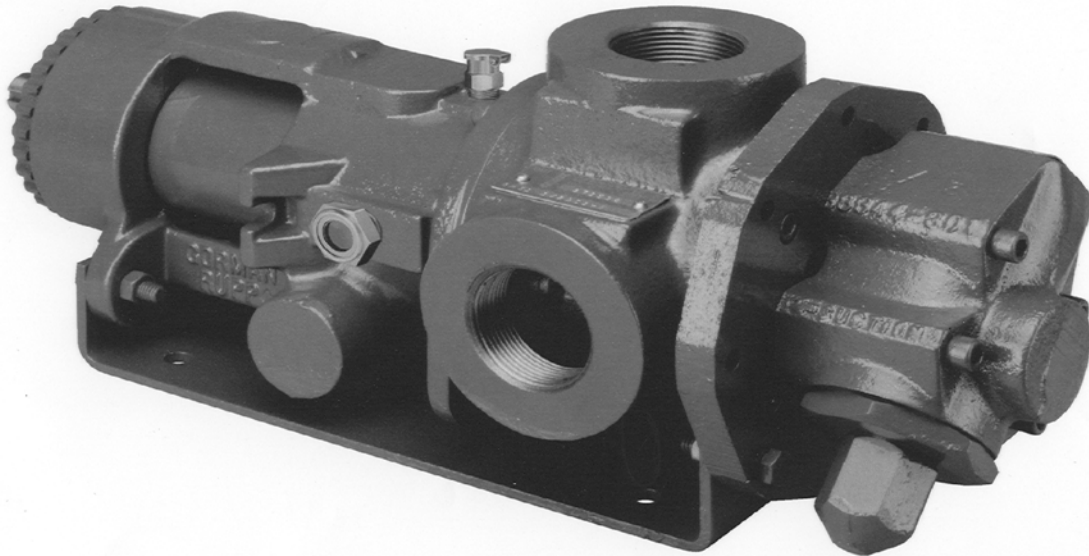


PUMP SPECIFICATION BULLETIN

**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
 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]			LBS [KG]
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 ■								357 [162]	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

THE GORMAN-RUPP COMPANY ● MANSFIELD, OHIO
GORMAN-RUPP OF CANADA LIMITED ● ST. THOMAS, ONTARIO, CANADA

MODEL NUMBER	NOM. CAPACITY-SPEED		MAXIMUM				SHIPPING DATA	
	MAXIMUM		DIFFERENTIAL PRESSURE - PSI [BAR]			TEMP.	Weight LBS [KG]	Volume CU. FT.
	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 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]	100 [7]	150 [10]	200 [14]	● 250 [119] ■ 500 [260]	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]	350 [290]	100 [7]	150 [10]	200 [14]	● 400 [204] ■ 500 [260]	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.

SEAL LIMITATIONS:			
● MECH. SEAL OPTIONS	MAXIMUM DISCHARGE PRESSURE (PSI [BAR])	MAXIMUM VISCOSITY (SSU [cSt])	TEMPERATURE RANGE (°F [°C])
STD (Friction Drive)	200 [14]	15,000 [3250]	0 to 400 [-17 to 204]
62A, 62B	300 [21]	75,000 [16,500]	0 to 400 [-17 to 204]
62C	300 [21]	25,000 [5417]	-20 to 400 [-29 to 204]
■ PACKING OPTION	MAXIMUM DISCHARGE PRESSURE (PSI [BAR])	MAXIMUM VISCOSITY (SSU [cSt])	TEMPERATURE RANGE (°F [°C])
STD	400 [28]	2,000,000 [440,000]	-50 to 550 [-45 to 280]
65S	400 [28]	2,000,000 [440,000]	-50 to 500 [-45 to 260]

NOTE: PROPER PUMP APPLICATION REQUIRES CONSIDERATION OF ADDITIONAL FACTORS. PLEASE REVIEW CHALLENGING APPLICATIONS IN SECTION 500 AND THE LIQUIDS LIST IN THE ROTARY GEAR REFERENCE GUIDE.

THE GORMAN-RUPP COMPANY • MANSFIELD, OHIO
GORMAN-RUPP OF CANADA LIMITED • ST. THOMAS, ONTARIO, CANADA

BUSHING LIMITATIONS				
Bushing Option	Optimal Viscosity Range	Temp Limit, °F[C]	Abrasives	Corrosives
STD, 42A, 72B, 72C	0.1 cPs to 2,000,000 SSU	400 [205] ①	Yes	Yes *
42R, 42W 72K	0.1 cPs to 2,000,000 SSU	675 [360]	Yes	Yes*
42B	50 to 100,000 SSU	300 [150]	Yes	Yes*

Note: * Consult chemical compatability charts for new applications.

Options

CATEGORY	STANDARD	OPTION NUMBER & DESCRIPTION		
ROTATION	C.W. (VIEWED FROM SHAFT END)	01A	C.C.W.	
		01B	BI-ROTATION	
HOUSING PORTS	90° HARDENED IRON	HYDRAULIC SIZE		PORT
		05W	NK, NM, NP	3" 90° - 125# FLANGED
HOUSING PORT CLOCK POSITION	90° (3 SUCTION - 12 DISCHARGE) (VIEWED FROM SHAFT END)	90° (3-12)		
		15A	12 - 9	
RELIEF VALVE	LOW PRESSURE RELIEF VALVE DUCTILE IRON/VITON FOR CRACKING PRESSURE RANGES REFER TO SECTION 500, PG 18	25A	HIGH PRESSURE	
		25C	LESS RELIEF VALVE	
		25G	RETURN TO TANK - LOW PRESSURE - NEOPRENE O-RING	
		25H	RETURN TO TANK - HIGH PRESSURE - NEOPRENE O-RING	
		25J	LOW PRESSURE, TEF-ENCAP O-RING	
		25K	HIGH PRESSURE, TEF-ENCAP O-RING	
GEAR TRIM	B TRIM ②	35C	C TRIM (VISCOSITY)	
		35D	D TRIM (VISCOSITY)	
		35J	T2A TRIM (TEMPERATURE)	
		35L	T2C TRIM (TEMP/VISCOSITY)	
		35M	T2D TRIM (TEMP/VISCOSITY)	
		35X	CUSTOM TRIM	
OPTIONS CONTINUED		FOR VISCOSITY/TEMPERATURE TRIM CHART REFER TO SECTION 500, PAGE 20. (TRIM ACCORDING TO VISCOSITY; CONTACT DISTRIBUTOR OR FACTORY.)		

CONSULT FACTORY FOR ADDITIONAL OPTIONS

① EXCEPT "S" SIZE, TEMPERATURE LIMIT IS 500°F/260°C

② SEE SECTION 500 FOR CAPACITY CORRECTION TABLE FOR LIQUIDS LESS THAN 750 SSU

THE GORMAN-RUPP COMPANY • MANSFIELD, OHIO

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

© Copyright by the Gorman-Rupp Co.

Options (Continued)

CATEGORY	STANDARD	OPTION NUMBER & DESCRIPTION
HEAD IDLER IDLER BUSHING	HARDENED CAST IRON HARDENED DUCTILE IRON SILICON CARBIDE	42A HEAD JACKET ①
		42B TUNGSTEN CARBIDE IDLER BUSHING
		42R HIGH TEMP SiC IDLER BUSHING
		42W HEAD JACKET, HIGH TEMP SiC IDLER BUSHING ① ⑤
SEAL	MECH. SEAL FRICTION DRIVE - SILICON CARBIDE SILICON CARBIDE VITON ②	62A LUG DRIVE - SILICON CARBIDE, SILICON CARBIDE, VITON ② ⑤
		62B LUG DRIVE - SILICON CARBIDE, SILICON CARBIDE, TEFLON ENCAP ② ⑤
		62C MODULAR - METAL BELLOWS - SiC, SiC, TEFLON ENCAP ③ ⑤
SEAL	PACKING ARAMID FIBER	65S PACKING - MINIMUM LEAK
BACKHEAD/ BUSHING	④ CAST IRON / ⑤ ROLLER BEARING	72B SILICON CARBIDE SHAFT BUSHING ⑤
		72C BACKHEAD JACKET, SILICON CARBIDE SHAFT BUSHING ①
		72K BACKHEAD JACKET, HIGH TEMP SILICON CARBIDE SHAFT BUSHING ① ⑤
CONSULT FACTORY FOR AUTOMATIC GREASE LUBE (PACKING SEAL ONLY)		

CONSULT FACTORY FOR ADDITIONAL OPTIONS

- ① LIMIT JACKET PRESSURE TO 150 PSIG.
- ② AVAILABLE WITH STANDARD BACKHEAD ONLY (72).
- ③ AVAILABLE WITH OPTIONAL BACKHEAD ONLY.
- ④ ROLLER BEARING AVAILABLE WITH MECHANICAL SEAL MODELS (3-B) ONLY.
- ⑤ NOT AVAILABLE FOR "S" SIZE.

THE GORMAN-RUPP COMPANY • MANSFIELD, OHIO

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

© Copyright by the Gorman-Rupp Co.

CATEGORY	STANDARD	OPTION NUMBER & DESCRIPTION						
MOUNTING FOOT	SEE TABLE	PUMP CENTER HEIGHT		HYDRAULIC SIZE				
	MOTOR FRAME REF.			G	J	N	R	S
	VIKING M INTERCHANGE	80B	10.00"	---	---	---	---	OPT
	56, 143T, 145T	80C	3.50"	STD.	---	---	---	---
	H, HL INTERCHANGE ①	80D	3.50"	OPT.	---	---	---	---
	182, 182T, 184, 184T	80F	4.50"	OPT.	OPT.	OPT.②	---	---
	AK, AL INTERCHANGE ①	80G	5.25"	---	OPT.	---	---	---
	213, 213T, 215, 215T	80J	5.25"	OPT.	STD.	STD.	---	---
	K, KK INTERCHANGE ①	80L	5.50"	---	---	OPT.	---	---
	254T, 254U, 256T, 256U	80P	6.25"	OPT.	OPT.	OPT.	---	---
	284T, 284U, 286T, 286U	80S	7.00"	---	OPT.	OPT.	STD.	---
	LS INTERCHANGE ①	80T	7.00"	---	---	---	OPT.	---
	L,LQ,LL,3B INTERCHANGE ①	80U	7.00"	---	---	OPT.	OPT.	---
	324T, 324U, 326T, 326U	80V	8.00"	---	OPT.	OPT.	---	---
MOUNTING FOOT	SEE TABLE	PUMP CENTER HEIGHT		HYDRAULIC SIZE				
	MOTOR FRAME REF.			G	J	N	R	
	D80	82A	80mm	OPT.	---	---	---	
	D90	82B	90mm	OPT.	---	---	---	
	D100	82C	100mm	OPT.	---	---	---	
	D112	82D	112mm	OPT.	OPT.	OPT.	---	
	D132	82E	132mm	OPT.	OPT.	OPT.	---	
	D160	82F	160mm	OPT.	OPT.	OPT.	---	
	D180	82G	180mm	---	OPT.	OPT.	---	
	D200	82H	200mm	---	OPT.	OPT.	---	

CONSULT FACTORY FOR ADDITIONAL OPTIONS

- ① FOR COMPETITOR PUMP INTERCHANGE DATA SEE SECTION I (MODEL INTERCHANGEABILITY CHART) IN THE ROTARY GEAR REFERENCE GUIDE.)
- ② WHEN USED WITH 90° HOUSING, THE RELIEF VALVE EXTENDS BELOW FOOT BRACKET; THEREFORE, SELECT LESS RELIEF VALVE OPTION OR 180° HOUSING.

THE GORMAN-RUPP COMPANY • MANSFIELD, OHIO
GORMAN-RUPP OF CANADA LIMITED • ST. THOMAS, ONTARIO, CANADA

© Copyright by the Gorman-Rupp Co.

GHA

FOR GHA DRIVE OPTIONS AND PRICE SHEETS

SEE

SECTION 545, PAGE 120 -- 175

FOR GHA DIMENSIONS

SEE

SECTION 545, PAGE 112



©Copyright by the Gorman-Rupp Company

www.gormanrupp.com

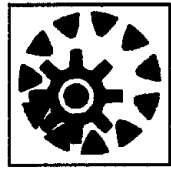
The Gorman-Rupp Company
305 Bowman Street, Mansfield, Ohio 44902-1217
Phone: 419/755-1011 FAX: 419/755-1251
E-Mail: grsales@gormanrupp.com

The Gorman-Rupp International Company
P.O. Box 1217, Mansfield, Ohio 44901-1217
Phone: 419/755-1011 FAX: 419/755-1266
E-Mail: intsales@gormanrupp.com

Gorman-Rupp of Canada Ltd.
70 Burwell Road
St. Thomas, Ontario N5P3R7
Phone: 519/631-2870 FAX: 519/631-4624
E-Mail: grcanada@grcanada.com



ROTARY GEAR PUMPS



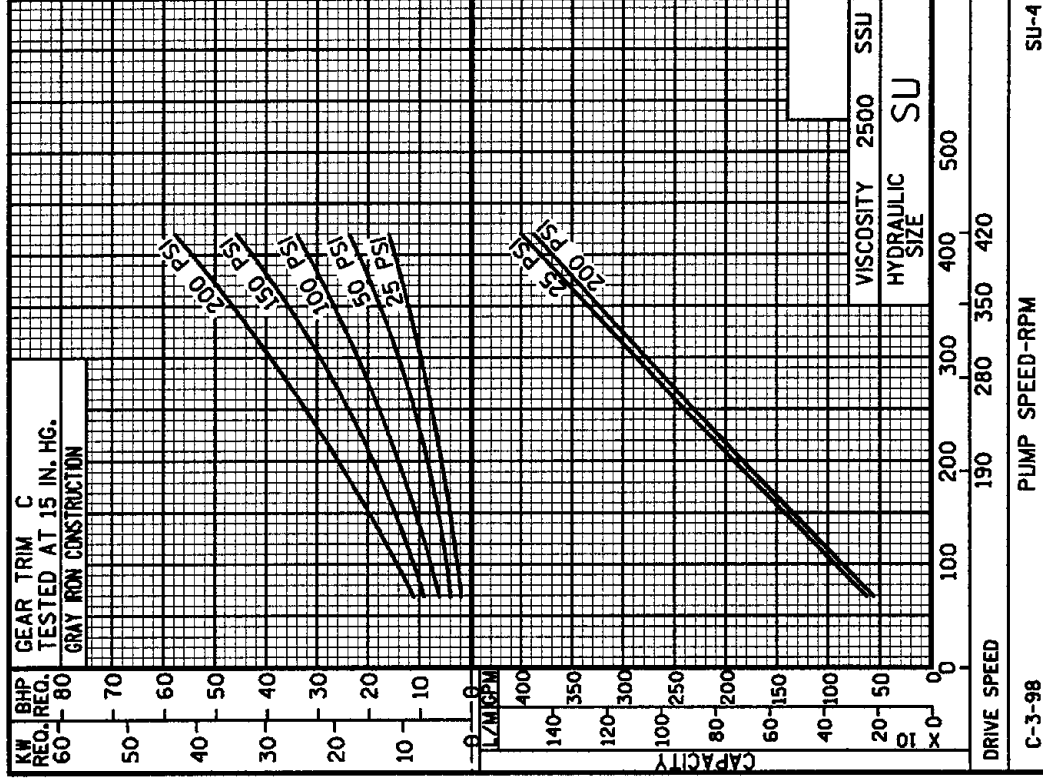
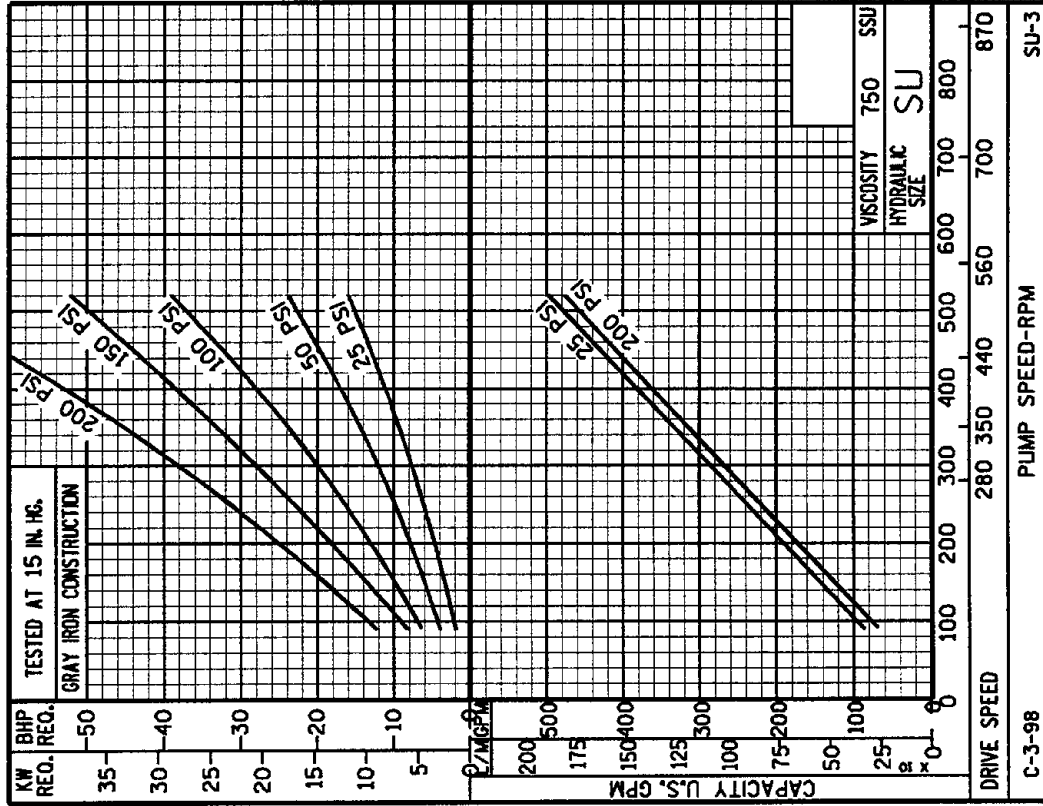
PERFORMANCE CURVES SU

SPEED VS. CAPACITY/HORSEPOWER

Hydraulic Size

PAGE 215

April 1998



THE GORMAN-RUPP COMPANY • MANSFIELD, OHIO
 GORMAN-RUPP OF CANADA LIMITED • ST. THOMAS, ONTARIO, CANADA

© Copyright by the Gorman-Rupp Co. 1990

Printed in U.S.A.



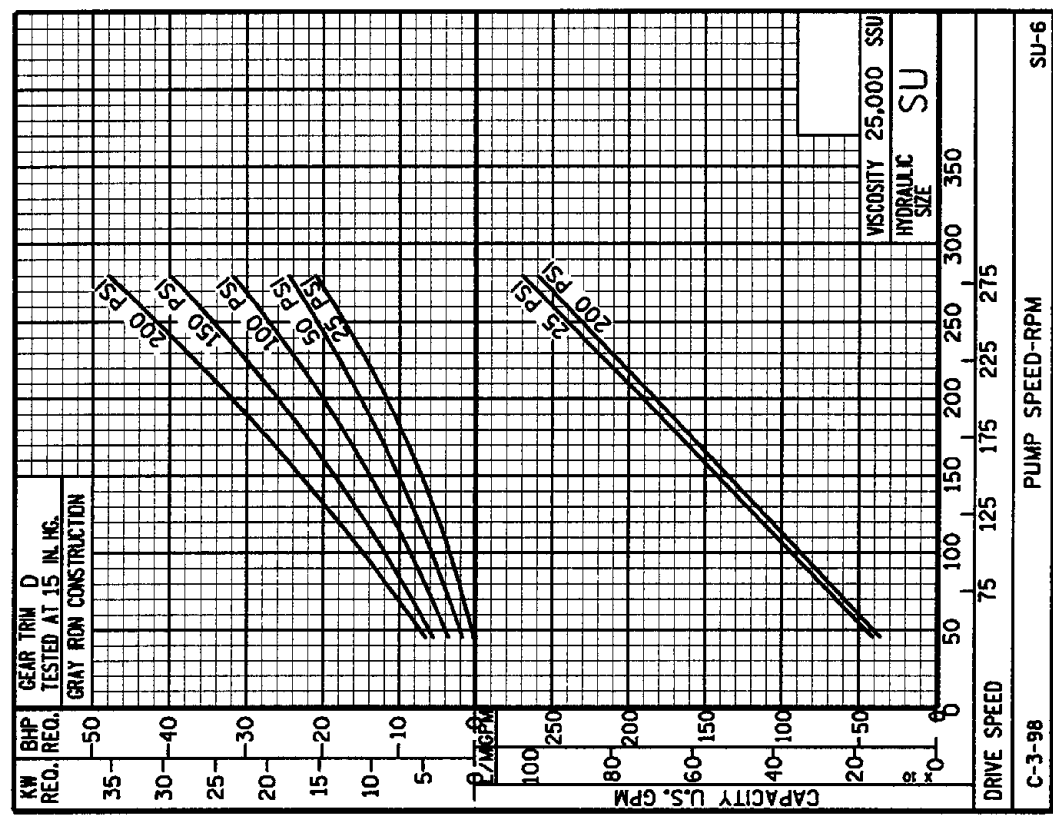
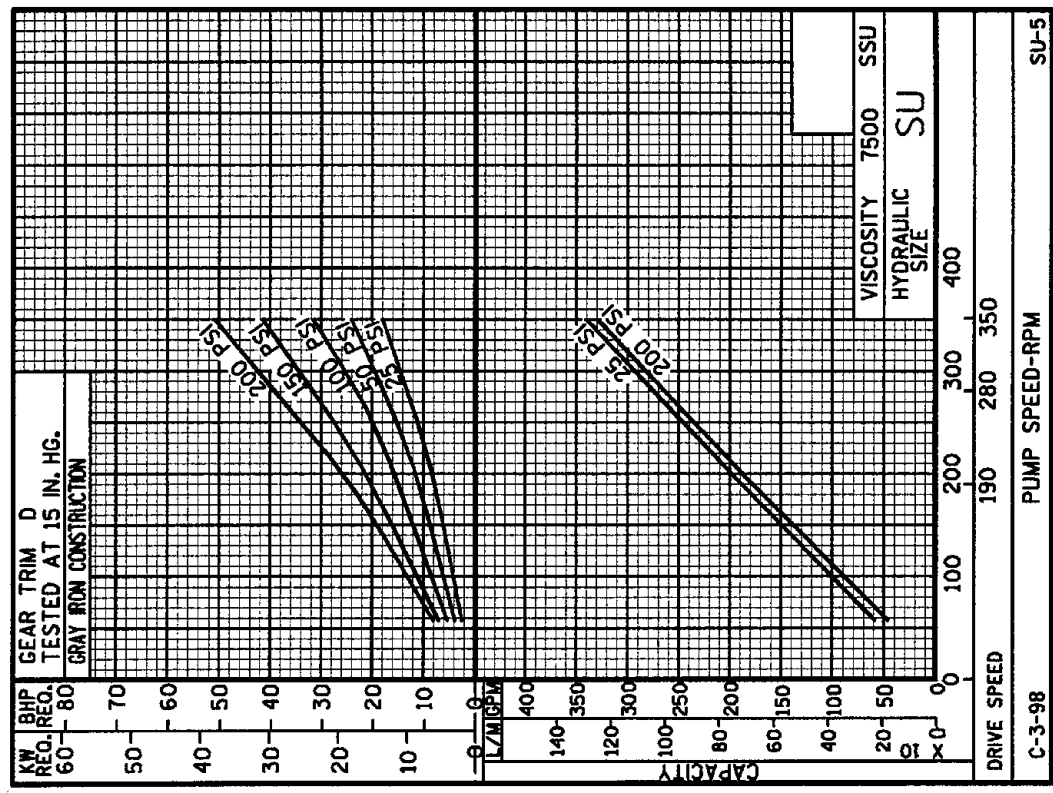
PERFORMANCE CURVES SU

SPEED VS. CAPACITY/HORSEPOWER

Hydraulic Size

PAGE 216

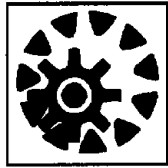
April 1998



THE GORMAN-RUPP COMPANY • MANSFIELD, OHIO
GORMAN-RUPP OF CANADA LIMITED • ST. THOMAS, ONTARIO, CANADA

© Copyright by the Gorman-Rupp Co. 1990

Printed in U.S.A.



PERFORMANCE CURVES

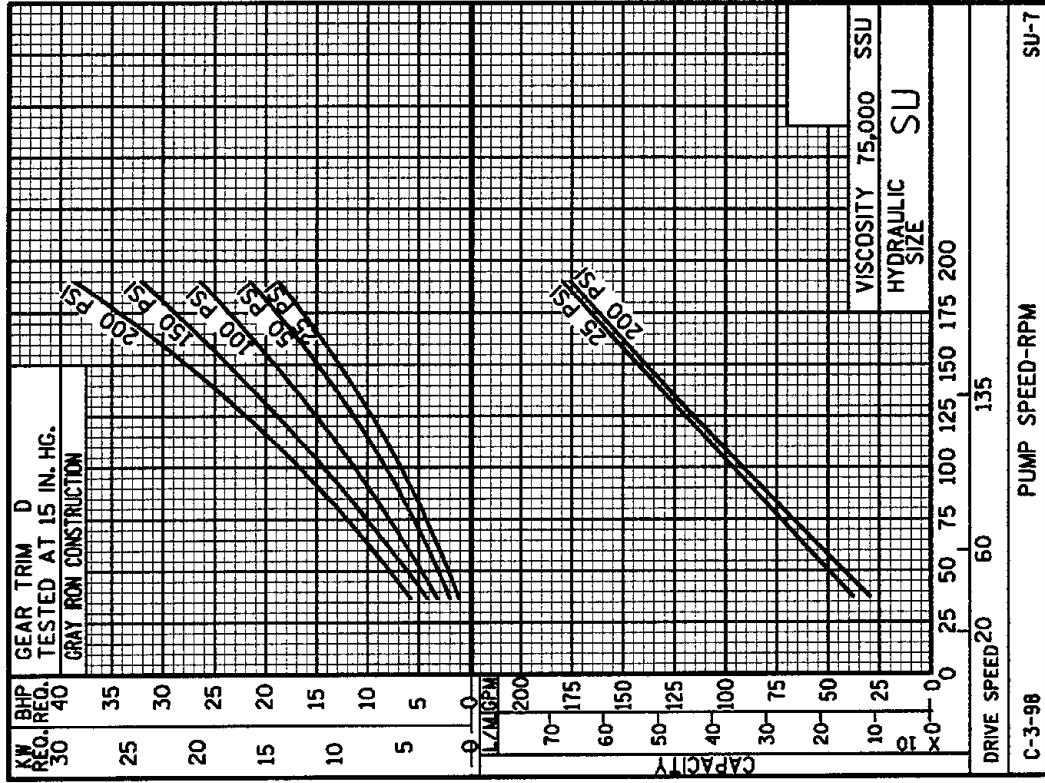
SU

SPEED VS. CAPACITY/HORSEPOWER

Hydraulic
Size

PAGE 217

April 1998



THE GORMAN-RUPP COMPANY • MANSFIELD, OHIO
GORMAN-RUPP OF CANADA LIMITED • ST. THOMAS, ONTARIO, CANADA

Printed in U.S.A.

© Copyright by the Gorman-Rupp Co. 1990