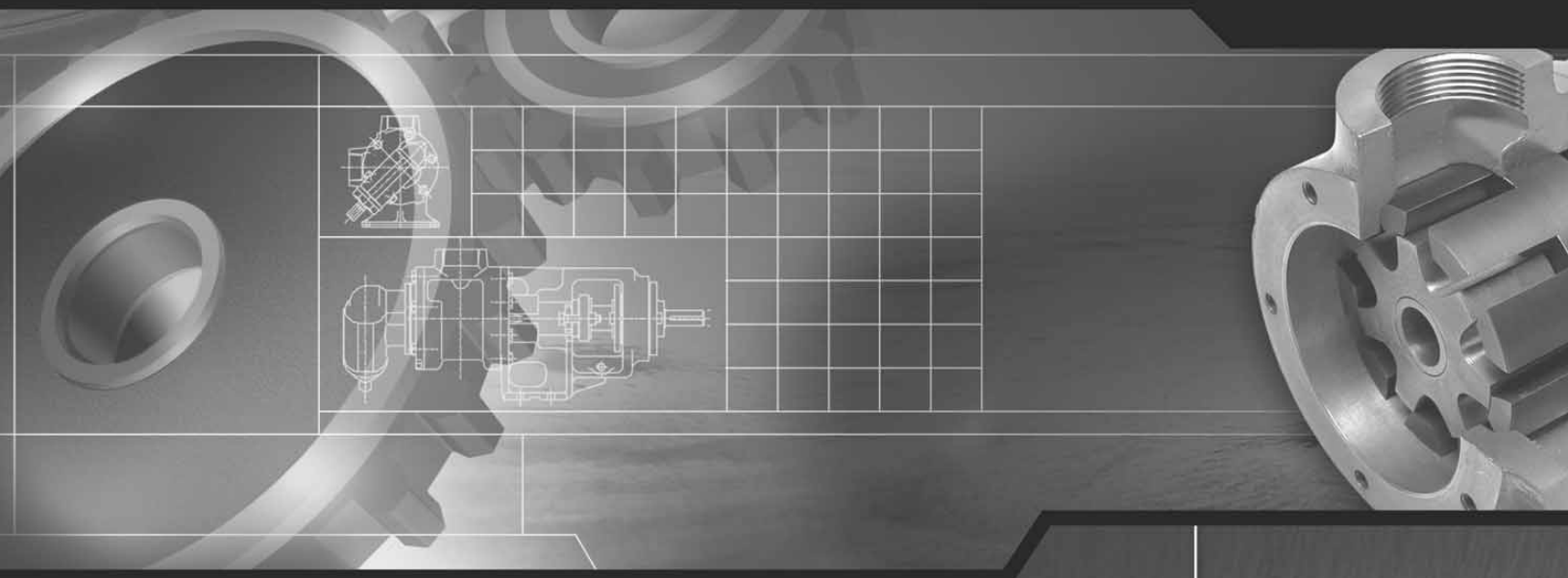
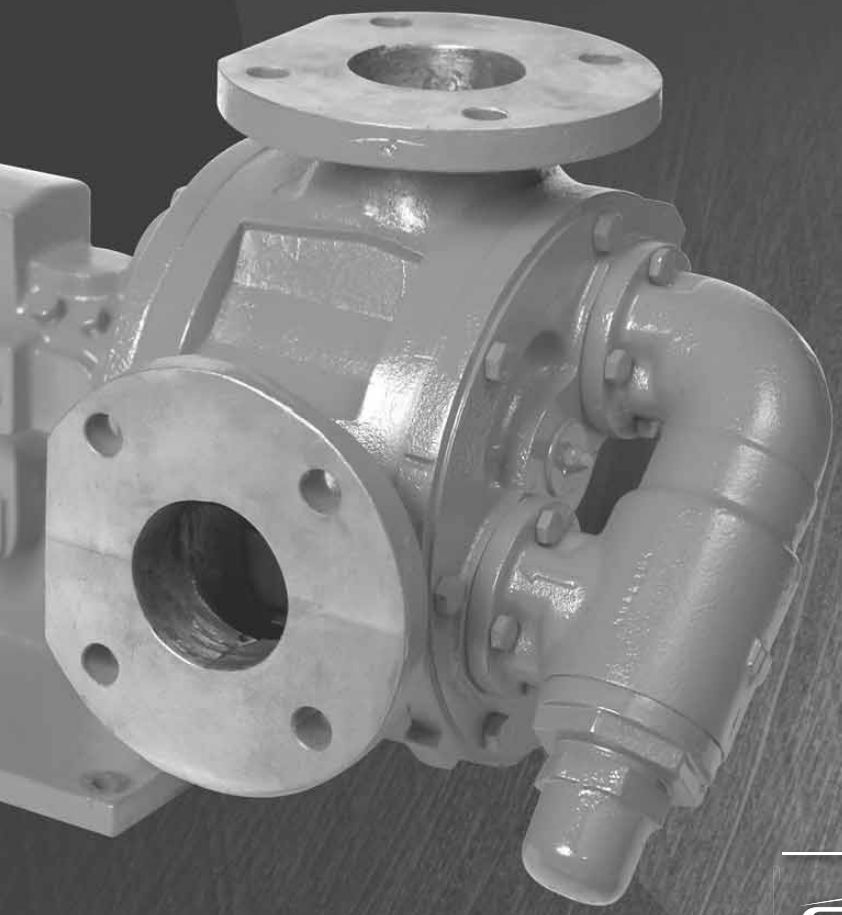
SPECTROM GEAR

EOM

Engineering
Operation &
Maintenance





SGH
SGHL
SGK
SGKK

124A / 4124A Series

SPECTROM™
AFTERMARKET PUMP PARTS

CE

SPC-10010-E-05
REPLACES SPC-10010-E-04

SPECTROM™ AFTERMARKET PUMPS & PARTS

TABLE OF CONTENTS

CAUTIONS—READ FIRST!

CAUTION: Only personnel who are familiar with the operation and repair of mechanical products should perform the necessary maintenance. You must familiarize yourself with the entire contents of this manual prior to operating and/or performing any maintenance.

CAUTION: When selecting a Spectrom™ gear pump for an application, you must first ensure that the pump components are compatible with the process media.

CAUTION: Prior to start-up, review and understand end clearance adjustments. Following these guidelines will ensure proper end clearance adjustment avoiding interference between the gears and head. Interference may cause heat generation and premature wear.

CAUTION: Do not operate this pump in excess of its rated capacity, pressure, speed, and temperature.

CAUTION: Before any maintenance and repair is attempted, disconnect the drive.

CAUTION: Before any maintenance or repair is attempted, bleed all pressure from the pump through the suction or discharge lines.

CAUTION: Do not remove any pressure containing components during pump operation.

CAUTION: All Spectrom™ Gear pumps contain residual hydraulic oil from the factory production test. Cosmo Process1000 (cylinder oil) andTelesso 68 (machine oil). Determine if this is compatible with the fluid you are pumping. If the fluid is incompatible, then the pump must be fully flushed prior to use.

CAUTION: When pumping fluids at elevated temperatures, care should be taken to gradually increase temperature. Rapid temperature increase can damage internal components.

CAUTION: Ensure that the pump has cooled to a safe temperature before any maintenance or repair is attemped.

CAUTION: When pumping fluids at elevated temperatures the piping may expand resulting in excessive stress on the pump. This can cause pump failure. Care must be taken when considering pipe design to avoid damage from thermal expansion.

CAUTION: Do not run the pump dry. This can cause damage to internal components and generate heat creating a hazardous condition for volatile fluids.

CAUTION: Prevention of static sparking – If static sparking occurs, fire or explosion could result. Pump, valves, and containers must be grounded to a proper grounding point when handling flammable fluids and whenever discharge of static electricity is a hazard.

CAUTION: The packing in a packed pump is designed to leak. Therefore, when pumping hazardous liquids, a mechanical seal is recommended to minimize any potential source of leakage that could result in a hazardous condition.

CAUTION: Do not adjust packing while pump is in operation.

CAUTION: All inlet and discharge plumbing should be clean and free from foreign material prior to start-up of pump.

CAUTION: Keep hands and fingers away from any pump opening while the pump is connected to the drive.

CAUTION: When connecting to an electric motor, follow all safety recommendation provided by the motor manufacturer.

CAUTION: The pump system design should include a system relief valve and never be run against a closed discharge valve as this can create excessive heat and cause premature wear.

CAUTION: Never remove safety guards from shafts, couplings, V-belts, or pulleys during operation. Doing so could result in injury.

CAUTION: When pumping high temperature fluids, avoid contact with the pump. Serious injury could occur.

CAUTION: Do not wear loose or dangling clothing or jewelry near the equipment. These items could become caught in the equipment and cause injury.

CAUTION: Before any maintenance or repair is attemped, ensure that the pump has been thoroughly flushed of any hazardous fluids. Review the Material Safety Data Sheet (MSDS) applicable to the fluid for proper handling.

SPECTROM™ AFTERMARKET PUMP PARTS

WILDEN DESIGNATION SYSTEM

GEAR PUMP

LEGEND

SGX / XXX / XXXX / XXXXX / XXXX

- SGX — SPECTROM GEAR PUMP
- XXX — PUMP TYPE / SIZE
- XXXX — SEAL TYPE
- XXXXX — CASING/HEAD/BRACKET MATERIAL
- XXXXX — ROTOR
- XXXXX — IDLER
- XXXXX — SHAFT & IDLER PIN
- XXXXX — BUSHING
- XXXXX — SEAL
- XXXXX — PRESSURE RELIEF VALVE
- XXXX — SPECIALTY CODE (if applicable)

MATERIAL CODES

PUMP TYPE / SIZE

H = 38mm (1-1/2") Threaded Inlet/Discharge
HL = 38mm (1-1/2") Threaded Inlet/Discharge
AK = 51mm (2") Threaded Inlet/Discharge
AL = 51mm (2") Threaded Inlet/Discharge
K = 51mm (2") Threaded Inlet/Discharge
KK = 51mm (2") Threaded Inlet/Discharge
L = 51 mm (2") Threaded Inlet/Discharge
LQ = 64mm (2-1/2") Flanged Inlet/Discharge
LL = 76mm (3") Flanged Inlet/Discharge

Note: AK and AL models are 125 or 4125 Series. ALL other models are 124A or 4124A Series.

SEAL TYPE

124A = Packed
4124A = Mechanical Seal
125 = Packed[3]
4125 = Mechanical Seal[3]

CASING/HEAD/BRACKET MATERIAL

C = Cast Iron

ROTOR

B = Bronze
C = Cast Iron (available in SGK, SGL, SGLQ and SGLL models)

IDLER

C = Cast Iron

SHAFT / IDLER PIN

M = Steel 4140T

BUSHING

B = Bronze
C = Carbon Graphite
(available for pumps with mechanical sealed pumps)

SEAL (SEAL RING BY MATING RING)

T = Non-asbestos Synthetic Fiber (packed only)
BC = NBR Carbon vs Ceramic[1]
VC = Viton® Carbon vs Ceramic[1]

PRESSURE RELIEF VALVE - INTERNAL

G2 = Cast Iron [0.0-6.9 bar (0-100 psig)]

NOTE: For pressures over 6.9 bar (100 psig) consult factory

Pump Selection Performance Criteria

Model	Nominal Pump Rating			Steel-fitted Units Above This Viscosity (SSU)	Maximum Recommended Discharge Temperature		[2]Maximum Recommended Temperature			
							Packed		Mechanical Seal	
	LPM	GPM	RPM		BAR	PSIG	°C	°F	°C	°F
SGH	57	15	1,800	25,000	13.8	200	149	300	100	212
SGHL	114	30	1,800	7,500	13.8	200	149	300	100	212
SGAK	189	50	1,200	25,000	13.8	200	149	300	100	212
SGAL	284	75	1,200	25,000	13.8	200	149	300	100	212
SGK	284	75	780	25,000	13.8	200	149	300	100	212
SGKK	379	100	780	25,000	13.8	200	149	300	100	212
SGL	511	135	640	25,000	13.8	200	149	300	100	212
SGLQ	511	135	640	25,000	13.8	200	149	300	100	212
SGLL	530	140	520	2,500	13.8	200	149	300	100	212

NOTE: To ensure proper selection of a specific pump model, always use the performance data provided in the Engineering, Operations & Maintenance manuals.

SPECIALTY CODES

[1]Special order option. May require additional lead times.
[2]Standard temperature ratings on seals and packing. For higher temperatures consult factory.
[3]Available on SGAL and SGAK models ONLY.

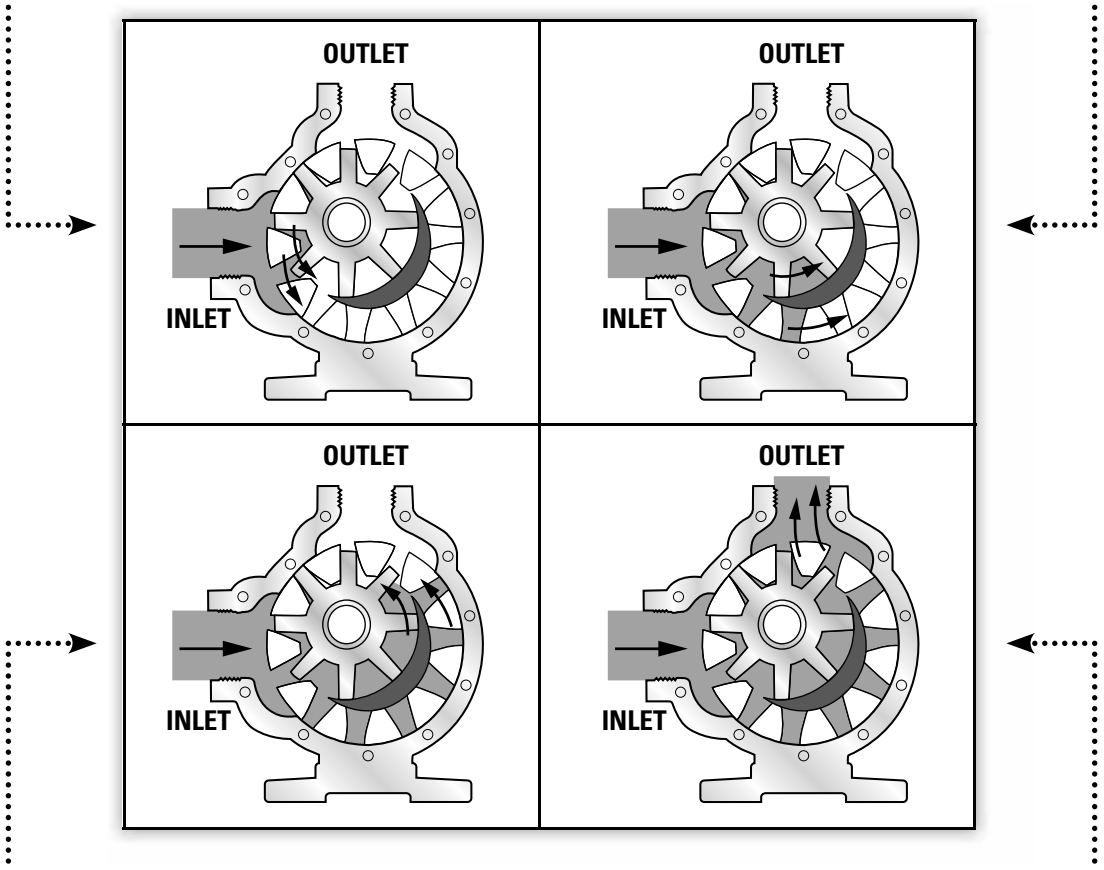
NOTE: **BOLD** items above are typically stocked materials.

HOW IT WORKS

The Spectrom™ gear pump is a rotating, positive displacement pump. These drawings show the flow pattern through the pump upon its initial rotation. It is assumed that the pump has no fluid in it prior to it's initial rotation.

1 The shaded area indicates the liquid as it is drawn into the liquid inlet port of the pump. As the rotor turns atmospheric pressure forces the liquid between the rotor teeth and idler teeth. The two arrows indicate the rotational direction of the pump.

2 As the rotor continues to turn, the liquid is forced through the crescent shaped area of the wetted path. The crescent shaped area divides the liquid and acts as a barrier between the inlet and discharge ports.

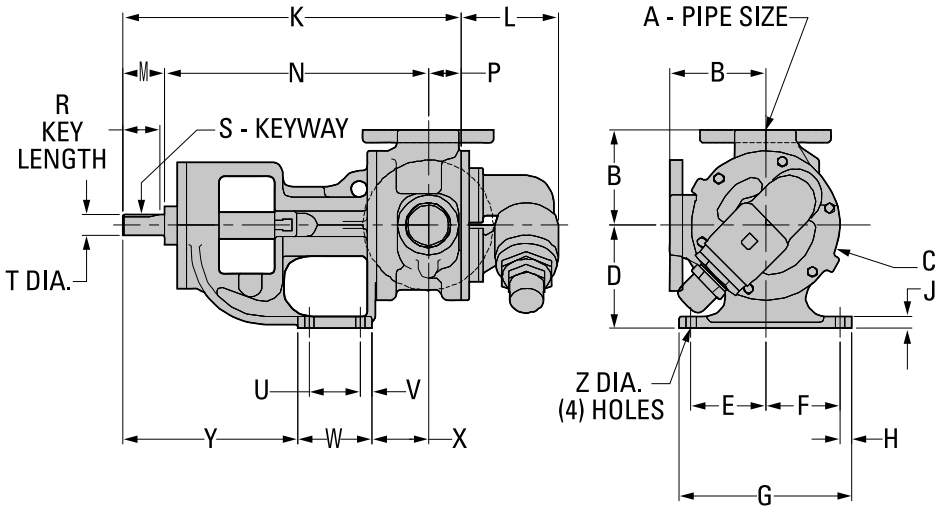


3 As the rotor continues to turn, the liquid is forced past the crescent shaped area and moves towards the discharge port.

4 As the rotor completes one complete rotation, the rotor and idler teeth interlock forcing the liquid through the discharge of the pump. The pump may take several rotations to completely prime depending on the conditions of the application.

SPECTROM™ AFTERMARKET PUMP PARTS

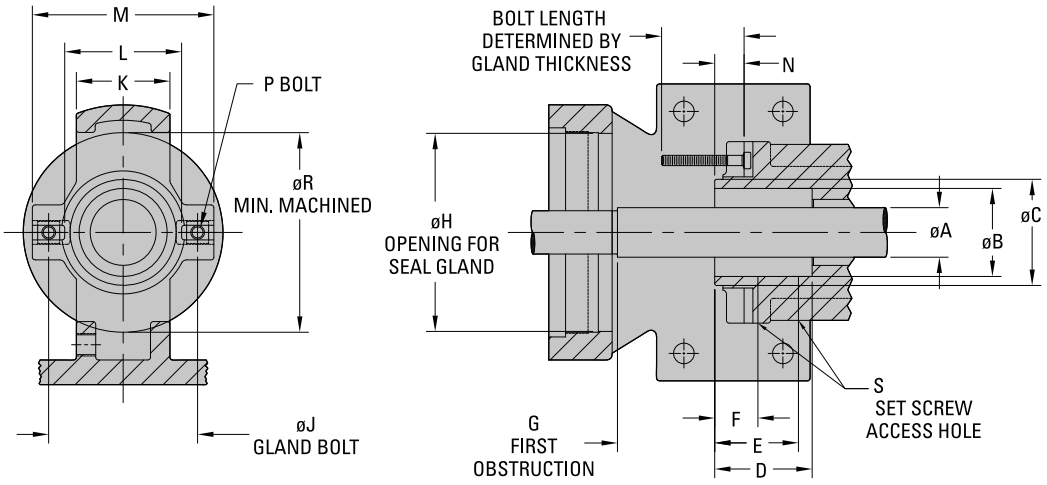
DIMENSIONAL DRAWING



Model													
Packed	**Mechanical** (stuffing box seal)	**A IN**	**B MM (IN)**	**C MM (IN)**	**D MM (IN)**	**E MM (IN)**	**F MM (IN)**	**G MM (IN)**	**H MM (IN)**	**J MM (IN)**	**K MM (IN)**	**L MM (IN)**	**M MM (IN)**
SGH 124A	SGH 4124A	1-1/2" NPT	76 (3.00)	121 (4.75)	89 (3.50)	70 (2.75)	70 (2.75)	171 (6.75)	16 (0.63)	14 (0.56)	337 (13.25)	72 (2.85)	41 (1.62)
SGHL 124A	SGHL 4124A												
SGK 124A	SGK 4124A	2" NPT	130 (5.12)	203 (8.00)	140 (5.50)	102 (4.00)	102 (4.00)	235 (9.25)	16 (0.63)	16 (0.62)	460 (18.12)	133 (5.25)	57 (2.25)
SGKK 124A	SGKK 4124A												

Model												
Packed	**Mechanical** (stuffing box seal)	**N MM (IN)**	**P MM (IN)**	**R MM (IN)**	**S MM (IN)**	**T MM (IN)**	**U MM (IN)**	**V MM (IN)**	**W MM (IN)**	**X MM (IN)**	**Y MM (IN)**	**Z MM (IN) DIA.**
SGH 124A	SGH 4124A	265 (10.44)	30 (1.19)	25 (0.99)	5X5 (0.188 X 0.188)	19 (0.75)	57 (2.25)	16 (0.62)	89 (3.50)	86 (3.38)	132 (5.19)	12 (0.47)
SGHL 124A	SGHL 4124A											
SGK 124A	SGK 4124A	359 (14.12)	44 (1.75)	36 (4.42)	6X3 (0.250 X 0.125)	28 (1.12)	70 (2.75)	16 (0.62)	102 (4.00)	76 (3.00)	238 (9.38)	13 (0.53)
SGKK 124A	SGKK 4124A											

STUFFING BOX DRAWING



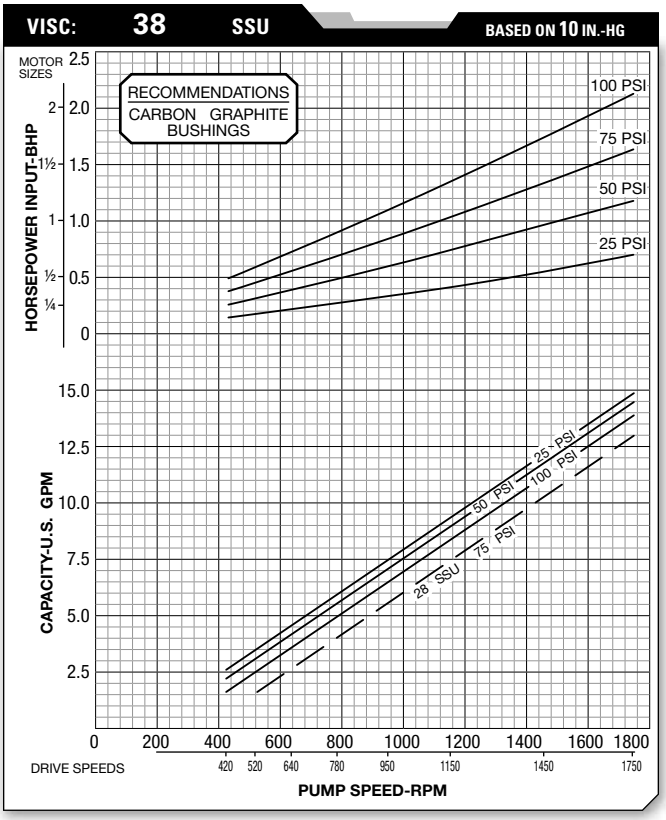
Model													
Packed	**Mechanical** (stuffing box seal)	**A** MM (IN) DIA.	**B** MM (IN) DIA.	**C** MM (IN) DIA.	**D** MM (IN)	**E** MM (IN)	**F** MM (IN)	**G** MM (IN)	**H** MM (IN) DIA.	**J** MM (IN) DIA.	**K** MM (IN)	**L** MM (IN)	**M** MM (IN)
SGH 124A	SGH 4124A	28 (1.12)	51 (2.00)	61 (2.41)	56 (2.22)	48 (1.90)	26 (1.03)	58 (2.27)	114 (4.50)	76 TO 89 (3.00 TO 3.50)	51 (2.00)	64 (2.50)	102 (4.00)
SGHL 124A	SGHL 4124A												
SGK 124A	SGK 4124A	37 (1.44)	59 (2.31)	76 (3.00)	80 (3.13)	57 (2.25)	32 (1.25)	76 (3.00)	133 (5.25)	89 TO 114 (3.50 TO 4.50)	64 (2.50)	76 (3.00)	127 (5.00)
SGKK 124A	SGKK 4124A												

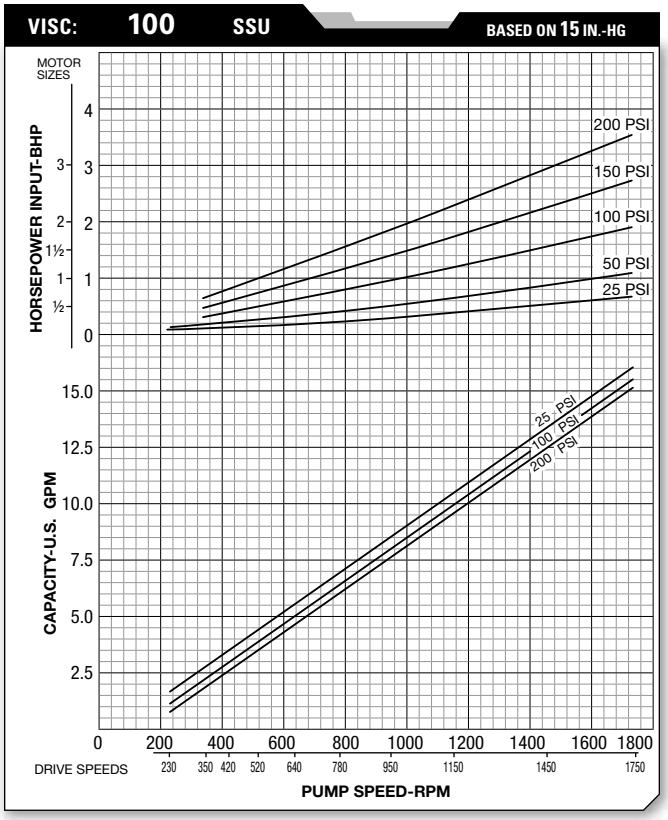
Model					
Packed	**Mechanical** (stuffing box seal)	**N** MM (IN)	**P** MM (IN)	**R** MM (IN) DIA.	**S** MM (IN)
SGH 124A	SGH 4124A	17 (0.66)	8 (0.313)	114 (4.47)	3 (0.125)
SGHL 124A	SGHL 4124A				
SGK 124A	SGK 4124A	10 (0.38)	11 (0.438)	133 (5.25)	6 (0.250)
SGKK 124A	SGKK 4124A				

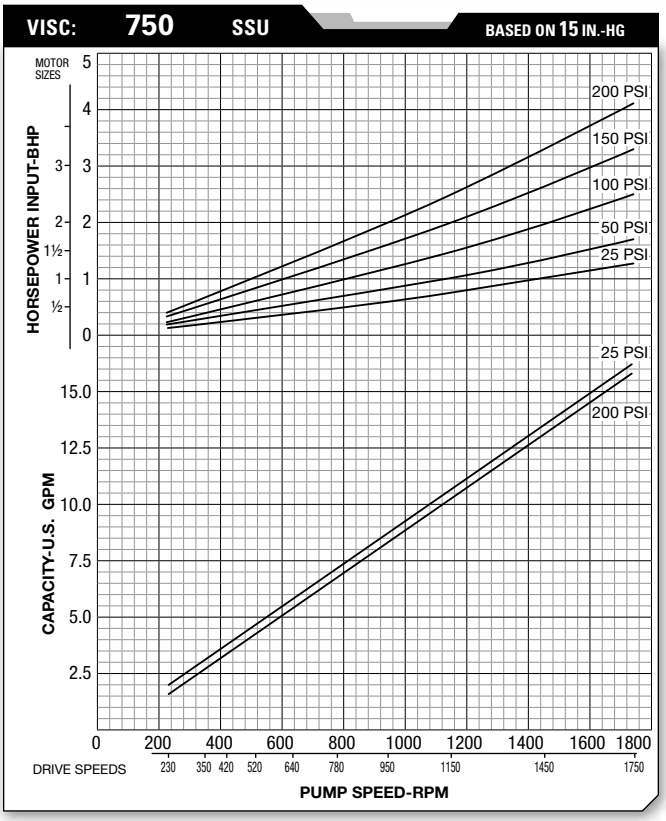
SPECTROM™ AFTERMARKET PUMP PARTS

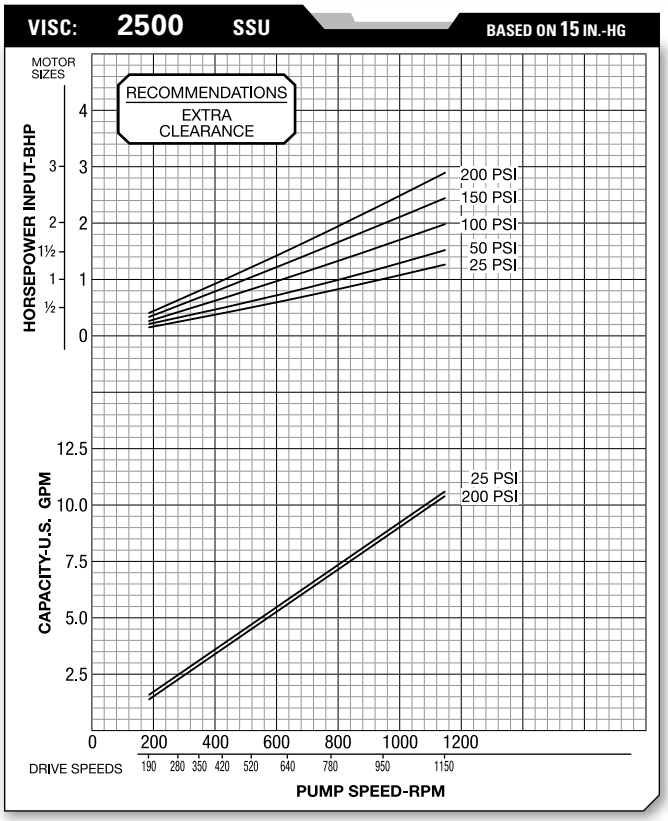
PERFORMANCE — FLOW

SGH

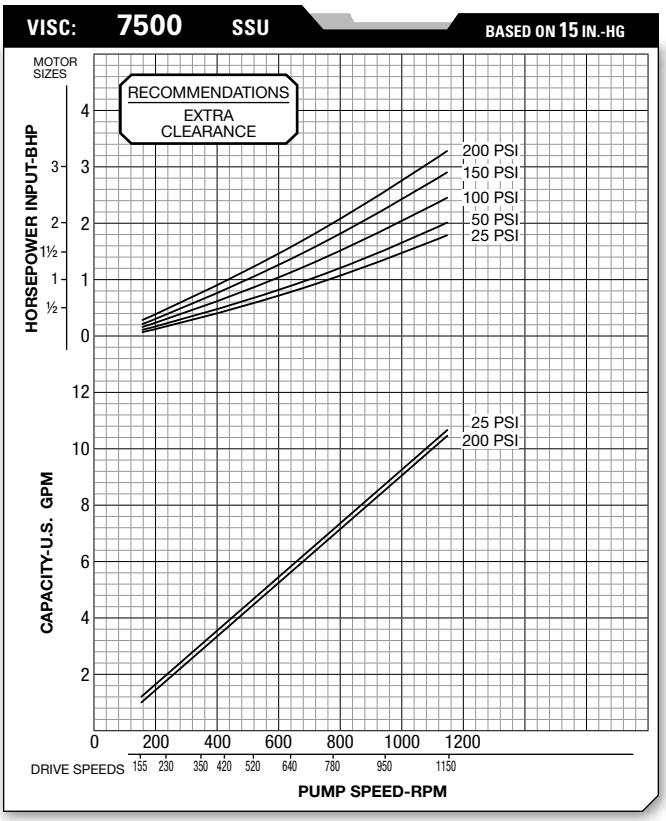


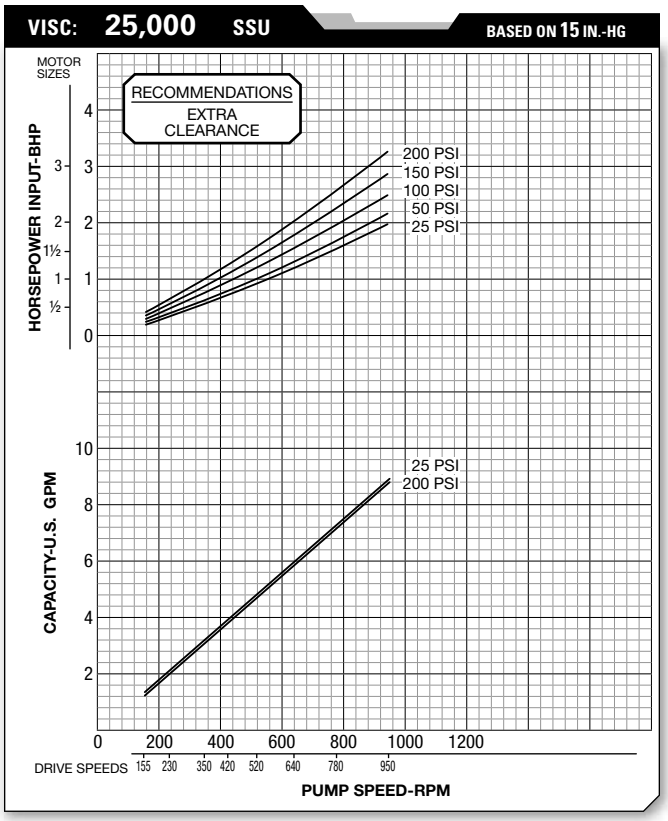






SGH


VISC: 7500 SSU
BASED ON 15 IN.-HG
MOTOR SIZES
RECOMMENDATIONS
EXTRA CLEARANCE
HORSEPOWER INPUT-BHP
200 PSI
150 PSI
100 PSI
50 PSI
25 PSI
CAPACITY-U.S. GPM
25 PSI
200 PSI
DRIVE SPEEDS 155 230 350 420 520 640 780 950 1150
PUMP SPEED-RPM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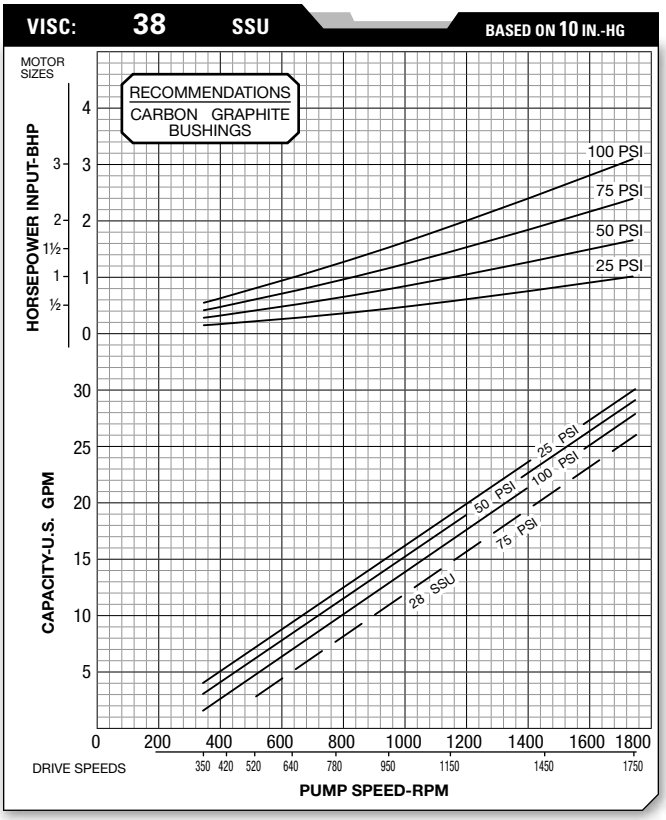
BASED ON 15 IN.-HG
MOTOR SIZES
RECOMMENDATIONS
EXTRA CLEARANCE
HORSEPOWER INPUT-BHP
200 PSI
150 PSI
100 PSI
50 PSI
25 PSI
CAPACITY-U.S. GPM
25 PSI
200 PSI
DRIVE SPEEDS 155 230 350 420 520 640 780 950
PUMP SPEED-RPM

SGHL


VISC: 38 SSU
BASED ON 10 IN.-HG
MOTOR SIZES
RECOMMENDATIONS
CARBON GRAPHITE BUSHINGS
HORSEPOWER INPUT-BHP
100 PSI
75 PSI
50 PSI
25 PSI
CAPACITY-U.S. GPM
25 PSI
100 PSI
50 PSI
75 PSI
28 SSU
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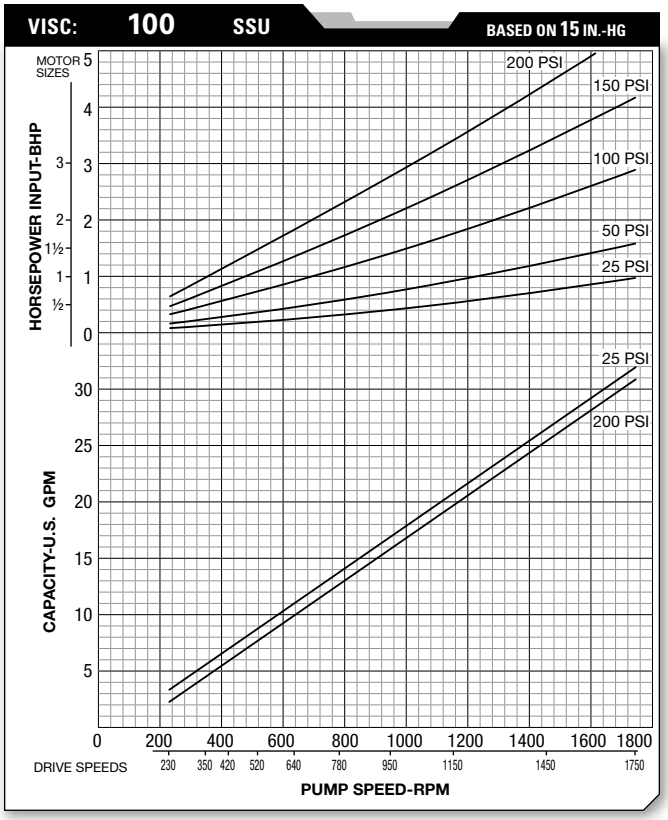
DRIVE SPEEDS
350 420 520 640 780 950 1150 1450 1750
PUMP SPEED-RPM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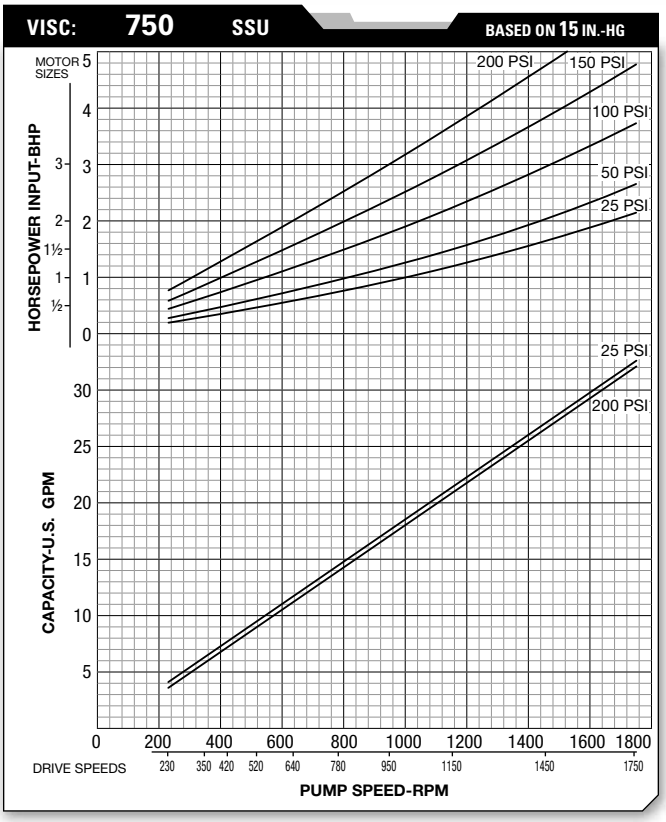
BASED ON 15 IN.-HG
MOTOR SIZES
HORSEPOWER INPUT-BHP
200 PSI
150 PSI
100 PSI
50 PSI
25 PSI
CAPACITY-U.S. GPM
25 PSI
200 PSI
0 200 400 600 800 1000 1200 1400 1600 1800
DRIVE SPEEDS
230 350 420 520 640 780 950 1150 1450 1750
PUMP SPEED-RPM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MOTOR SIZES
HORSEPOWER INPUT-BHP
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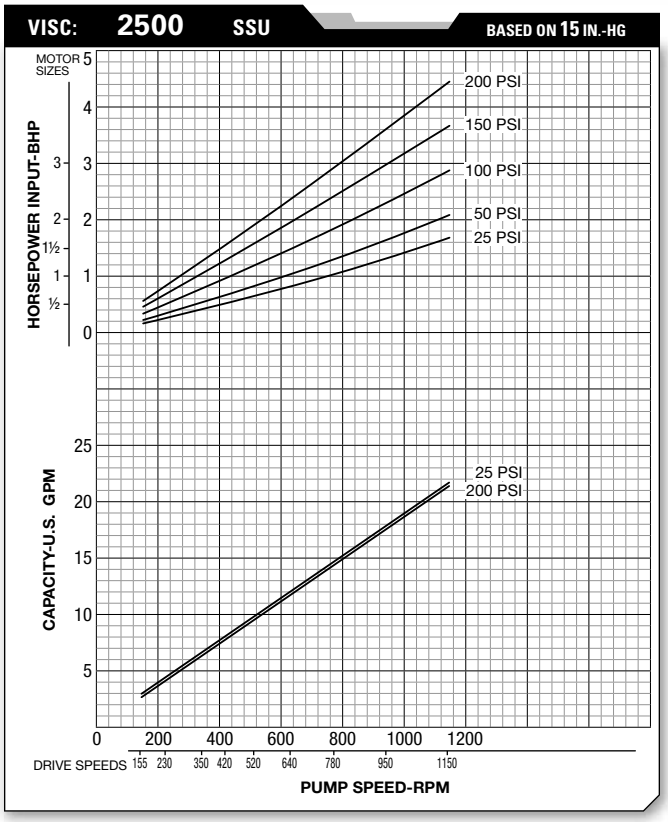
150 PSI
100 PSI
50 PSI
25 PSI
CAPACITY-U.S. GPM
25 PSI
200 PSI
0 200 400 600 800 1000 1200 1400 1600 1800
DRIVE SPEEDS
230 350 420 520 640 780 950 1150 1450 1750
PUMP SPEED-RPM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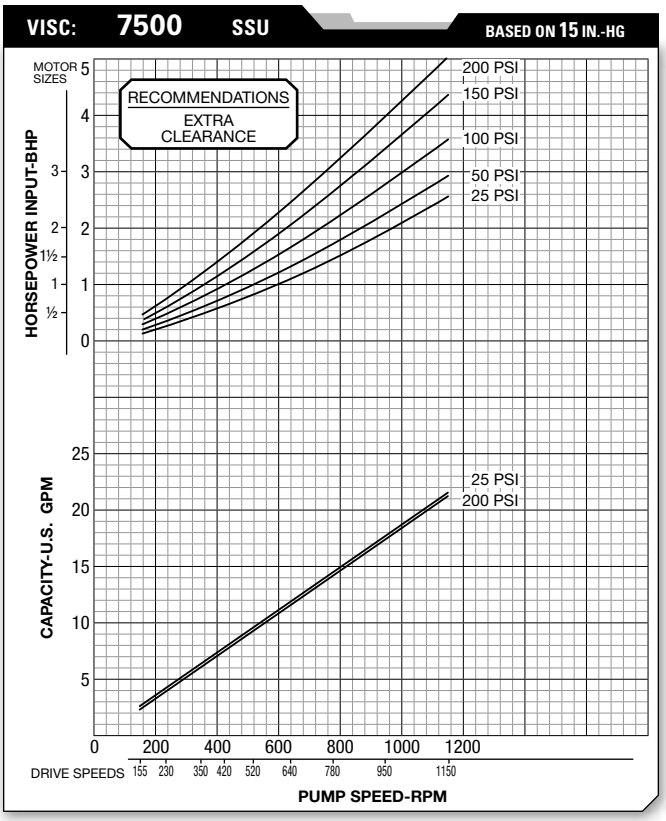
BASED ON 15 IN.-HG
MOTOR SIZES
HORSEPOWER INPUT-BHP
200 PSI
150 PSI
100 PSI
50 PSI
25 PSI
CAPACITY-U.S. GPM
25 PSI
200 PSI
0 200 400 600 800 1000 1200
DRIVE SPEEDS
155 230 350 420 520 640 780 950 1150
PUMP SPEED-RPM

SGHL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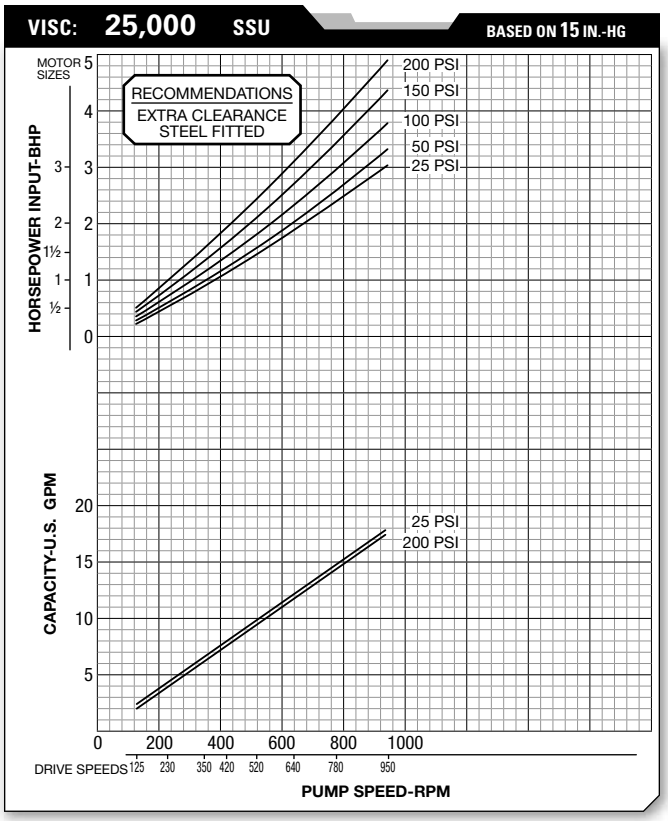
MOTOR SIZES
RECOMMENDATIONS
EXTRA CLEARANCE
HORSEPOWER INPUT-BHP
200 PSI
150 PSI
100 PSI
50 PSI
25 PSI
CAPACITY-U.S. GPM
25 PSI
200 PSI
DRIVE SPEEDS 155 230 350 420 520 640 780 950 1150
PUMP SPEED-RPM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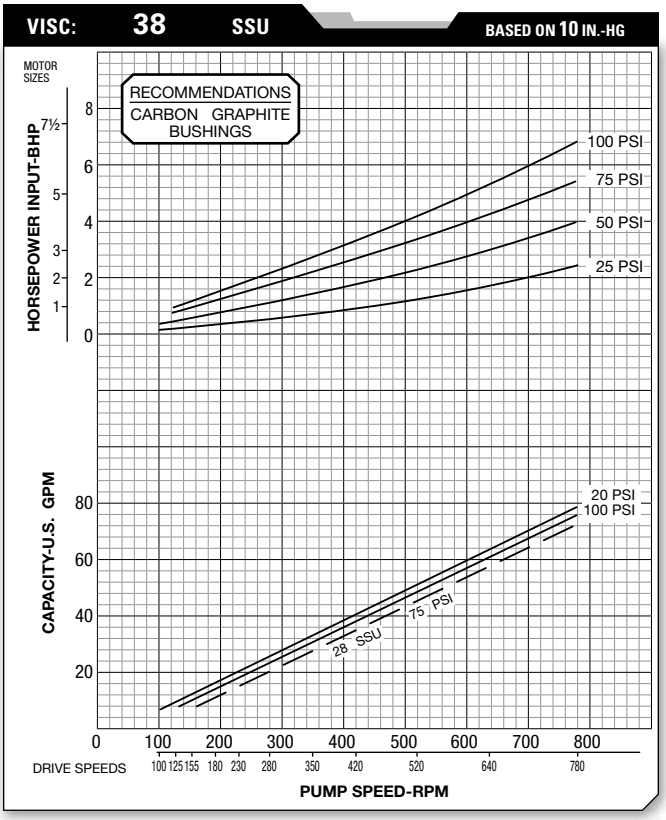
BASED ON 15 IN.-HG
MOTOR SIZES
RECOMMENDATIONS
EXTRA CLEARANCE
STEEL FITTED
HORSEPOWER INPUT-BHP
200 PSI
150 PSI
100 PSI
50 PSI
25 PSI
CAPACITY-U.S. GPM
25 PSI
200 PSI
DRIVE SPEEDS 125 230 350 420 520 640 780 950
PUMP SPEED-RPM

SGK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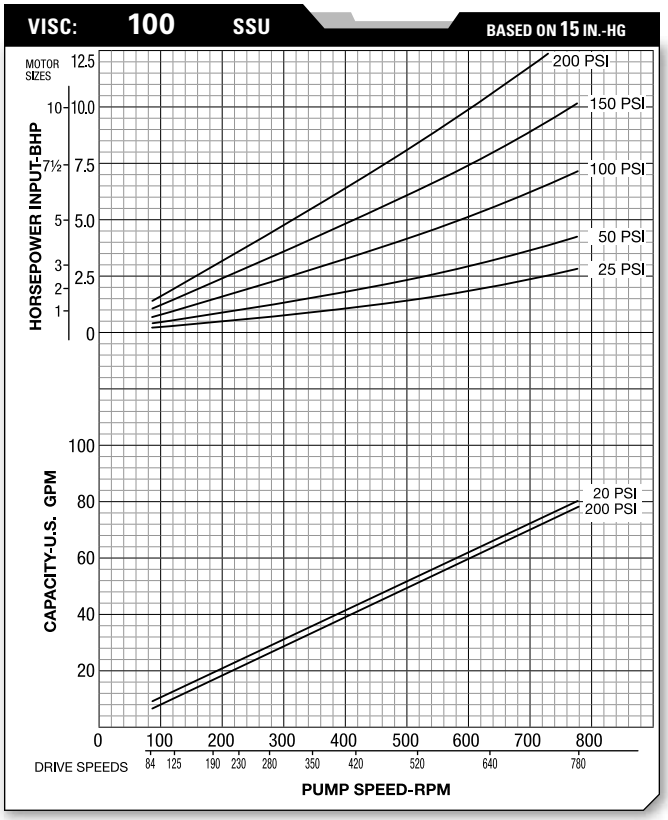
BASED ON 10 IN.-HG
MOTOR SIZES
RECOMMENDATIONS
CARBON GRAPHITE
BUSHINGS
HORSEPOWER INPUT-BHP
7½
100 PSI
75 PSI
50 PSI
25 PSI
CAPACITY-U.S. GPM
20 PSI
100 PSI
75 PSI
28 SSU
0 100 200 300 400 500 600 700 800
DRIVE SPEEDS
100 125 155 180 230 280 350 420 520 640 780
PUMP SPEED-RPM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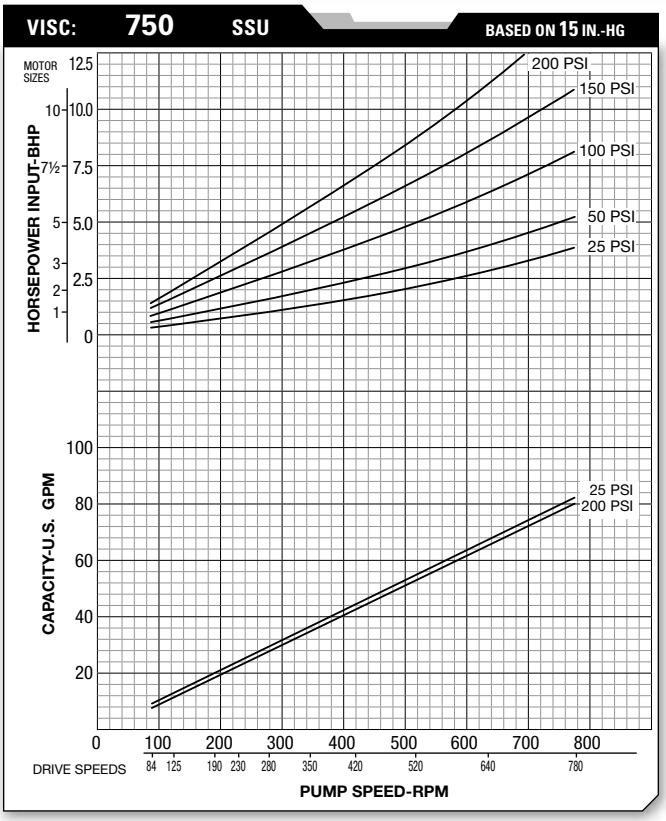
MOTOR SIZES
HORSEPOWER INPUT-BHP
7½
200 PSI
150 PSI
100 PSI
50 PSI
25 PSI
CAPACITY-U.S. GPM
20 PSI
200 PSI
0 100 200 300 400 500 600 700 800
DRIVE SPEEDS
84 125 190 230 280 350 420 520 640 780
PUMP SPEED-RPM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BASED ON 15 IN.-HG
MOTOR SIZES
HORSEPOWER INPUT-BHP
7½
200 PSI
150 PSI
100 PSI
50 PSI
25 PSI
CAPACITY-U.S. GPM
25 PSI
200 PSI
0 100 200 300 400 500 600 700 800
DRIVE SPEEDS
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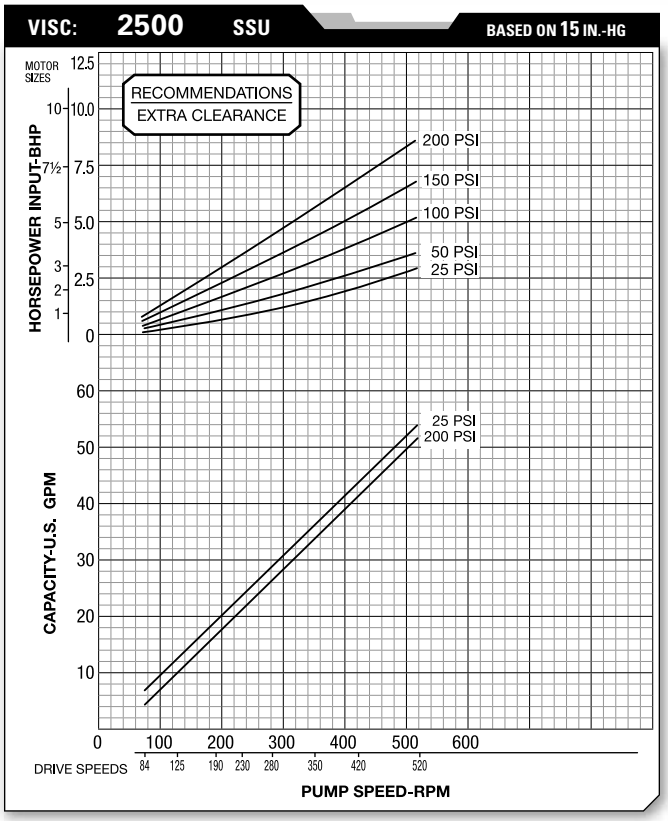
PUMP SPEED-RPM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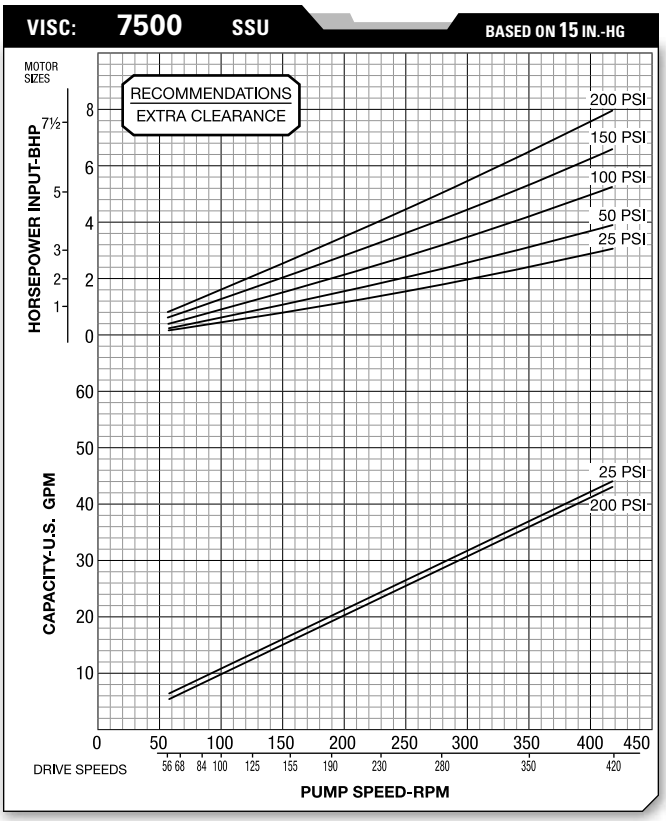
BASED ON 15 IN.-HG
MOTOR SIZES
RECOMMENDATIONS
EXTRA CLEARANCE
HORSEPOWER INPUT-BHP
7½
200 PSI
150 PSI
100 PSI
50 PSI
25 PSI
CAPACITY-U.S. GPM
25 PSI
200 PSI
0 100 200 300 400 500 600
DRIVE SPEEDS
84 125 190 230 280 350 420 520
PUMP SPEED-RPM

SGK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MOTOR SIZES
RECOMMENDATIONS
EXTRA CLEARANCE
HORSEPOWER INPUT-BHP
7½
200 PSI
150 PSI
100 PSI
50 PSI
25 PSI
CAPACITY-U.S. GPM
25 PSI
200 PSI
DRIVE SPEEDS
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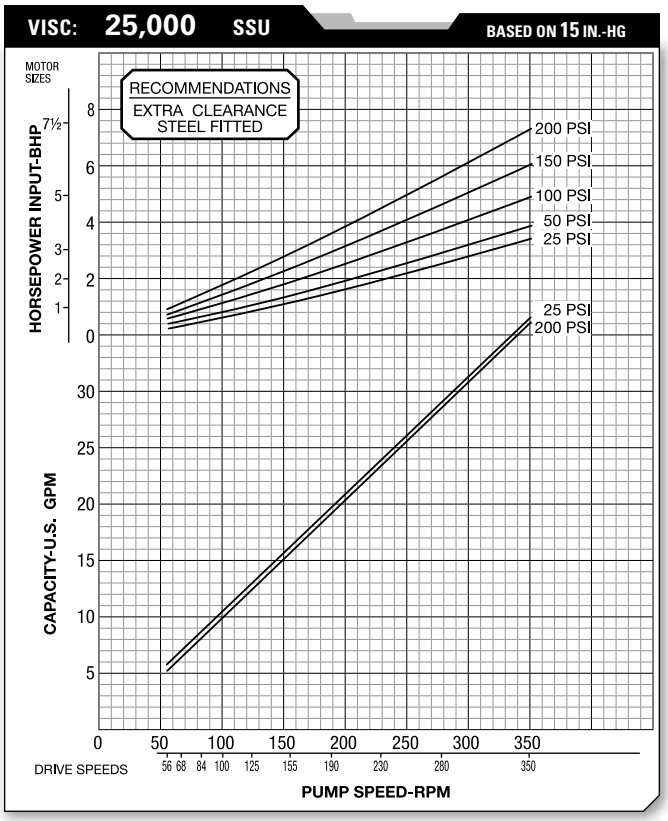
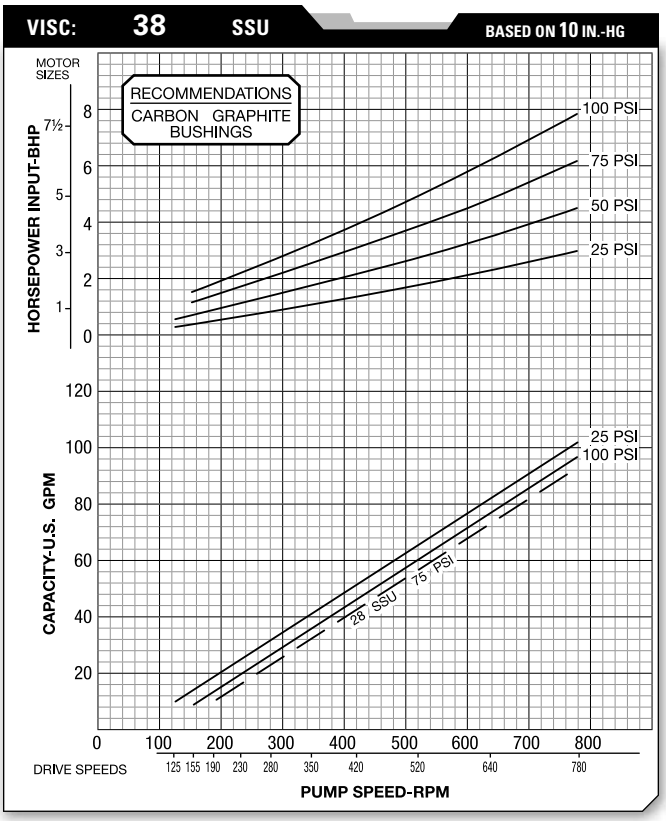
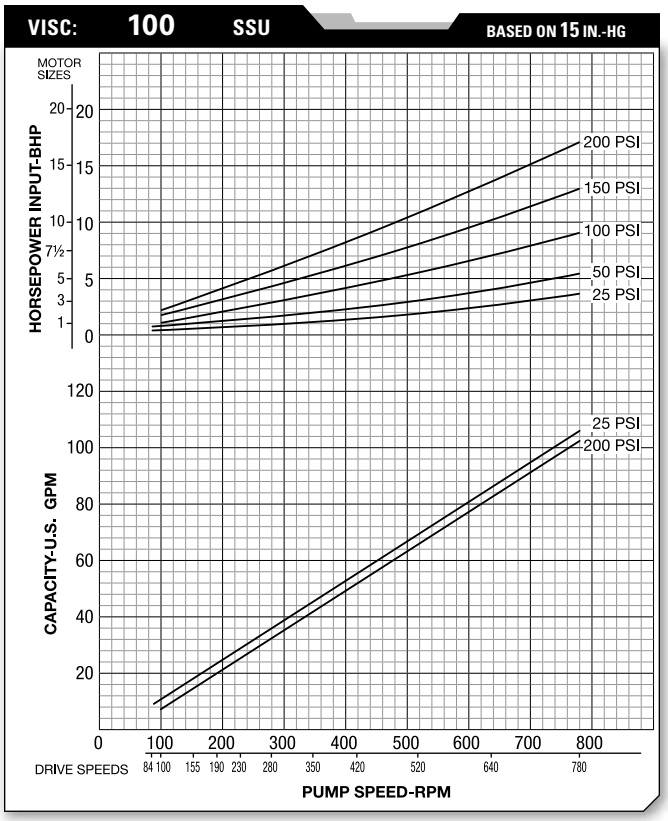
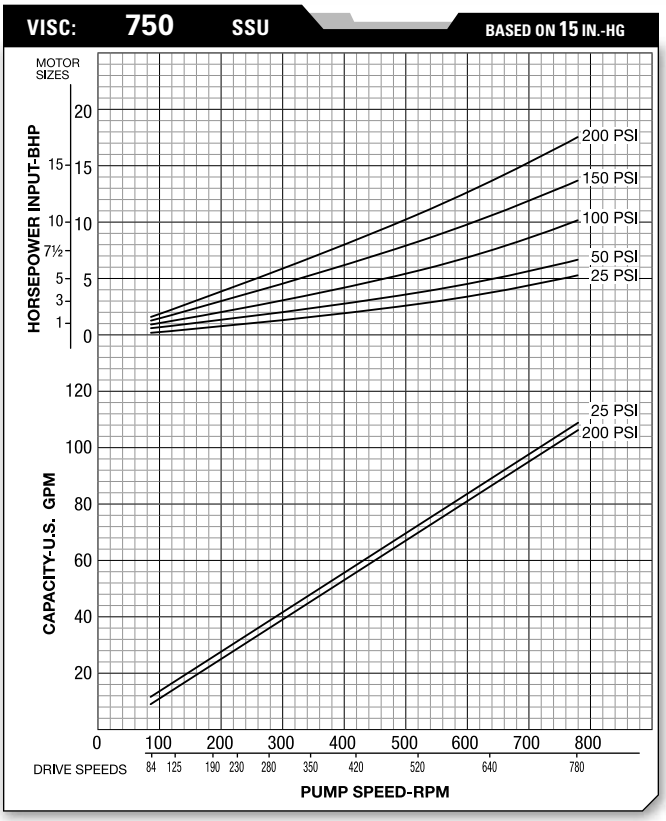
PUMP SPEED-RPM

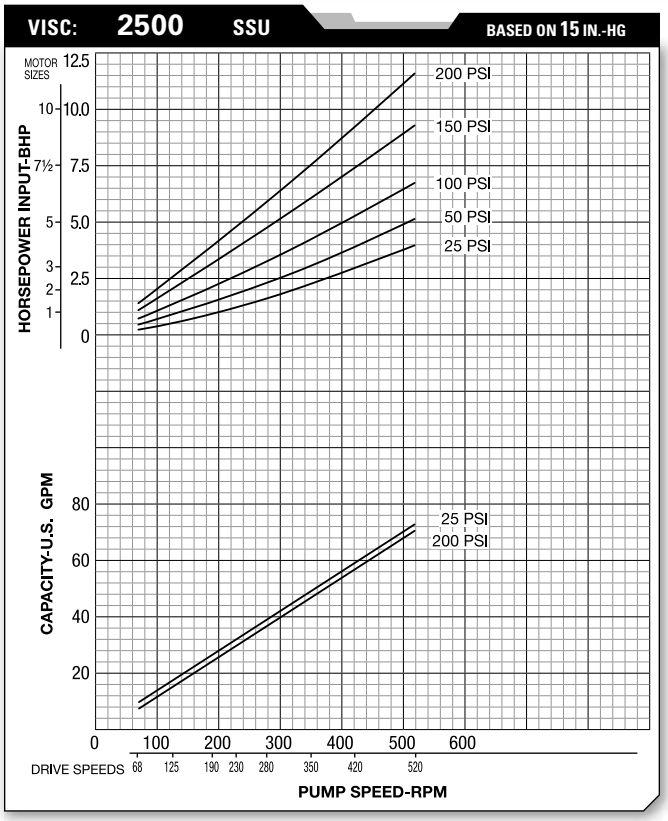

VISC: 25,000 SSU
BASED ON 15 IN.-HG
MOTOR SIZES
RECOMMENDATIONS
EXTRA CLEARANCE
STEEL FITTED
HORSEPOWER INPUT-BHP
7½
200 PSI
150 PSI
100 PSI
50 PSI
25 PSI
CAPACITY-U.S. GPM
25 PSI
200 PSI
DRIVE SPEEDS
56 68 84 100 125 155 190 230 280 350
PUMP SPEED-RPM

SGKK

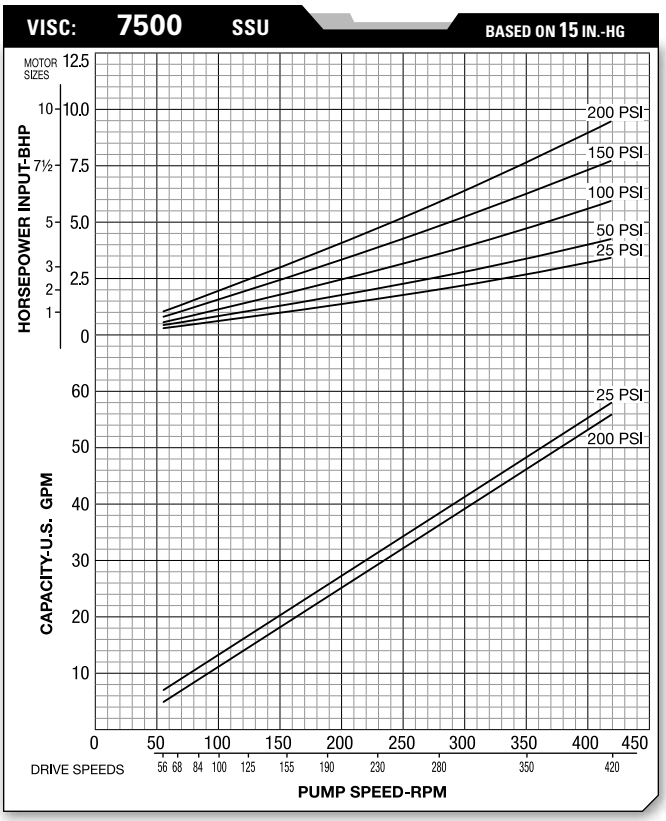

VISC: 38 SSU
BASED ON 10 IN.-HG
MOTOR SIZES
RECOMMENDATIONS
CARBON GRAPHITE BUSHINGS
HORSEPOWER INPUT-BHP
100 PSI
75 PSI
50 PSI
25 PSI
CAPACITY-U.S. GPM
25 PSI
100 PSI
28" SSU
75 PSI
DRIVE SPEEDS
125 155 190 230 280 350 420 520 640 780
PUMP SPEED-RPM

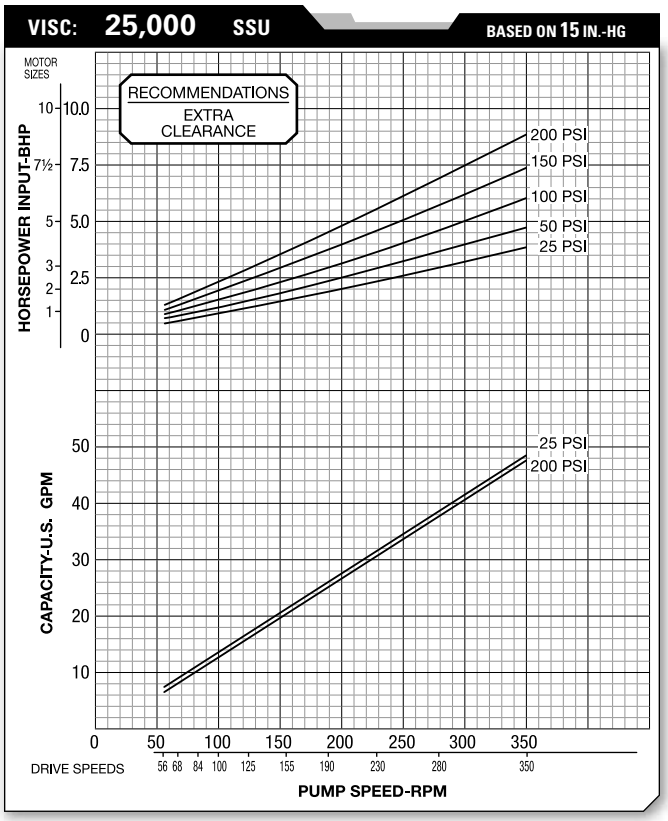

VISC: 100 SSU
BASED ON 15 IN.-HG
MOTOR SIZES
HORSEPOWER INPUT-BHP
200 PSI
150 PSI
100 PSI
50 PSI
25 PSI
CAPACITY-U.S. GPM
25 PSI
200 PSI
DRIVE SPEEDS
84 100 155 190 230 280 350 420 520 640 780
PUMP SPEED-RPM


VISC: 750 SSU
BASED ON 15 IN.-HG
MOTOR SIZES
HORSEPOWER INPUT-BHP
200 PSI
150 PSI
100 PSI
50 PSI
25 PSI
CAPACITY-U.S. GPM
25 PSI
200 PSI
DRIVE SPEEDS
84 125 190 230 280 350 420 520 640 780
PUMP SPEED-RPM


VISC: 2500 SSU
BASED ON 15 IN.-HG
MOTOR SIZES
HORSEPOWER INPUT-BHP
200 PSI
150 PSI
100 PSI
50 PSI
25 PSI
CAPACITY-U.S. GPM
25 PSI
200 PSI
DRIVE SPEEDS
68 125 190 230 280 350 420 520
PUMP SPEED-RPM

SGKK


VISC: 7500 SSU
BASED ON 15 IN.-HG
MOTOR SIZES
HORSEPOWER INPUT-BHP
12.5
10
7½
5
3
2
1
10.0
7.5
5.0
2.5
0
200 PSI
150 PSI
100 PSI
50 PSI
25 PSI
CAPACITY-U.S. GPM
60
50
40
30
20
10
0
25 PSI
200 PSI
50 100 150 200 250 300 350 400 450
DRIVE SPEEDS
56 68 84 100 125 155 190 230 280 350 420
PUMP SPEED-RPM


VISC: 25,000 SSU
BASED ON 15 IN.-HG
MOTOR SIZES
RECOMMENDATIONS
EXTRA CLEARANCE
HORSEPOWER INPUT-BHP
10
7½
5
3
2
1
10.0
7.5
5.0
2.5
0
200 PSI
150 PSI
100 PSI
50 PSI
25 PSI
CAPACITY-U.S. GPM
50
40
30
20
10
0
25 PSI
200 PSI
50 100 150 200 250 300 350
DRIVE SPEEDS
56 68 84 100 125 155 190 230 280 350
PUMP SPEED-RPM

PERFORMANCE — SPECIFICATIONS

38 SSU	H	HL	K	KK	L, LQ	LL
FLOW (GPM)	13.5	28.0	75.0	96.0	133.0	135.0
PRESSURE (PSIG)	100	100	100	100	100	100
SPEED (RPM)	1750	1750	780	780	640	520
FLOW (M3/HR)	3.1	6.4	17.0	22.0	30.0	31.0
PRESSURE (BAR)	7	7	7	7	7	7

100 SSU	H	HL	K	KK	L, LQ	LL
FLOW (GPM)	15.0	31.0	77.0	102.0	141.0	143.0
PRESSURE (PSIG)	200	200	200	200	200	200
SPEED (RPM)	1750	1750	780	780	640	520
FLOW (M3/HR)	3.4	7.0	17.5	23.0	32.0	32.0
PRESSURE (BAR)	14	14	14	14	14	14

750 SSU	H	HL	K	KK	L, LQ	LL
FLOW (GPM)	17	32	79	105	146	149
PRESSURE (PSIG)	200	200	200	200	200	200
SPEED (RPM)	1750	1750	780	780	640	520
FLOW (M3/HR)	3.9	7.3	17.9	24.0	33.0	34.0
PRESSURE (BAR)	14	14	14	14	14	14

2,500 SSU	H	HL	K	KK	L, LQ	LL
FLOW (GPM)	10.5	21.5	51.0	69.0	115.0	146.0
PRESSURE (PSIG)	200	200	200	200	200	200
SPEED (RPM)	1150	1150	520	520	520	520
FLOW (M3/HR)	2.4	4.9	11.6	15.7	26.0	33.0
PRESSURE (BAR)	14	14	14	14	14	14

7,500 SSU	H	HL	K	KK	L, LQ	LL
FLOW (GPM)	10.5	21.2	43.0	56.0	95.0	119.0
PRESSURE (PSIG)	200	200	200	200	200	200
SPEED (RPM)	1150	1150	420	420	420	420
FLOW (M3/HR)	2.4	4.8	9.8	12.7	22.0	27.0
PRESSURE (BAR)	14	14	14	14	14	14

25,000 SSU	H	HL	K	KK	L, LQ	LL
FLOW (GPM)	8.8	17.0	36.0	48.0	82.0	100.0
PRESSURE (PSIG)	200	200	200	200	200	200
SPEED (RPM)	950	950	350	350	350	350
FLOW (M3/HR)	2.0	3.9	8.2	10.9	18.6	23.0
PRESSURE (BAR)	14	14	14	14	14	14

75,000 SSU	H	HL	K	KK	L, LQ	LL
FLOW (GPM)	7.2	11.5	23.2	31.0	53.0	67.0
PRESSURE (PSIG)	200	200	200	200	200	200
SPEED (RPM)	780	640	230	230	230	230
FLOW (M3/HR)	1.6	2.6	5.3	7.0	12.0	15.2
PRESSURE (BAR)	14	14	14	14	14	14

250,000 SSU	H	HL	K	KK	L, LQ	LL
FLOW (GPM)	4.1	CONSULT FACTORY	16.0	21.0	35.0	45.0
PRESSURE (PSIG)	200		200	200	200	200
SPEED (RPM)	420		155	155	155	155
FLOW (M3/HR)	0.9		3.6	4.8	7.9	10.2
PRESSURE (BAR)	14		14	14	14	14

PERFORMANCE — DISPLACEMENT

For metering applications, it can be useful to know the displacement per revolution to calculate at different operating speeds. That information is provided in the table below. For critical metering, actual displacement should be determined through calibration under normal operating conditions. To aid in determining the pump size for unlabbeled spare rotors or idlers, or to determine the size of the pump whose nameplate is missing, the approximate dimensions of the rotor and idler are also provided in the table below.

Pump Model	Theoretical* Displacement per Revolution		Theoretical* Displacement per 100 Revolutions		Approximate Size of Elements					
					Rotor O.D.		Idler O.D.		Tooth Length	
	Liters	Gallons	Liters	Gallons	MM	Inches	MM	Inches	MM	Inches
H	0.036	0.009	3.590	0.949	3 3/8	3 3/8	85.7	2 5/8	15.9	5/8
HL	0.072	0.019	7.184	1.898	3 3/8	3 3/8	85.7	2 5/8	31.7	1 1/4
AK	0.194	0.051	19.447	5.138	4 5/8	4 5/8	117.5	3 3/8	38.1	1 1/4
AL	0.256	0.069	25.988	6.866	4 5/8	4 5/8	117.5	3 3/8	50.8	2
K	0.399	0.106	39.932	10.550	6 3/16	6 3/16	157.0	4 1/2	38.1	1 1/2
KK	0.533	0.141	53.255	14.070	6 3/16	6 3/16	157.0	4 1/2	50.8	2
L	0.898	0.237	89.818	23.730	8 1/4	8 1/4	209.5	6	50.8	2
LQ	0.898	0.237	89.818	23.730	8 1/4	8 1/4	209.5	6	50.8	2
LL	1.123	0.297	112.263	29.660	8 1/4	8 1/4	209.5	6	63.5	2 1/2

*Actual capacity may be less due to internal clearances in the pump.
Variations in fluid viscosity and discharge pressure may also affect capacity.

NOTE: The H, HL, K, KK, L, LQ and LL models are 124A/ 4124A series. The AK and AL models are 125 / 4125 series.

SUGGESTED INSTALLATION

Spectrom™ Gear pumps are designed to meet the performance requirements of even the most demanding pumping applications. They have been designed and manufactured to the highest standards and are available in a number of different sizes to meet your pumping needs. Refer to the performance section of this manual for an in-depth analysis of the performance characteristics of your pump.

INSTALLATION: Months of careful planning, study, and selection efforts can result in unsatisfactory pump performance if installation details are left to chance.

Premature failure and long term dissatisfaction can be avoided if reasonable care is exercised throughout the installation process.

LOCATION: Noise, safety, and other logistical factors usually dictate where equipment will be situated on the production floor. Multiple installations with conflicting requirements can result in congestion of utility areas, leaving few choices for additional pumps.

Within the framework of these and other existing conditions, every pump should be located in such a way that key factors are balanced against each other to maximum advantage.

ACCESS: First of all, the location should be accessible. If it's easy to reach the pump, maintenance personnel will have an easier time carrying out routine inspections and adjustments. Should major repairs become necessary, ease of access can play a key role in speeding the repair process and reducing total downtime.

PIPING: Final determination of the pump site should not be made until the piping challenges of each possible location have been evaluated. The impact of current and future installations should be considered ahead of time to make sure that inadvertent restrictions are not created for any remaining sites.

The best choice possible will be a site involving the shortest and straightest hook-up of suction and discharge piping. Unnecessary elbows, bends, and fittings should be avoided. Pipe sizes should be selected to keep friction losses within practical limits.

All piping should be supported independently of the pump. In addition, the piping should be aligned to avoid placing stress on the pump fittings. To eliminate possible closing of the line when performing pump maintenance, a gate valve should be installed at the suction line.

Spectrom™ Gear pumps are positive displacement pumps; as such, care must be used in protecting piping and components used in your system. Pumps equipped with an internal relief valve are designed to protect the pump only. We highly suggest the use of a system relief valve in conjunction with the pumps internal relief valve.

When placing the pump, choose a location as close to the product source as possible. Care should be taken in your supply line to avoid cavitation due to viscosity and suction lift. NOTE: Some liquids may become thicker with temperature changes. Please refer to your supplier of product being pumped for information on viscosity changes due to temperature. Avoid air pockets on suction side of pump when designing piping layout. This will also reduce the possibility of cavitation. The weight of the piping should not be supported or absorbed by the pump. Suction and discharge piping should be supported by pipe hangers or another suitable means.

To mount the pump, we suggest the use of a solid, level steel base, grouted and secured to a concrete floor, sufficient enough to absorb any strain or hydraulic shock that may occur during operation.

Assure pump, gear box, motor couplings and shafts are properly aligned. NOTE: Alignment may shift during shipment of product. Due to this, realignment will most likely be required once the pump is mounted in the pre-selected location. We suggest a qualified technician address all alignment tasks to ensure proper installation.

SPECTROM™ GEAR PUMPS ARE NOT SUITED FOR PUMPING DIRTY, SOLID LADEN, ABRASIVE LIQUIDS. A strainer should be used on the suction side of the pump. The strainer should consist of an adequate size mess screen as to not cause excessive friction loss. It is suggested that a maintenance program is adhered to assure that the inlet strainer remain free of obstructions and blockage.

Pump runs but no product flows.

1. Net positive suction head available (NPSHa) is lower than required for the vapor pressure of the liquid pumped. You should calculate NPSHa and redesign piping, if necessary.
2. Leaks in suction line or port passage. These can be detected by submerging pressure line from discharge side of pump.
3. Direction of shaft rotation is incorrect.
4. Relief valve setting is too low. Liquid is discharging through the by-pass port.

Pump runs but little product flows.

1. Air leaks in suction line.
2. Suction losses are too great. The suction lift is too great or the suction line is too small or too long. This can be detected by installing a cvacuum gauge directly at the pump suction. The maximum vacuum at the pump suction should never exceed 15" mercury. Vaporization caused by higher vacuums will generally result in a reduction of capacity.
3. Pump speed is too slow.
4. Suction piping strainer is too small or obstructed.
5. Suction pipe or port not immersed deep enough in liquid.
6. Piping improperly installed, permitting air pockets to form in the pump.
7. Increased clearances or wear in the pump can the pump to deliver an insufficient supply of liquid. This may be corrected by reducing the thickness of the cover gaskets. A folded gasket or a slight amount of dirt can exaggerate the problem and cause leakage.

Too much power draw.

1. Pressure is too high.
2. Liquid more viscous than originally expected.
3. Suction or discharge lines obstructed or restricted.
4. Lack of horsepower.
5. Insufficient end clearance, pump is binding.
6. Misalignment of drive shaft and pump.
7. Pump shaft is bent.

Erratic pump operation

1. Leaking suction lines.
2. Inconsistent suction conditions.
3. Pump cavitation due to air or vapor in liquid.

Pump is leaking.

1. Retighten all fasteners.

NOTE: Packed gear pumps are designed to leak slightly to prevent excessive heat build up. Normally a few drops per minute is acceptable. CAUTION: When pumping hazardous liquids, a mechanical gear pump is suggested to minimize any potential source of leakage that could result in hazardous condition.

Pump is excessively noisy.

1. Pump cavitation.
2. Coupling is misaligned.
3. Coupling too close to pump.
4. Worn or bent shaft causing pump vibration.
5. Air leaks on suction line.

NOTES

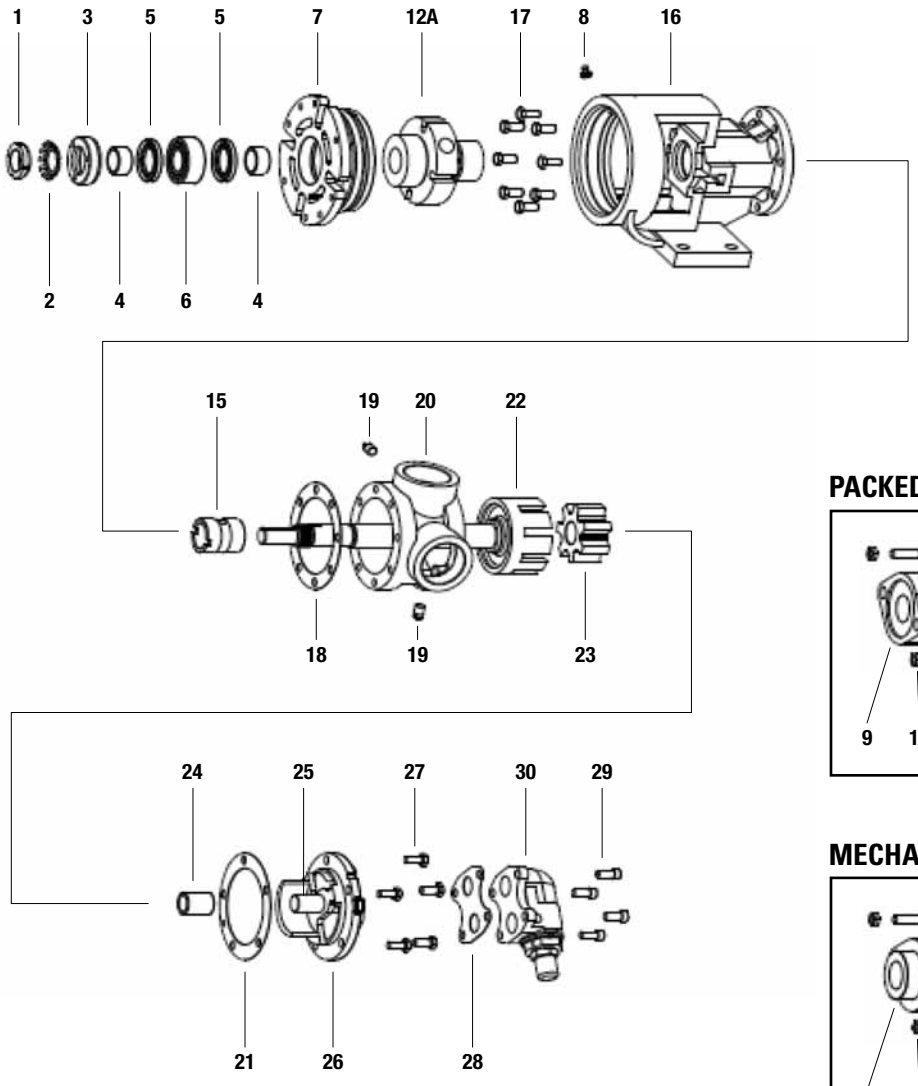
END CLEARANCE ADJUSTMENT

The table below shows the end clearance dimensions to adjust the gap between the rotor/idler and head of your Spectrom™ Gear pump. Which end clearance dimensions you use depends on the temperature and viscosity of the fluid being pumped.

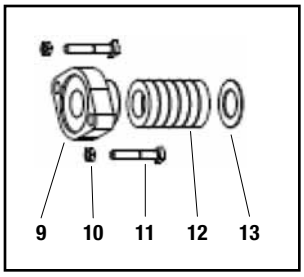
See below for details. Note: A zero clearance condition is where the rotor/idler is coming in contact with the head, resulting in bind that could damage pump internals. Never operate a Spectrom™ Gear pump with zero clearance.

PUMP TYPE	SEAL TYPE	VISCOSITY	TEMP	C.I. ROTOR		IDLER		OTHER BSG		END
		SSU	°F	O.D. / I.D. (INCH)	X	O.D. / I.D. (INCH)	X		X	CLEARANCE
SGH, SGHL	124A, 4124A	Thru 2,500	Thru 225	----/----	--	0.005/0.002	42	----	--	----
		----------	226-450	----/----	--	0.005/0.002	42	----	--	0.004
		----------	451-575	0.002/0.005	24	0.005/0.002	42	----	--	0.006
		2,501-25,000	576-650	0.005/0.005	34	0.005/0.002	42	0.002	02	0.008
		25,001-2,000,000				0.005/0.002	42	0.002	02	0.008
SGAK, SGAL	125, 4125	Thru 2,500	Thru 225	0.002/0.005	24	0.008/0.004	54	----	--	0.002
		----------	226-300	0.002/0.005	24	0.008/0.004	54	----	--	0.005
		2,501-25,000	301-450	0.005/0.005	34	0.008/0.004	54	0.002	02	0.007
		25,001-2,000,000	451-650	0.010/0.005	44	0.008/0.004	54	0.002	02	0.010
SGK, SGKK	124A, 4124A	Thru 750	Thru 225	0.010/0.015	47	0.008/0.004	54	----	--	----
		751-7,500	226-450	0.010/0.015	47	0.008/0.004	54	0.002	02	0.005
		7,501-75,000	451-650	0.010/0.015	47	0.008/0.004	54	0.002	02	0.010
		----------	651-800	0.015/0.015	57	0.008/0.004	54	0.004	04	0.015
		75,001-2,000,000	----------	----/----		0.008/0.004	54	0.004	04	0.015
SGL, SGLQ, SGLL	124A, 4124A	Thru 750	Thru 225	----/----	--	0.008/0.004	54	----	--	----
		----------	226-300	----/----	--	0.008/0.004	54	----	--	0.003
		751-7,500	301-450	0.005/0.015	37	0.008/0.004	54	0.002	02	0.005
		7,501-75,000	451-575	0.010/0.015	47	0.008/0.004	54	0.002	02	0.008
		----------	576-650	0.015/0.015	57	0.008/0.004	54	0.004	04	0.012
		75,001-2,000,000	----------	----/----		0.008/0.004	54	0.004	04	0.015

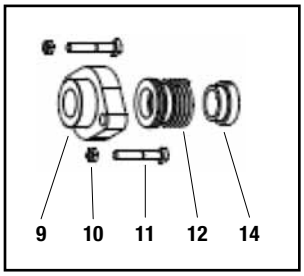
SGH & SGHL | PACKED & MECHANICAL | EXPLODED VIEW



PACKED



MECHANICAL SEAL



12A

SGH & SGHL

PACKED & MECHANICAL PARTS LISTING

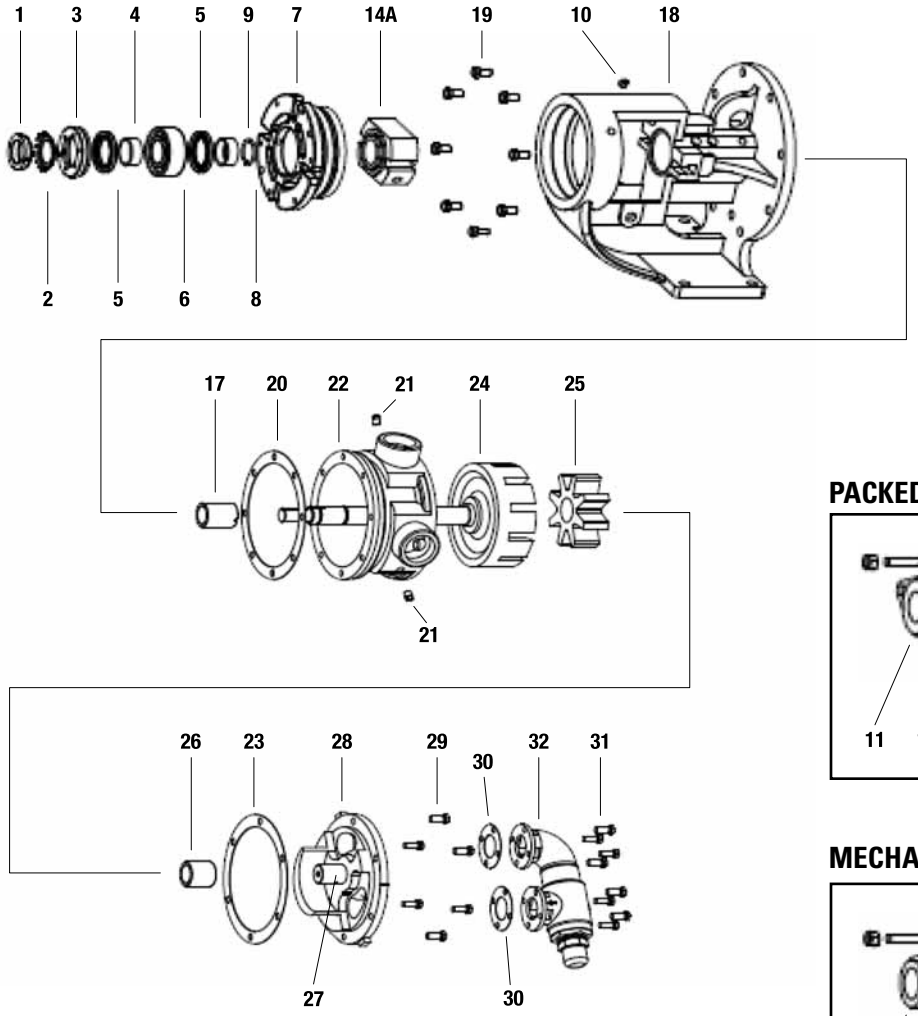
Item No.	Description	Qty.	SGH P/N	SGHL P/N	MATERIAL
1	Locknut, #N-05	1	S250700337500	S250700337500	Steel
2	Lockwasher, #W-05	1	S280700337500	S280700337500	Steel
3	End Cap for Bearing Housing	1	S214000172200	S214000172200	Cast Iron
4	Bearing Spacer Collar	2	S228800321D00	S228800321D00	Steel
5	Lip Seal	2	S228300737800	S228300737800	Buna-N
6	Ball Bearing	1	S205501237500	S205501237500	Steel
7	Bearing Housing	1	S206002972200	S206002972200	Cast Iron
8	Grease Fitting (Straight)	2	S246900237600	S246900237600	Cased Brass Steel
9	Packing/Mechanical Seal Gland	1	S252404515000	S252404515000	Cast Iron
10	Packing/Seal Gland Nut Self Locking	2	S250500437500	S250500437500	Steel
11	Packing/Seal Gland Capscrew	2	S206600537500	S206600537500	Steel
	Packing/Seal Gland Capscrew (For Cartridge Seal)	2	S206601337500	S206601337500	Steel
12	Packing	5	S252006783000	S252006783000	Standard
12A	Component Mechanical Seal (Complete)[3]	1	S247600199900	S247600199900	Buna-N
	Component Mechanical Seal (Complete)[3]	1	S247601299900	S247601299900	Viton®
13	Packing Retaining Washer	1	S280510261000	S280510261000	Steel
14	Mechanical Seal Collar	1	S348707746500	S348707746500	Steel
15	Bracket Bushing	1	S210901245400	S210901245400	Bronze
	Bracket Bushing	1	S210900388000	S210900388000	Carbon Graphite
16	Bracket and Bushing	1	S307528805200	S307528805200	Cast Iron/Bronze
	Bracket and Bushing	1	S307528708000	S307528708000	Cast Iron/Carbon
17	Capscrew for Bracket	8	S215000425500	S215000425500	Steel - Grade 2
18	Bracket Gasket	1	S231300180615	S231300180615	Vellumoid
19	Pipe Plug	4	S254200137600	S254200137600	Brass
20	Casing	1	S219480110000	S219480110000	Cast Iron
21	Head Gasket	1	S230900180615	S230900180615	Vellumoid
22	Rotor and Shaft	1	S356615601200	S356655601200	Cast Iron & Steel
23	Idler and Bushing Assembly	1	S341800109942	S341840009942	Cast Iron/Bronze
	Idler and Bushing Assembly	1	S341800210542	S341840310542	Cast Iron/Carbon
24	Idler Bushing	1	S209501345402	S209500145402	Bronze
	Idler Bushing	1	S209501088002	S209501188002	Carbon Graphite
25	Idler Pin, Plain	1	S243300329100	S243300329100	Steel 4140T
26	Head (Plain) and Plain Idler Pin Assembly	1	S337000108800	N/A	Cast Iron/Steel 4140T
	Head (Valve Type) and Plain Idler Pin Assembly	1	S337100108800	S337140008800	Cast Iron/Steel 4140T
27	Capscrew For Plain or Valve Type Head	5	S215000425500	S215000425500	Steel - Grade 2
28	Relief Valve Gasket	1	S231600380630	S231600380630	Vellumoid
29	Socket Head Capscrew For Valve	4	S215303625500	S215303625500	Steel - Grade 2
30	Internal Relief Valve (Complete)	1	S379524000000	S379524000000	Cast Iron
Not Shown	Cartridge Seal Washers[1]	2	S280510461000	S280510461000	Steel
Not Shown	Suckback Line Assembly for Component Seal 19[1]	1	S346301299900	S346301299900	Steel
Kit (includes 1-7)	Bearing Housing Assembly (Complete)	1	S306007099900	S306007099900	Cast Iron
	Bearing Housing Set Screw[1, 2]	2	S259600437500	S259600437500	Steel
	Insert, Used with End Cap Set Screw[1, 2]	2	S249000890200	S249000890200	Nylon
	End Cap Set Screw[1, 2]	1	S259602837500	S259602837500	Steel

[1]Not shown
[2]Included in Bearing Housing Assembly Kit.
[3]Buna-N and Viton® Mechanical Seal requires item 14 Mechanical Seal Collar.

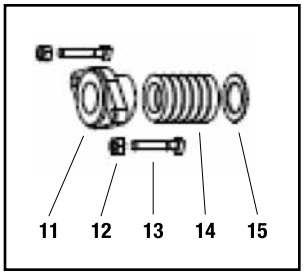
When order parts, be sure to give PART NO., NAME OF PART, MATERIAL, MODEL & SERIAL NO. of pump as it appears on nameplate

NOTE: Pump comes pre-lubed from the factory with Roshfrans B.A.T.-3® NGLI 3 grease.

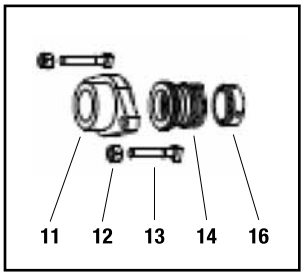
SGK & SGKK | PACKED & MECHANICAL | EXPLODED VIEW



PACKED



MECHANICAL SEAL



14A

SGK & SGKK

PACKED & MECHANICAL PARTS LISTING

Item No.	Description	Qty.	SGK P/N	SGKK P/N	MATERIAL
1	Locknut, #N-07	1	S250700537500	S250700537500	Steel
2	Lockwasher, #W-07	1	S280700537500	S280700537500	Steel
3	End Cap for Bearing Housing	1	S214000272200	S214000272200	Cast Iron
4	Bearing Spacer Collar (Outer)	1	S228800621D00	S228800621D00	Steel
5	Lip Seal	2	S228301437800	S228301437800	Buna-N
6	Ball Bearing	1	S205502137500	S205502137500	Steel
7	Bearing Housing	1	S206002672200	S206002672200	Cast Iron
8	Bearing Spacer Collar (Inner)	1	S228804021D00	S228804021D00	Steel
9	Ring, Half Round	2	S255700437000	S255700437000	Steel
10	Grease Fitting (Straight)	2	S246900237600	S246900237600	Cased Brass Steel
11	Packing/Mechanical Seal Gland	1	S252404215000	S252404215000	Cast Iron
12	Packing/Seal Gland Nut Self Locking	2	S250500837500	S250500837500	Steel
13	Packing/Seal Gland Capscrew	2	S215400837500	S215400837500	Steel
14	Packing	6	S252006683000	S252006683000	Standard
14A	Mechanical Seal (Complete)[3]	1	S247700199900	S247700199900	Buna-N
	Mechanical Seal (Complete)[3]	1	S247703899900	S247703899900	Viton
15	Packing Retaining Washer	1	S280510361000	S280510361000	Steel
16	Mechanical Seal Collar	1	S328820743D00	S328820743D00	Steel
17	Bracket Bushing	1	S211603145400	S211603145400	Bronze
	Bracket Bushing	1	S211600688000	S211600688000	Carbon Graphite
18	Bracket and Bushing	1	S307739205200	S307739205200	Cast Iron/Bronze
	Bracket and Bushing	1	S307739008000	S307739008000	Cast Iron/Carbon Graphite
19	Capscrew for Bracket	8	S215004725500	S215004725500	Steel - Grade 2
20	Bracket Gasket	1	S231300380615	S231300380615	Vellumoid
21	Pipe Plug	5	S254200437600	S254200437600	Brass
22	Casing	1	S221480910000	S221480910000	Cast Iron
23	Head Gasket	1	S231100380615	S231100380615	Vellumoid
24	Rotor and Key on End	1	S357035201200	S357055231237	Cast Iron & Steel
25	Idler and Bushing Assembly	1	S342020905254	S342040605254	Cast Iron/Bronze
	Idler and Bushing Assembly	1	S342020108054	S342040108054	Cast Iron/Carbon Graphite
26	Idler Bushing	1	S210800745404	S210800945404	Bronze
	Idler Bushing	1	S210801488004	S210801588004	Carbon Graphite
27	Idler Pin, Lube	1	S243501129100	S243501229100	Steel 4140T
28	Head (Valve Type) and Lube Idler Pin Assembly	1	S338120008800	S338140008800	Cast Iron/Steel 4140T
29	Capscrew For Plain or Valve Type Head	6	S215002025500	S215002025500	Steel - Grade 2
30	Relief Valve Gasket	2	S230700880615	S230700880615	Vellumoid
31	Capscrew For Valve	8	S215001925500	S215001925500	Steel - Grade 2
32	Internal Relief Valve (Complete)	1	S379550600000	S379550600000	Cast Iron
33	Suckback Line Assembly for Component Seal 19[1]	1	S346310399900	S346310399900	Steel
	Bearing Housing Assembly (Complete)	1	S306006799900	S306006799900	Cast Iron
Kit	Bearing Housing Set Screw[1, 2]	2	S259600437500	S259600437500	Steel
(includes 1-11)	Insert, Used with End Cap Set Screw[1, 2]	2	S249000890200	S249000890200	Nylon
	End Cap Set Screw[1, 2]	1	S259604337500	S259604337500	Steel

[1]Not shown
[2]Included in Bearing Housing Assembly Kit.
[3]Buna-N and Viton® Mechanical Seal requires item 16 Mechanical Seal Collar.

When order parts, be sure to give PART NO., NAME OF PART, MATERIAL, MODEL & SERIAL NO. of pump as it appears on nameplate.

NOTE: Pump comes pre-lubed from the factory with Roshfrans B.A.T.-3® NGLI 3 grease.

NOTES

WARRANTY

Each and every product manufactured by Spectrom Aftermarket Pumps & Parts is built to meet the highest standards of quality. Every pump is functionally tested to insure integrity of operation.

Spectrom Aftermarket Pumps & Parts warrants that pumps, accessories and parts manufactured or supplied by it to be free from defects in material and workmanship for a period of three (3) years from date of installation or four (4) years from date of manufacture, whichever comes first. Failure due to normal wear, misapplication, or abuse is, of course, excluded from this warranty.

Since the use of Spectrom Aftermarket Pumps & Parts is beyond our control, we cannot guarantee the suitability of any pump or part for a particular application and Spectrom Aftermarket Pumps & Parts shall not be liable for any consequential damage or expense arising from the use or misuse of its products on any application. Responsibility is limited solely to replacement or repair of defective Spectrom Aftermarket Pumps & Parts.

All decisions as to the cause of failure are the sole determination of Spectrom Aftermarket Pumps & Parts.

Prior approval must be obtained from Spectrom Aftermarket Pumps & Parts for return of any items for warranty consideration and must be accompanied by the appropriate MSDS for the product(s) involved. A Return Goods Tag, obtained from an authorized Wilden or Spectrom Aftermarket Pumps & Parts distributor, must be included with the items which must be shipped freight prepaid.

The foregoing warranty is exclusive and in lieu of all other warranties expressed or implied (whether written or oral) including all implied warranties of merchantability and fitness for any particular purpose. No distributor or other person is authorized to assume any liability or obligation for Spectrom Aftermarket Pumps & Parts other than expressly provided herein.

PLEASE PRINT OR TYPE AND FAX TO SPECTROM

PUMP INFORMATION

Item # _____ Serial # _____

Company Where Purchased _____

YOUR INFORMATION

Company Name _____

Industry _____

Name _____ Title _____

Street Address _____

City _____ State _____ Postal Code _____ Country _____

Telephone _____ Fax _____ E-mail _____ Web Address _____

Number of pumps in facility? _____ Number of Spectrom pumps? _____

Types of pumps in facility (check all that apply): ☐ Diaphragm ☐ Centrifugal ☐ Gear ☐ Submersible ☐ Lobe

☐ Other _____

Media being pumped? _____

How did you hear of Spectrom? ☐ Trade Journal ☐ Trade Show ☐ Internet/E-mail ☐ Distributor

☐ Other _____

ONCE COMPLETE, FAX TO (909) 512-1275

NOTE: WARRANTY VOID IF PAGE IS NOT FAXED TO SPECTROM

SPECTROM AFTERMARKET PUMPS & PARTS