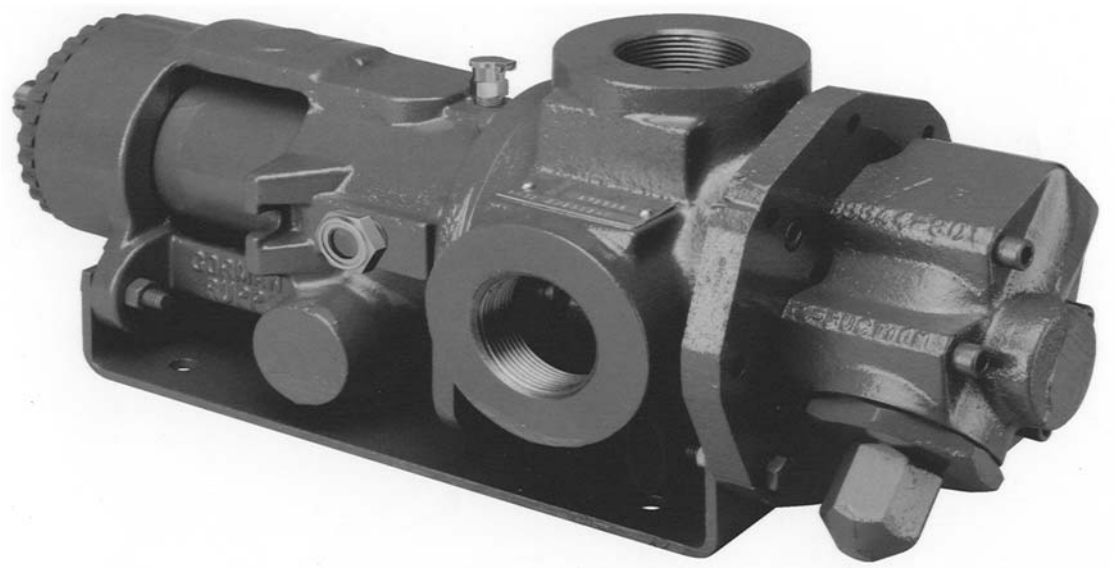
GORMAN-RUPP
ROTARY GEAR PUMPS

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

Standard Construction

EXTERIOR	ROTOR & IDLER	HSG PORTS	IDLER BUSHING	BACKHD BEARING	IDLER PIN	SHAFT	SHAFT SEALING		ROTATION	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 SIZE | SEAL | STYLE

MODEL NUMBER	NOM. CAPACITY-SPEED MAXIMUM GPM [LPM]	NOM. CAPACITY-SPEED MAXIMUM RPM 60 Hz [50 HZ]	MAXIMUM DIFFERENTIAL PRESSURE - PSI [BAR] BELOW 38 SSU [4 cSt]	38 TO 100 SSU [21 cSt]	100 TO 250,000 SSU [55,000 cSt]	MAXIMUM TEMP. °F [°C]	SHIPPING DATA ② Weight LBS [KG]	SHIPPING DATA Volume CU. FT.
GHA 1-1/2 GC 3-B ● GHA 1-1/2 GC 4-B ■	8 [25]	870 [720]	100 [7]	150 [10]	200 [14]	● 250 [119] ■ 500 [260]	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]	580 [480]					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]						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

Standard Models Cont'd

MODEL NUMBER	NOM. CAPACITY-SPEED MAXIMUM GPM [LPM]	NOM. CAPACITY-SPEED MAXIMUM RPM 60 Hz [50 HZ]	MAXIMUM DIFFERENTIAL PRESSURE - PSI [BAR] BELOW 38 SSU [4 cSt]	MAXIMUM DIFFERENTIAL PRESSURE - PSI [BAR] 38 TO 100 SSU [21 cSt]	MAXIMUM DIFFERENTIAL PRESSURE - PSI [BAR] 100 TO 250,000 SSU [55,000 cSt]	MAXIMUM TEMP. °F [°C]	SHIPPING DATA Weight LBS [KG]	SHIPPING DATA Volume 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]	350 [290]					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

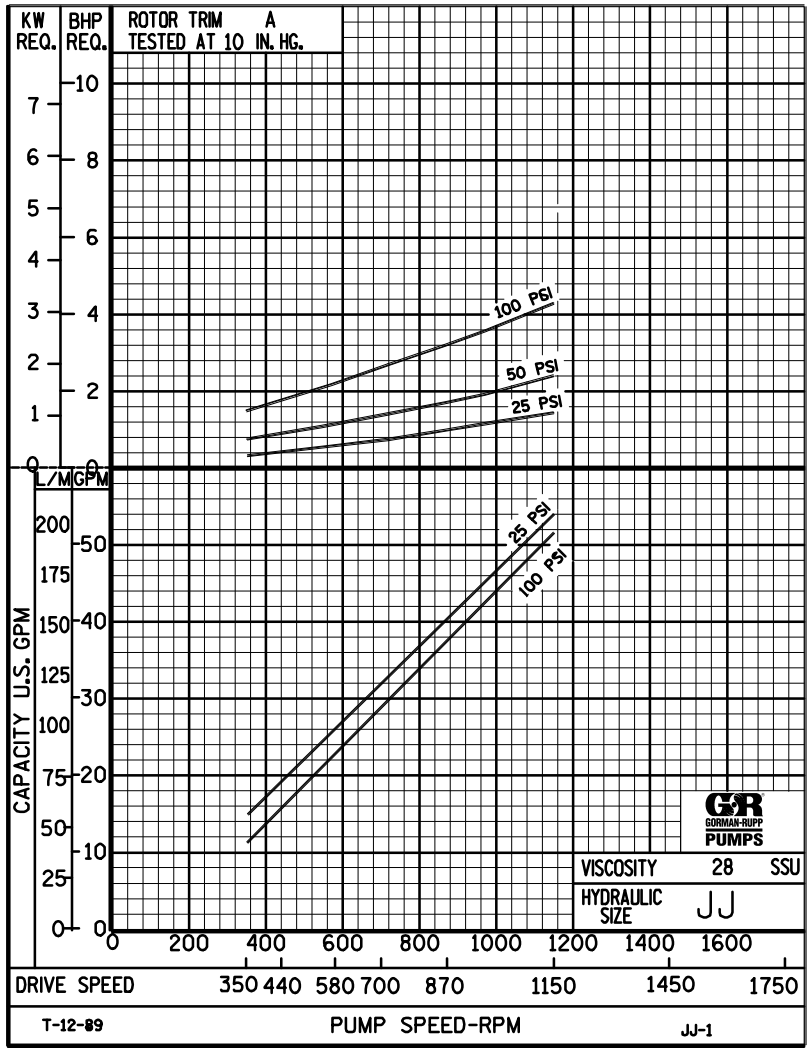
SECTION 545

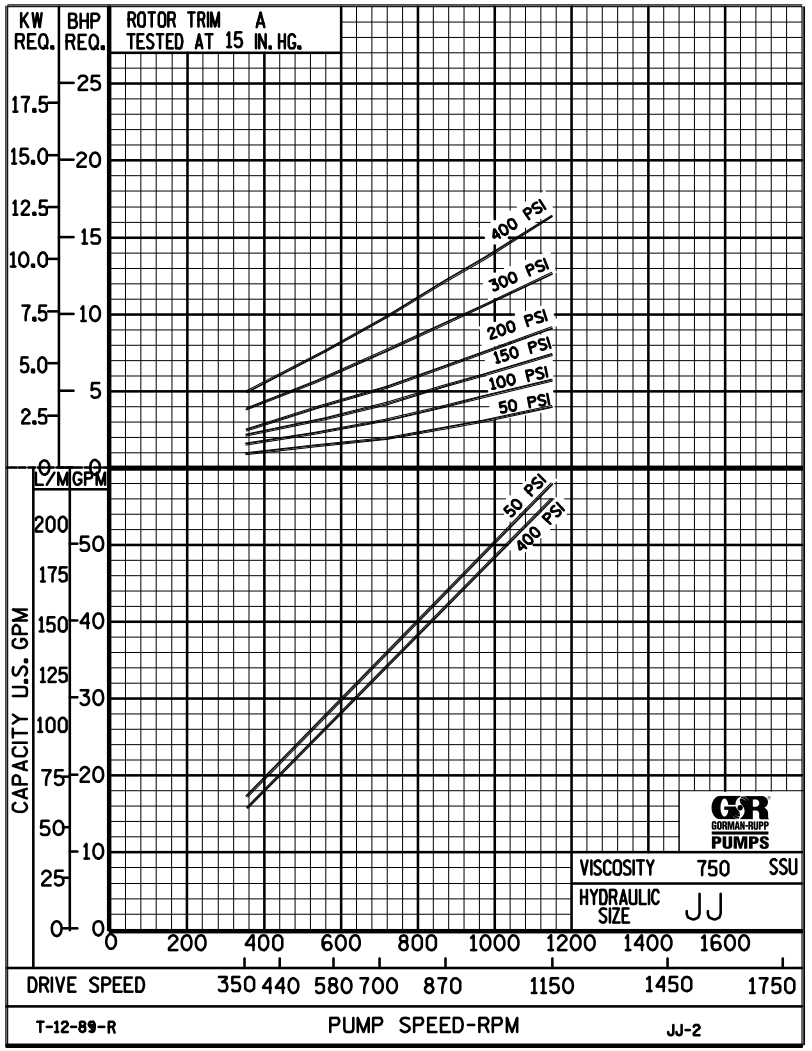
GORMAN-RUPP
ROTARY GEAR PUMPS

PERFORMANCE CURVES

SPEED VS. CAPACITY/HORSEPOWER

JJ Hydraulic Size

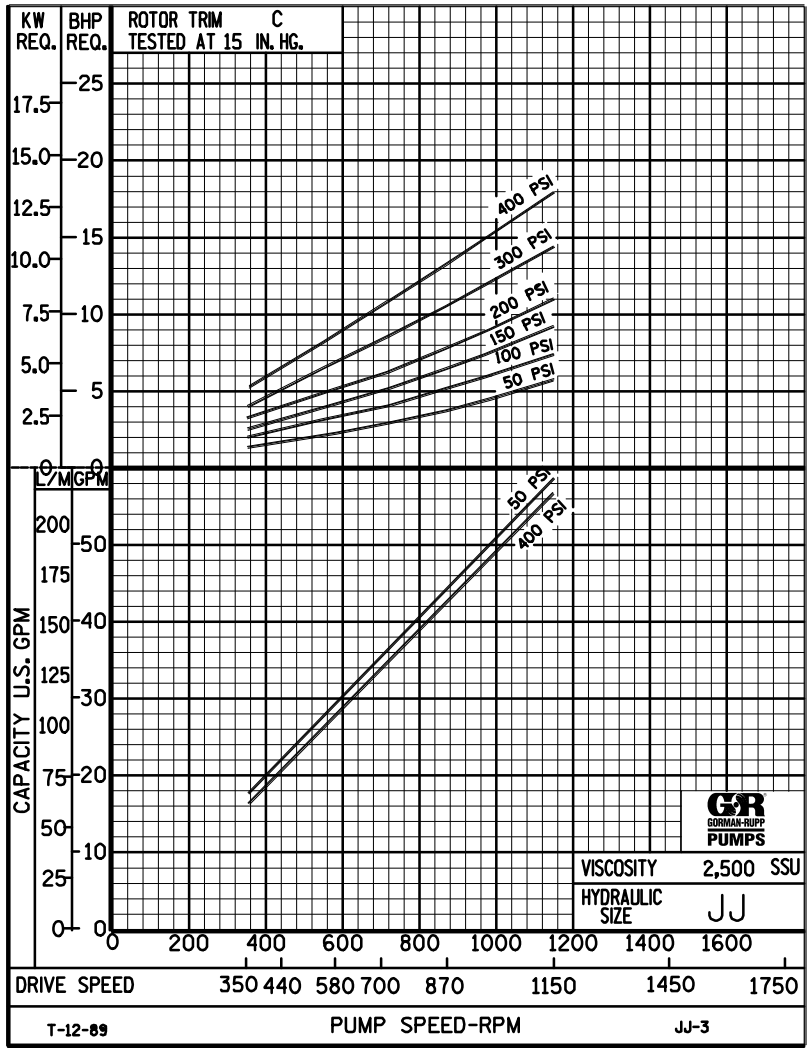


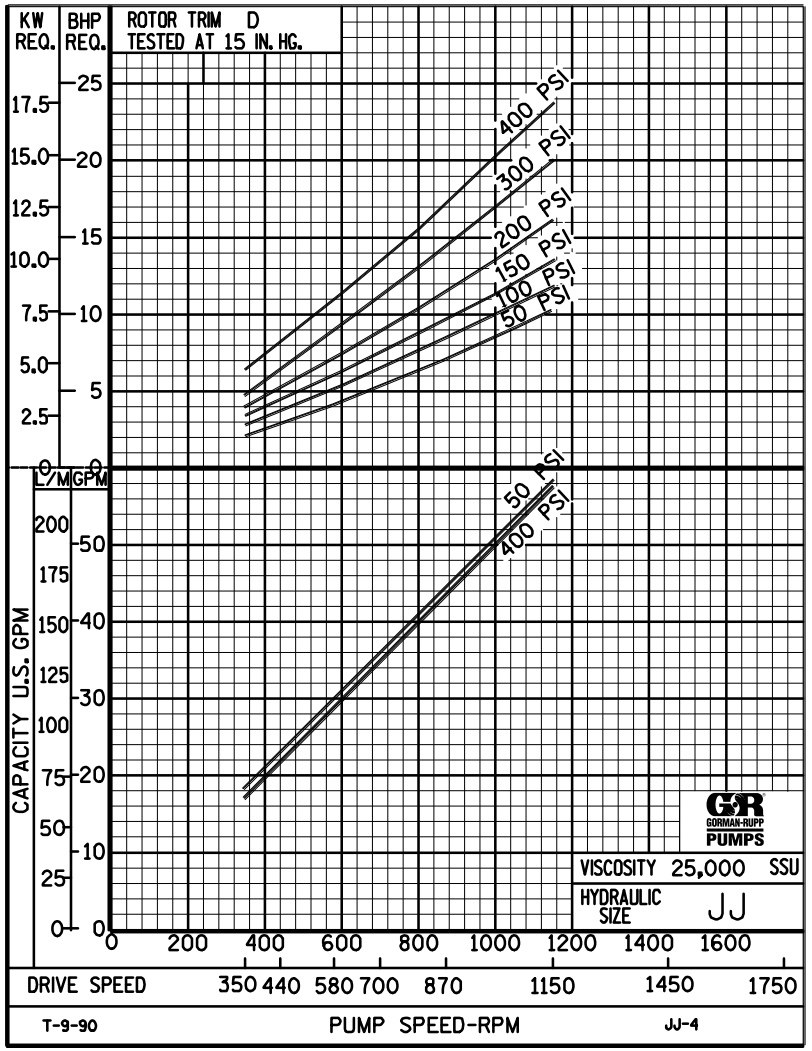


PERFORMANCE CURVES

SPEED VS. CAPACITY/HORSEPOWER

JJ Hydraulic Size





GORMAN-RUPP
ROTARY GEAR PUMPS

JJ

PUMP HYDRAULIC SIZE CHART

56 GPM
1150 RPM

NOMINAL CAP. GPM	NOMINAL SPEED RPM	ROTOR TRIM	VISCOSITY (SSU)	N.I.P.R. (PSIA)	FRICTION PIPE LOSS (PSI/FT) (Based on Sch 40 Steel Pipe) PIPE DIAMETER 1½"	2"	2½"	3"	4"	FULL BYPASS RELIEF VALVE PRESSURE (PSI) CRACKING PRESS. (PSI) LOW PRES R/V 50	75	100	HI PRES R/V 150	200	CAPACITY (GPM) / H.P. REQUIRED DIFFERENTIAL PRESSURE (PSI) 25	50	75	100	150	200	300	400
															HEAVY DUTY							
56	1150	STD	28	4.0	.01	.01	.01	.01	.01	62	87	114			54	52	52	51				
			32		.07	.02	.01	.01	.01						1.0	2.4	3.3	4.3				
			38	4.0	.09	.03	.01	.01	.01	62	89	116	166		55	54	53	53	51			
			50		.11	.03	.02	.01	.01						1.6	2.5	3.5	4.4	6.4			
			70	4.0	.13	.04	.02	.01	.01	63	90	118	167	219	56	55	55	54	53	52		
			100		.15	.05	.02	.01	.01						1.8	2.7	3.6	4.6	6.5	8.7		
			150	4.0	.16	.05	.02	.01	.01	64	91	120	167	219	57	56	56	55	54	54	53	52
			200		.18	.05	.02	.01	.01						2.1	3.0	3.9	4.8	6.6	8.7	12	16
			300	4.0	.20	.06	.03	.01	.01	65	92	122	168	220	57	57	57	56	56	55	55	54
			500		.25	.09	.05	.02	.01						2.8	3.6	4.6	5.4	7.1	9.0	13	16
			750	4.0	.37	.14	.07	.03	.01	66	93	124	168	220	58	58	57	57	57	57	56	56
			1,000		.49	.18	.09	.04	.02						3.2	4.0	4.9	5.7	7.4	9.2	13	16
			2,000	4.3	.98	.36	.18	.08	.03	70	95	124	168	222	58	58	58	58	58	57	57	56
		"C"	3,500		1.72	.63	.31	.13	.05						4.6	5.7	6.6	7.4	9.2	11	14	18
			5,000	4.5	2.45	.90	.44	.19	.06	72	97	126	170	224	59	58	58	58	58	58	57	57
			7,500		3.68	1.35	.67	.28	.10						6.6	7.3	8.0	8.8	11	13	16	20
			10,000	4.7	4.90	1.81	.89	.37	.13	74	99	128	172	226	59	58	58	58	58	58	57	57
			15,000		7.35	2.71	1.33	.56	.19						8.8	9.0	10	11	13	15	18	2.0
			20,000	4.9	9.80	3.61	1.77	.74	.25	78	103	128	174	226	58	58	58	58	58	58	57	57
		"D"	25,000		12.3	4.51	2.22	.93	.31						9.7	10	11	12	14	16	20	24
			50,000	6.9	24.5	9.02	4.43	1.86	.63	82	107	132	178	230	58	58	58	58	58	58	57	57
			75,000		–	–	–	–	–						15	16	16	18	19	22	25	30
			100,000																			
			150,000																			
			200,000																			
			250,000																			

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

GORMAN-RUPP
ROTARY GEAR PUMPS

JJ

PUMP HYDRAULIC SIZE CHART

42 GPM
870 RPM

NOMINAL CAP. GPM	NOMINAL SPEED RPM	ROTOR TRIM	VISCOSITY (SSU)	N.I.P.R. (PSIA)	FRICTION PIPE LOSS (PSI/FT) (Based on Sch 40 Steel Pipe) PIPE DIAMETER 1½"	2"	2½"	3"	4"	FULL BYPASS RELIEF VALVE PRESSURE (PSI) CRACKING PRESS. (PSI) LOW PRES R/V 50	75	100	HI PRES R/V 150	200	CAPACITY (GPM) / H.P. REQUIRED DIFFERENTIAL PRESSURE (PSI) 25	50	75	100	150	200	300	400
															MEDIUM DUTY AND HEAVY DUTY					HEAVY DUTY ONLY		
42	870	STD	28	2.7	.01	.01	.01	.01	.01	60	85	117			40	39	39	38				
			32		.04	.01	.01	.01	.01						.98	1.7	2.5	3.2				
			38	2.7	.06	.02	.01	.01	.01	60	85	117	161		41	40	40	39	38			
			50		.07	.02	.01	.01	.01						1.1	1.8	2.5	3.3	4.8			
			70	2.7	.08	.03	.01	.01	.01	60	85	117	161	213	42	42	41	40.8	40	39		
			100		.09	.03	.01	.01	.01						1.1	1.9	2.6	3.3	4.9	6.4		
			150	2.7	.10	.03	.01	.01	.01	61	86	119	161	213	43	42	42	42	41	41	40	39
			200		.10	.03	.01	.01	.01						1.3	2.0	2.7	3.4	4.9	6.5	9.1	12
			300	2.7	.11	.04	.02	.01	.01	61	88	119	161	213	43	43	43	42	42	42	41	41
			500		.19	.07	.03	.02	.01						1.8	2.4	3.0	3.7	5.0	6.6	9.2	12
			750	2.7	.28	.10	.05	.02	.01	61	88	119	161	213	43	43	43	43	43	42	42	42
			1,000		.37	.14	.07	.03	.01						2.4	2.6	3.3	4.0	5.4	6.7	9.4	13
			2,000	3.1	.74	.27	.13	.06	.02	63	90	121	163	215	44	44	43	43	43	43	42	42
		"C"	3,500		1.29	.47	.23	.10	.03						3.0	3.7	4.5	5.2	6.5	7.8	11	13
			5,000	3.4	1.84	.68	.33	.14	.05	65	92	123	163	215	44	44	44	43	43	43	43	42
			7,500		2.76	1.02	.50	.21	.07						4.6	5.3	6.0	6.6	7.8	9.1	12	15
			10,000	3.7	3.68	1.35	.67	.28	.10	67	94	126	163	217	44	44	44	44	43	43	43	42
			15,000		5.51	2.03	1.00	.42	.14						5.5	6.3	7.0	7.7	9.0	10	13	16
			20,000	3.9	7.35	2.71	1.33	.56	.19	69	96	129	163	217	44	44	44	44	43	43	43	42
		"D"	25,000		9.19	3.38	1.66	.70	.24						6.4	7.0	7.7	8.5	10	11	14	17
			50,000	5.8	18.4	6.76	3.32	1.40	.47	73	100	133	167	221	44	44	44	44	43	43	43	42
			75,000		27.6	10.2	4.99	2.09	.71						9.6	10	11	12	13	15	18	21
			100,000	7.8	36.8	13.5	6.65	2.79	.94	77	104	137	171	225	44	44	44	44	43	43	43	42
			150,000		–	–	–	–	–						12	13	14.	15	16	19	21	24
			200,000																			
			250,000																			

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

GORMAN-RUPP
ROTARY GEAR PUMPS

JJ

PUMP HYDRAULIC SIZE CHART

28 GPM
580 RPM

NOMINAL		ROTOR TRIM	VISCOSITY	N.I.P.R.	FRICTION PIPE LOSS (PSI/FT) (Based on Sch 40 Steel Pipe)					FULL BYPASS RELIEF VALVE PRESSURE (PSI)					CAPACITY (GPM) / H.P. REQUIRED							
															DIFFERENTIAL PRESSURE (PSI)							
CAP. GPM	SPEED RPM		(SSU)	(PSIA)	PIPE DIAMETER					CRACKING PRESS. (PSI)					25	50	75	100	150	200	300	400
										LOW PRES R/V			HI PRES R/V		MEDIUM DUTY AND HEAVY DUTY					HEAVY DUTY ONLY		
					1½"	2"	2½"	3"	4"	50	75	100	150	200								
28	580	STD	28	1.7	.01	.01	.01	.01	.01	54	80	111			26	25	25	24				
			32		.02	.01	.01	.01	.01						.61	1.2	1.7	2.2				
			38	1.7	.03	.01	.01	.01	.01	54	80	111	157		26	26	26	25	24			
			50		.03	.01	.01	.01	.01						.64	1.2	1.7	2.2	3.4			
			70	1.7	.04	.01	.01	.01	.01	54	81	111	157	209	27	27	26	26	25	24		
			100		.05	.02	.01	.01	.01						.69	1.2	1.8	2.2	3.4	4.2		
			150	1.7	.05	.02	.01	.01	.01	54	81	111	157	209	28	28	27	27	26	26	25	25
			200		.05	.02	.01	.01	.01						.77	1.3	1.8	2.3	3.4	4.2	6.0	7.9
			300	1.7	.08	.03	.01	.01	.01	55	82	111	157	209	28	28	28	27	27	27	26	26
			500		.12	.05	.02	.01	.01						.90	1.5	1.9	2.4	3.4	4.2	6.0	7.9
			750	1.7	19	.07	.03	.02	.01	55	82	111	157	209	29	28	28	28	28	28	27	27
			1,000		.25	.09	.05	.02	.01						1.3	1.8	2.2	2.7	3.5	4.3	6.3	8.1
			2,000	2.1	.49	.18	.09	.04	.01	57	84	113	157	209	29	29	29	28	28	28	28	27
		"C"	3,500		.86	.32	.16	.07	.02						2.2	2.6	3.1	3.5	4.4	5.3	7.2	9.0
			5,000	2.4	1.23	.45	.22	.09	.03	59	86	115	158	210	29	29	29	29	28	28	28	28
			7,500		1.84	.68	.33	.14	.05						2.8	3.2	3.6	4.1	5.0	5.9	7.8	9.6
			10,000	2.7	2.45	.90	.44	.19	.06	61	88	118	159	211	29	29	29	29	29	29	28	28
			15,000		3.68	1.35	.67	.28	.10						3.3	3.7	4.2	4.7	5.6	6.6	8.5	10
			20,000	3.0	4.90	1.81	.89	.37	.13	64	91	121	159	211	30	29	29	29	29	29	29	28
		"D"	25,000		6.13	2.26	1.11	.47	.16						3.7	4.2	4.7	5.1	6.2	7.1	9.0	11
			50,000	4.6	12.3	4.51	2.22	.93	.31	67	94	124	162	214	30	29	29	29	29	29	29	28
			75,000		18.4	6.76	3.32	1.40	.47						5.6	6.2	6.7	7.4	8.0	9.6	11	14
			100,000	6.6	24.5	9.02	4.43	1.86	.63	71	98	128	166	218	30	29	29	29	29	29	29	28
			150,000		36.8	13.5	6.65	2.79	.94						7.0	7.8	8.4	9.3	9.6	12	13	16
			200,000	10.0	49.0	18.0	8.86	3.72	1.25	74	101	131	169	221	30	29	29	29	29	29	29	28
			250,000		–	–	–	–	–						8.4	9.4	9.9	11	11	13	15	17

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

GORMAN-RUPP
ROTARY GEAR PUMPS

JJ

PUMP HYDRAULIC SIZE CHART

17 GPM
350 RPM

NOMINAL		ROTOR TRIM	VISCOSITY	N.I.P.R.	FRICTION PIPE LOSS (PSI/FT) (Based on Sch 40 Steel Pipe)					FULL BYPASS RELIEF VALVE PRESSURE (PSI)					CAPACITY (GPM) / H.P. REQUIRED							
															DIFFERENTIAL PRESSURE (PSI)							
CAP. GPM	SPEED RPM		(SSU)	(PSIA)	PIPE DIAMETER					CRACKING PRESS. (PSI)					25	50	75	100	150	200	300	400
										LOW PRES R/V			HI PRES R/V		MEDIUM DUTY AND HEAVY DUTY					HEAVY DUTY ONLY		
					1½"	2"	2½"	3"	4"	50	75	100	150	200								
17	350	STD	28	1.2	.01	.01	.01	.01	.01	53	79	109			15	15	15	14				
			32		.01	.01	.01	.01	.01						.33	.61	1.0	1.3				
			38	1.2	.01	.01	.01	.01	.01	53	79	109	156		16	15	15	15	14			
			50		.02	.01	.01	.01	.01						.37	.64	1.0	1.4	2.1			
			70	1.2	.02	.01	.01	.01	.01	53	79	109	156	207	16	16	16	15	15	15		
			100		.02	.01	.01	.01	.01						3.9	.69	1.1	1.4	2.1	2.8		
			150	1.2	.02	.01	.01	.01	.01	54	80	109	156	207	17	16	16	16	16	15	15	14
			200		.03	.01	.01	.01	.01						.48	.74	1.1	1.4	2.1	2.8	3.7	4.8
			300	1.2	.05	.02	.01	.01	.01	54	80	109	156	207	17	17	17	16	16	16	16	15
			500		.08	.03	.02	.01	.01						.63	.82	1.1	1.5	2.1	2.8	3.7	4.8
			750	1.2	.11	.04	.02	.01	.01	54	80	109	156	207	17	17	17	17	17	16	16	16
			1,000		,15	.06	.03	.01	.01						.76	1.0	1.3	1.6	2.2	2.8	3.8	4.9
			2,000	1.7	.30	.11	.06	.02	.01	55	81	110	157	208	17	17	17	17	17	17	16	16
		"C"	3,500		.52	.19	.10	.04	.01						1.3	1.6	1.8	2.1	2.7	3.1	4.3	5.4
			5,000	2.0	.75	.28	.14	.06	.02	56	82	111	158	209	17	17	17	17	17	17	17	17
			7,500		1.12	.41	.20	.09	.03						1.6	1.9	2.2	2.4	3.0	3.5	4.6	5.7
			10,000	2.3	1.49	.55	.27	.11	.04	57	84	112	159	210	17	17	17	17	17	17	17	17
			15,000		2.23	.82	.40	.17	.06						1.8	2.2	2.5	2.8	3.4	3.9	5.0	6.2
			20,000	2.5	2.98	1.10	.54	.23	.08	59	86	113	159	210	18	17	17	17	17	17	17	17
		"D"	25,000		3.72	1.37	.67	.28	.10						2.0	2.5	2.8	3.0	3.7	4.3	5.4	6.5
			50,000	3.9	7.44	2.74	1.35	.57	.19	61	88	115	161	212	18	17	17	17	17	17	17	17
			75,000		11.2	4.11	2.02	.85	.29						3.0	3.7	4.0	4.4	4.6	5.9	6.7	8.1
			100,000	5.6	14.9	5.48	2.69	1.13	.38	64	91	118	164	215	18	17	17	17	17	17	17	17
			150,000		22.3	8.21	4.04	1.69	.57						3.7	4.7	5.0	5.4	5.7	7.0	7.8	9.3
			200,000	8.4	29.8	11.0	5.38	2.26	.76	67	94	121	167	218	18	17	17	17	17	17	17	17
			250,000		37.2	13.7	6.73	2.82	.95						4.5	5.6	5.9	6.4	6.5	8.1	8.7	10

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

GORMAN-RUPP
ROTARY GEAR PUMPS

JJ

SEC. 500

PAGE 73.1

February 2025

8 GPM
150 RPM

NOMINAL		VISCOSITY		N.I.P.R	FRICTION PIPE LOSS (PSI/FT) (Schedule 40 Steel Pipe)					CAPACITY (GPM)				H.P. REQUIRED			
					PIPE DIAMETER					MEDIUM-DUTY & HEAVY-DUTY				HEAVY-DUTY ONLY			
										DIFFERENTIAL PRESSURE (PSI)							
GPM	RPM	ROTOR TRIM	(SSU)	(PSIa)	2"	2½"	3"	4"	5"	25	50	75	100	150	200	300	400
8	150	STD															
		"D"	200,000	3.2	5.2	2.5	1.1	0.4	0.2	7.7	7.7	7.7	7.7	7.6	7.6	7.5	7.4
			399,999		10.3	5.1	2.1	0.7	0.3	1.9	2.1	2.3	2.5	2.8	3.1	3.4	3.8
			400,000	3.6						7.7	7.7	7.7	7.7	7.6	7.6	7.5	7.4
			599,999		15.5	7.6	3.2	1.1	0.4	2.1	2.3	2.5	2.7	3.0	3.3	3.6	4.0
			600,000	4.4						7.7	7.7	7.7	7.7	7.6	7.6	7.5	7.4
			799,999		20.6	10.1	4.3	1.4	0.6	2.3	2.5	2.7	2.9	3.2	3.5	3.8	4.2
			800,000	4.8						7.7	7.7	7.7	7.7	7.6	7.6	7.5	7.4
			1M		NR	12.7	5.3	1.8	0.7	2.6	2.8	3.0	3.2	3.5	3.8	4.1	4.5

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