2	11	15		
		750	2.5	.24	.12	.05	.02	.01	68	96	122	172	222		101	101	101	100	99	99			
		1,000		.32	.16	.07	.02	.01							4.5	5.9	7.1	8.9	12	15			
		2,000	3.2	.64	.32	.13	.05	.02	74	102	128	180	230		101	101	101	100	100	99			
		3,500		1.12	.55	.23	.08	.03							5.9	7.3	8.9	10	14	17			
		5,000	3.8	1.60	.79	.33	.11	.05	76	104	130	184	234		101	101	101	100	100	100			
		7,500		2.39	1.18	.50	.17	.07							7.1	9.0	10	12	15	18			
		10,000	4.5	3.19	1.57	.66	.22	.09	78	106	132	188	236		101	101	101	100	100	100			
		15,000		4.79	2.35	.99	.33	.14							8.9	11	13	14	17	20			
		20,000	5.2	6.38	3.14	1.32	.45	.18	80	108	134	192	240		101	101	101	100	100	100			
		25,000		7.97	3.92	1.64	.56	.23							11	12	14	15	18	21			
50,000	9.0	16.0	7.83	3.29	1.11	.45	88	120	146	208	250		101	101	101	100	100	100					
75,000		23.9	11.8	4.93	1.66	.68							17	23	25	27	30	33					
100,000																							
150,000																							
200,000																							
250,000																							

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

