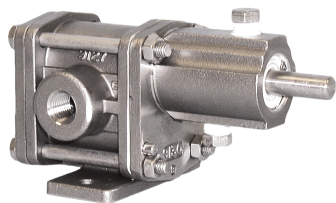


CHEMSTEEL™ PUMP

CHEMSTEEL PUMPS SERIES R106 M

PERFORMANCE



FEATURES

Gear/bearing design allows for “trimming” for optimizing the pump’s maximum flow to reach minimum turndown or to match flow to a specific OEM’s requirement.

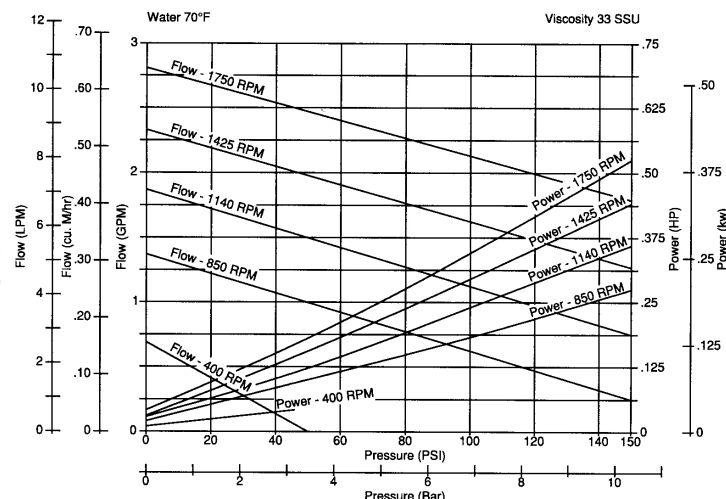
- Special materials combinations are available for specific liquids:
- Stainless or Alloy C housing construction.
- Gears available in 316 stainless and Alloy C. Also in Polytetrafluoroethylene (PTFE) and Polyetheretherketone.
- Shafts are 316 stainless steel or Alloy C.
- Bearings available in carbon or Polytetrafluoroethylene (PTFE).
- Full range of seal options including lip seal, packing and mechanical designs.

DRIVE

The pump is driven directly from the electric motor shaft by means of a flexible coupling. A close-coupled adapter connects the pump to the motor.

LIQUIDS AND TEMPERATURE

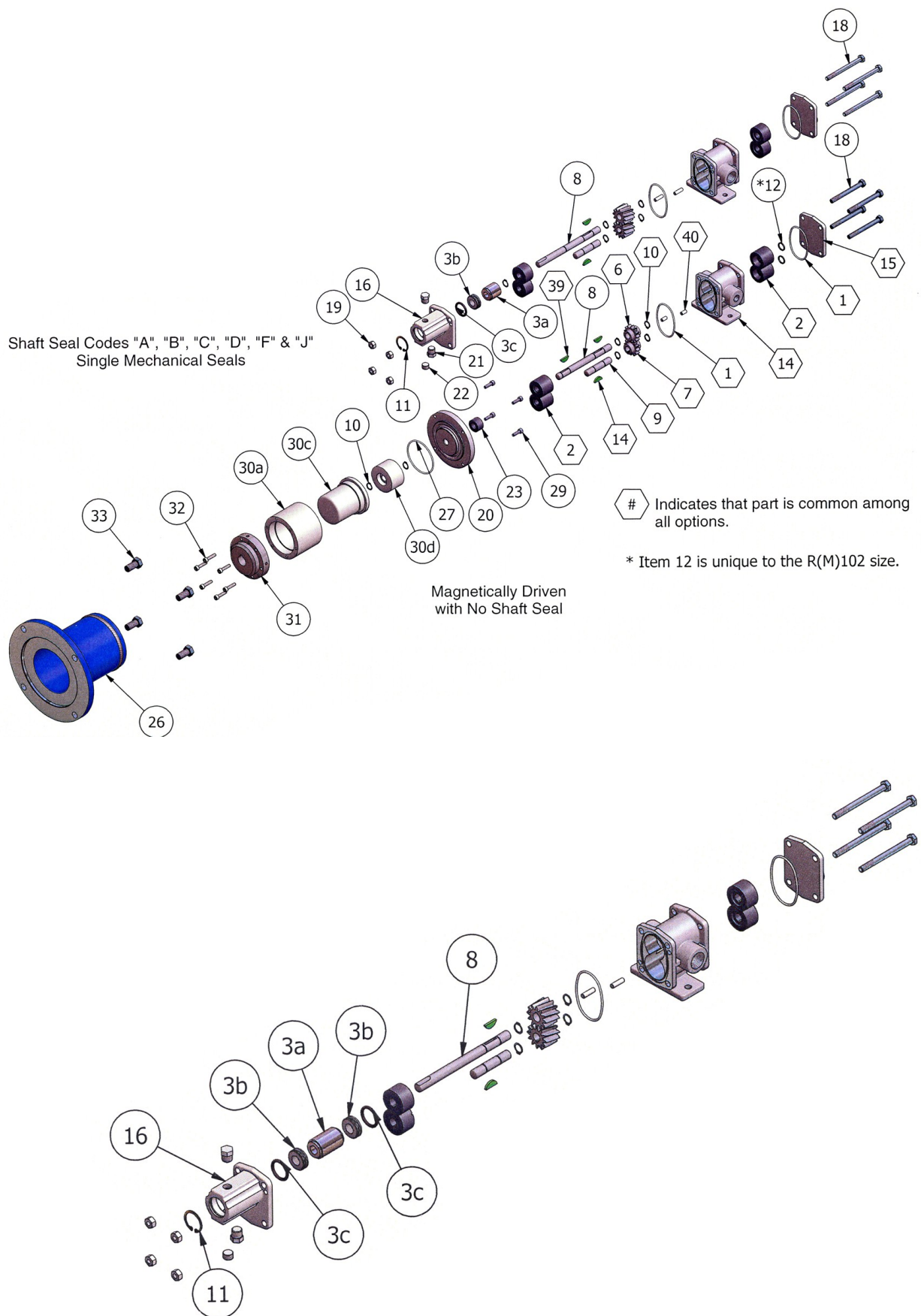
This pump is suitable to handle clear lubricating and non-lubricating fluids at temperatures to 450F. These pumps will handle viscous fluids to 100,000 cps (462,000 SSU) at reduced shaft speeds.



SUCTION LIFT

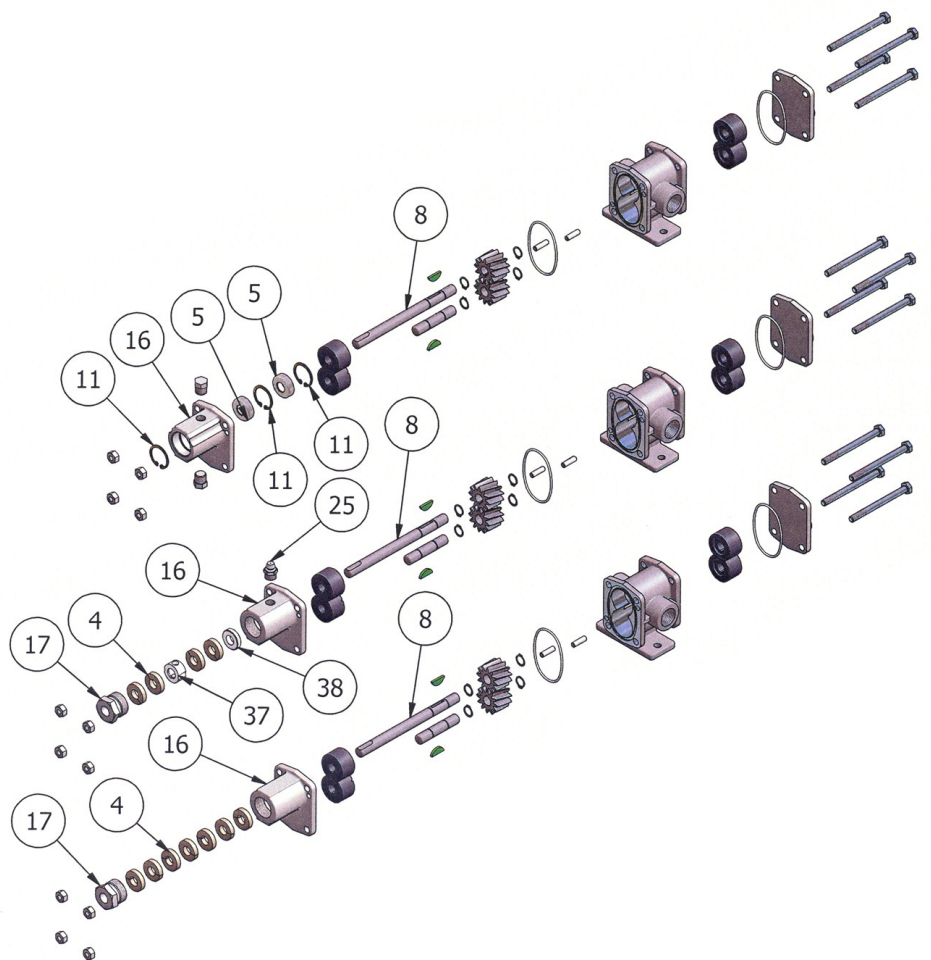
This pump has a suction lift capability of 20 feet for a new pump. Though gear pumps are self-priming, a foot valve is recommended. If possible, wet gears with the liquid to be pumped for the first dry start. Liquid retained in the system and gear chambers serves to wet the pump on subsequent starts.

EXPLODED VIEW AND PARTS LIST



Shaft Seal Codes "L"
Packing with Lante.

Shaft Seal Codes "N", "P" & "Q"
Packing



CHEMkit Parts

No.	Part No.	Part Name	Req.	GEAR CODE															
				1	2	3	4	5	6	7	8	9	A	B	C	E	F		
6	2368-01A	Drive Gear-Ryton PPS	1																
6	2365-01A	Drive Gear-316 SS	1																
6	2370-01A	Drive Gear-PEEK	1																
6	2366-01A	Drive Gear-Alloy C	1																
6	2367-01A	Drive Gear-W 88	1																
6	2369-01A	Drive Gear-Teflon	1																
7	2368-02A	Idle Gear- Ryton PPS	1																
7	2365-02A	Idle Gear-316 SS	1																
7	2370-02A	Idle Gear-PEEK	1																
7	2366-02A	Idle Gear-Alloy C	1																
7	2367-02A	Idle Gear-W 88	1																
7	2369-02A	Idle Gear-Teflon	1																

BEARING CODE			
C	P	J	
2	2777TC-A	Bearing, Carbon Graphite	4
2	2778TC-A	Bearing, Teflon	4
2	2205TC-A	Bearing, Rulon	4
23	2313	5th Bearing, Carbon Graphite	1
23	2314	5th Bearing, Rulon	1

SEAL CODE's																MAG CODE's		
A	B	C	D	F	G	H	J	Z	L	N	P	Q	R	S	T	M	W	
1	9355-031	O-Ring, Body -Teflon Encapsulating Silicone	2															
3	32674A	Single Mech. Stainless Wedge Carb/Ceramic/TFE/Kalrez	1															
3	32823	Single Mech. Alloy C Wedge Carb/Ceramic/TFE/Kalrez	1															
3	33067	Single Mech. Stainless Wedge Carb/SilCarb/TFE/Kalrez	1															
3	33068	Single Mech. Alloy C Wedge Carb/SilCarb/TFE/Kalrez	1															
3	33055	Single Mechanical Bellows Carb/Ceramic/Viton/Viton	1															
3	33073	Single Mechanical Bellows SiCarb/Silcarb/EPDM/EPDM	1															
3	33075	Double Mechanical Wedge Carb/SilCarb/TFE/Kalrez	1															
3	33078	Double Mechanical Bellows Carb/Ceramic/Viton/Viton	1															
3	33131	Single Mechanical Bellows SiCarb/Silcarb/Viton/Viton	1															
4	9140	Packing Ring, Teflon with Graphite	7 or 4															
4	9483	Packing Ring, Grafoil	7 or 4															
4	2498	Packing Ring, Teflon	8 or 5															
5	2748	Lip Seal	2															
8	3012	Drive Shaft - Single Mechanical Seals (Stainless)	1															
8	3013	Drive Shaft - Single Mechanical Seals (Alloy C)	1															
8	3014	Drive Shaft (Stainless)	1															
8	3015	Drive Shaft (Alloy C)	1															
8	2337	Drive Shaft - Mag (Stainless)	1															
8	2338	Drive Shaft - Mag (Alloy C)	1															
9	3016	Idle Shaft (Stainless)	1															
9	3017	Idle Shaft (Alloy C)	1															
10	2067	Clip, Retaining (Stainless)	4.5, or 6															
10	2068	Clip, Retaining (Alloy C)	4.5, or 6															
11	7065	Retaining Ring	1 or 3															
39	9524	Key, Woodruff	1															
14	9524	Key, Woodruff	2															

Other Parts

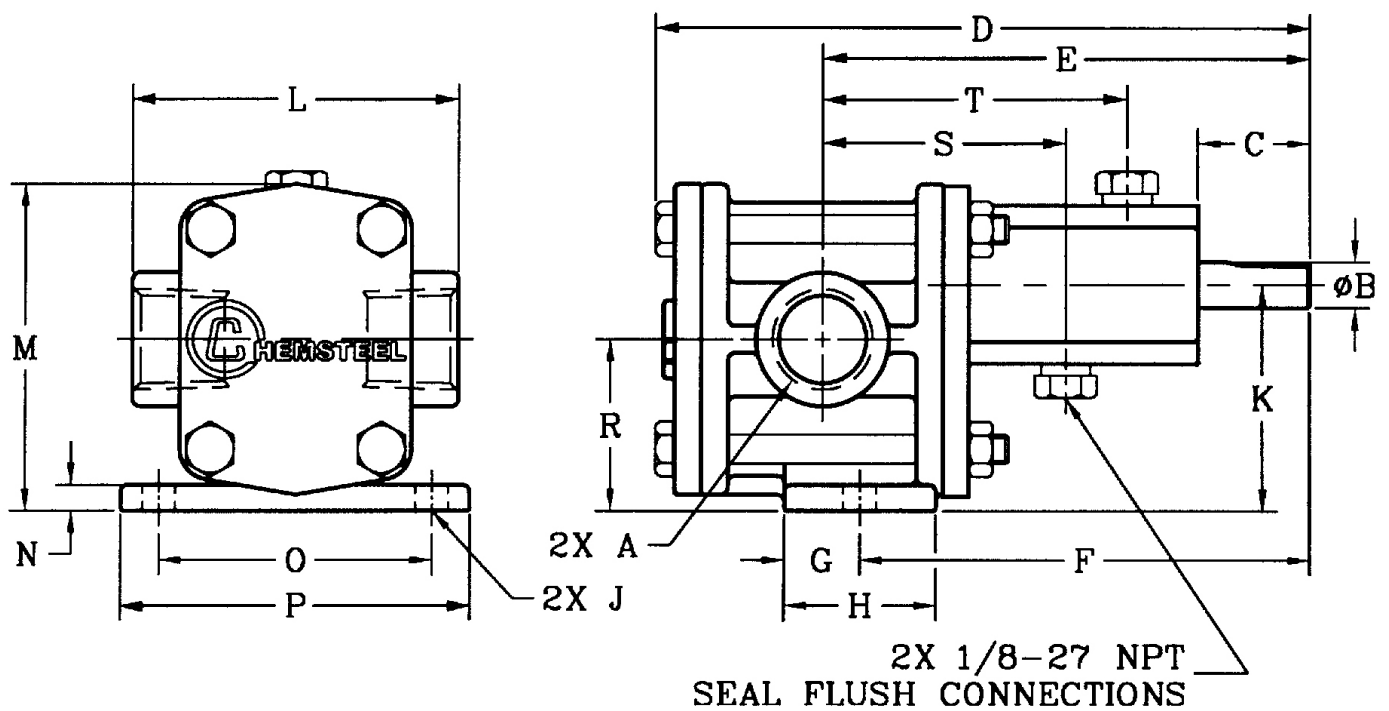
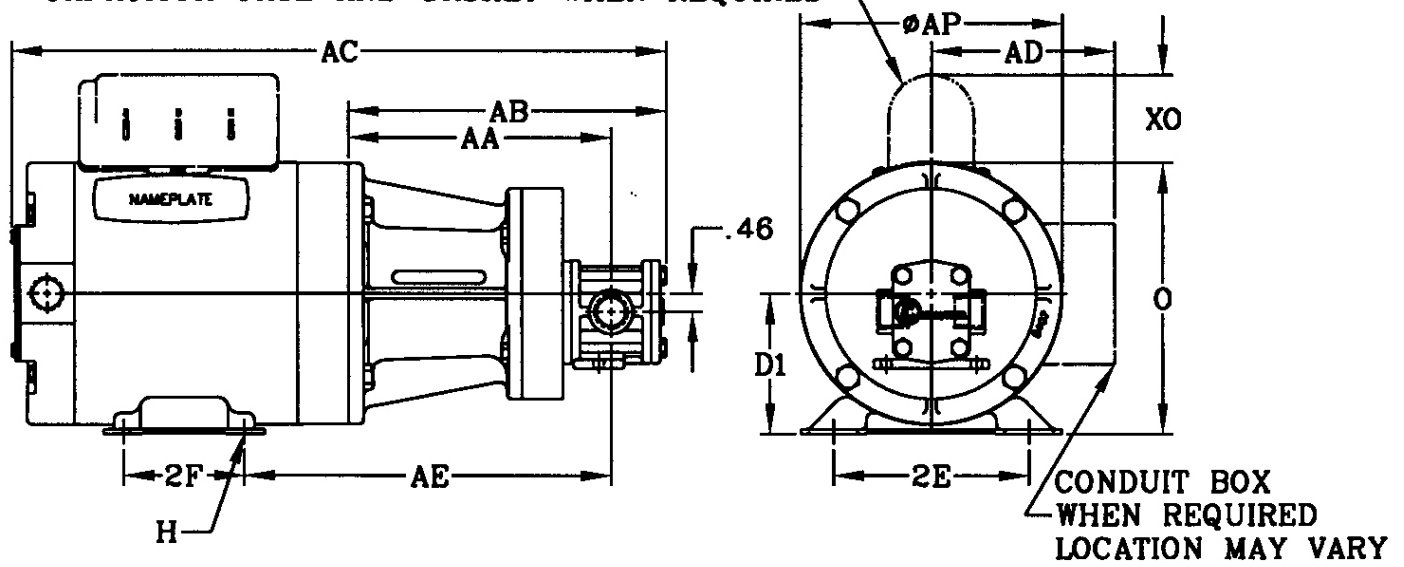
SEAL CODE's																MAG CODE's		
A	B	C	D	F	G	H	J	Z	L	N	P	Q	R	S	T	M	W	
14	9127S-5P	Body with 1/2" NPT Ports (Stainless)	1															
14	9127H-5P	Body with 1/2" NPT Ports (Alloy C)	1															
15	9128S-1	Rear Cover (Stainless)	1															
15	9128H-1	Rear Cover (Alloy C)	1															
16	9130S-3	Front Cover, Single/ Double Mechanical (Stainless)	1															
16	9130H-3	Front Cover, Single/ Double Mechanical (Alloy C)	1															
16	9129S-5	Front Cover, Lip (Stainless)	1															
16	9129S-1	Front Cover, Packing (Stainless)	1															
16	9129H-1	Front Cover, Packing (Alloy C)	1															
16	9129S-3	Front Cover, Lantern Packing (Stainless)	1															
16	9129H-3	Front Cover, Lantern Packing (Alloy C)	1															
17	9138	Pack Nut (Stainless)	1															
17	2746	Pack Nut (Alloy C)	1															
18	9365-070	Hex Head Cap Screws	4															
18	9365-062	Hex Head Cap Screws (Mag)	4															
19	9367	Hex Nuts	4															
40	9753	Dowel Pin	2															
21	6600-01	Hex Head Pipe Plug (Stainless)	2															
21	6600-02	Hex Head Pipe Plug (Alloy C)	2															
25	5390-01	Grease Lubrication Fitting	1															
38	2695	Starter Ring	1															
37	2671	Lantern Ring	1															
20	2312S	Pump Adapter (Stainless)	1															
20	2312H	Pump Adapter (Alloy C)	1															
26	2302-01	Bell Housing	1															
27	9355-033	O-Ring, Containment Can -Teflon Encapsulating Silicone	1															
29	2481-014	Hex Head Cap Screws (Bell/Pump Adapter)	4															
30 a b c d	2023-3NS	Magnet Kit, Neo (Stainless)	1															
30 a b c d	2023-3NH	Magnet Kit, Neo (Alloy C)	1															
30 a b c d	2023-3SS	Magnet Kit, Sam C (Stainless)	1															
30 a b c d	2023-3SH	Magnet Kit, Sam C (Alloy C)	1															

31,32,33,34,35	catalog	Mag - Power End Kit (motor hub, adapters, hardware)
	2464	Optional Mag. Foot Kit (not shown)
	catalog	Sealed - Close Coupled Adapter Kit (not shown- faceplate, motor adapter, couplings, hardware)
	catalog	Sealed- Long Mount Bedplate Kits (not shown - base, shims, couplings, coupling guard, hardware)
	catalog	Motors (not shown)
	catalog	Pressure Relief Valve (not shown)

Series	Model	Repair Kit
R106 M	R10631CP	R10631CPK
	R1061FPL-C1	R1061FPL-C1K
	R1061FPL	R1061FPLK
	R1061FPJ-C1	R1061FPJ-C1K
	R1061FPJ	R1061FPJK
	R1061FPA	R1061FPAK
	R1061FJC	R1061FJCK
	R1061FJA	R1061FJAK
	R1061FCL-EC3	R1061FCL-EC3K
	R1061FCL-E	R1061FCL-EK
	R1061FCB-C1	R1061FCB-C1K
	R1061FCB	R1061FCBK
	R1061FCA-C1	R1061FCA-C1K
	R1061FCA	R1061FCAK
	R1061ECH	R1061ECHK
	R1061ECB-E	R1061ECB-EK
	R1061ECB	R1061ECBK
	R1061BCH-BF81	R1061BCH-BF81K
	R1061BCB-C1	R1061BCB-C1K
	R1061BCB	R1061BCBK
	R10616JQ	R10616JQK
	R10616JB-J84	R10616JB-J84K
	R10616JB-C1	R10616JB-C1K
	R10616JB	R10616JBK
	R10616JA	R10616JAK

DIMENSIONS

CAPACITOR CASE AND GASKET WHEN REQUIRED



SHAFT CENTERLINE STUDY

Metal

Series	A	B	C			D	E	F	G	H	J			L	M	N	O	P	R
			Mechanical	Pack ¹	Lip						Diameter	Standard drive	Lower drive						
103	0.25	0.375	0.92	0.72	1.25	5.36	4.00	3.69	0.63	1.25	0.28	1.88	0.95	2.69	2.69	0.22	2.25	2.88	1.41
104/106	0.50	0.375	0.92	0.72	1.25	5.36	4.00	3.69	0.63	1.25	0.28	1.88	0.95	2.69	2.69	0.22	2.25	2.88	1.41
2	0.50	0.500	1.28	0.72	1.25	6.28	4.60	4.22	0.96	1.38	0.34	2.63	1.33	2.63	3.75	0.25	3.00	1.97	
4	0.75	0.625	1.65	1.02	1.60	7.56	5.38	4.28	1.13	2.13	0.34	3.00	1.50	3.38	4.33	0.25	2.50	3.38	2.25
9	1.50	0.625	1.65	1.02	1.60	7.81	5.50	4.16	1.25	2.13	0.41	3.88	1.88	4.00	5.53	0.25	3.00	4.00	2.88

Overall Cover length

less 25%									
Mechanical	Pack	nut #	nut length	engagement	Pack/engagement nut	diff	Lip	diff	
2.07	1.72	9138	0.74	0.55	2.27	-0.201	1.74	0.330	
2.07	1.72	9138	0.74	0.55	2.27	-0.201	1.74	0.330	
2.06	2.06	7552	0.75	0.56	2.62	-0.563	2.08	-0.026	
2.03	2.05	8347	0.81	0.61	2.66	-0.628	2.08	-0.050	
2.03	2.05	8347	0.81	0.61	2.66	-0.628	2.08	-0.048	

9 Series Metallic

	A	B	C			D	E	F	G	H	J			L	M	N	O	P	R
			Mechanical	Pack ¹	Lip						Diameter	Standard drive	Lower drive						
Inches	1.50	0.625	1.65	1.05	1.65	7.81	5.50	4.16	1.25	2.13	0.41	3.88	1.88	4.00	5.53	0.25	3.00	4.00	2.88
millimeters	15.9	41.9	41.9	41.9	41.9	198.4	139.7	105.7	31.8	54.1	10.4	98.4	47.6	101.6	140.5	6.4	76.2	101.6	73.2

Notes:

1 Dimension is approximated with packing nut installed

9 Series Non-Metallic

	A	B	C			D	E	F	G	H	J			L	M	N	O	P	R	S	T
			Mechanical	Pack ¹	Lip						Diameter	Standard drive	Lower drive								
Inches	1.50	0.625	1.28	1.00	1.61	8.21	5.50	4.55	1.25	3.50	0.40	3.98	1.98	4.19	5.89	0.29	4.25	5.63	2.98	2.76	3.13
millimeters	15.9	32.8	25.4	40.9	40.9	208.5	139.7	115.6	31.8	88.9	10.2	101.1	50.3	106.4	149.6	7.4	108.0	143.0	75.7	70.1	0

Notes:

1 Dimension is approximated with packing nut installed

4 Series Metallic

	A	B	C			D	E	F	G	H	J			L	M	N	O	P	R
			Mechanical	Pack ¹	Lip						Diameter	Standard drive	Lower drive						
Inches	0.75	0.625	1.65	1.02	1.60	7.56	5.38	4.28	1.13	2.13	0.34	3.00	1.50	3.38	4.33	0.25	2.50	3.38	2.25
millimeters	15.9	41.9	26.0	40.6	40.6	192.0	136.7	108.7	28.7	54.1	8.6	76.2	38.1	85.9	110.0	6.4	63.5	85.9	57.2

Notes:

1 Dimension is approximated with packing nut installed

2 Series Metallic

	A	B	C			D	E	F	G	H	J			L	M	N	O	P	R
			Mechanical	Pack ¹	Lip						Diameter	Standard drive	Lower drive						
Inches	0.50	0.50	1.28	0.72	1.26	6.28	4.60	4.22	0.56	1.38	0.34	2.63	1.33	2.63	3.75	0.25	2.25	3.00	1.97
millimeters	12.7	12.7	32.5	18.2	32.0	159.5	116.8	107.2	14.2	35.1	8.6	66.7	33.7	66.8	95.3	6.4	57.2	76.2	50.0

Notes:

1 Dimension is approximated with packing nut installed

2 Series Non-Metallic

	A	B	C			D	E	F	G	H	J			L	M	N	O	P	R	S	T
			Mechanical	Pack ¹	Lip						Diameter	Standard drive	Lower drive								
Inches	0.50	0.50	1.21	0.72	2.25	6.67	4.38	3.82	1.12	2.38	0.26	2.38	1.08	2.50	3.41	0.22	2.88	3.50	1.73	2.19	1.73
millimeters	12.7	12.7	30.7	18.3	57.2	169.4	111.3	97.0	28.4	60.5	6.6	60.5	27.4	63.5	86.6	5.6	73.2	88.9	43.9	55.6	43.9

Notes:

1 Dimension is approximated with packing nut installed

103 Series Metallic

	A	B	C			D	E	F	G	H	J			L	M	N	O	P	R
			Mechanical	Pack ¹	Lip						Diameter	Standard drive	Lower drive						
Inches	0.25	0.38	0.92	0.72	1.25	5.36	4.00	3.69	0.63	1.25	0.28	1.88	0.95	2.69	2.69	0.22	2.25	2.88	1.41
millimeters	9.5	23.4	23.4	18.3	31.8	136.1	101.6	93.7	16.0	31.8	7.1	47.6	24.0	68.3	68.3	5.6	57.2	73.2	35.8

Notes:

1 Dimension is approximated with packing nut installed

104/106 Series Metallic

	A	B	C			D	E	F	G	H	J			L	M	N	O	P	R
			Mechanical	Pack ¹	Lip						Diameter	Standard drive	Lower drive						
Inches	0.50	0.38	0.92	0.72	1.25	5.36	4.00	3.69	0.63	1.25	0.28	1.88	0.95	2.69	2.69	0.22	2.25	2.88	1.41
millimeters	9.5	23.4	23.4	18.3	31.8	136.1	101.6	93.7	16.0	31.8	7.1	47.6	24.0	68.3	68.3	5.6	57.2	73.2	35.8

Notes:

1 Dimension is approximated with packing nut installed

Non-Metallic

Series	A	B	C			D	E	F	G	H	J			L	M	N	O	P	R
			Mechanical	Pack ¹	Lip						Slot Width	Standard drive	Lower drive						
2	0.50	0.500	1.23	0.72	2.25	6.67	4.38	3.82	1.12	2.38	0.26	2.38	1.08	2.50	3.41	0.22	2.88	3.50	1.73
9	1.50	0.625	1.29	1.00	1.61	8.21	5.50	4.55	1.25	3.50	0.40	3.98	1.98	4.19	5.89	0.29	4.25	5.63	2.98

Notes:

1 Dimension is approximated with packing nut installed

2674

2675

MAINTENANCE

A three-part housing provides easy disassembly and service. Full size bearings match the gear diameter, and eliminate the need for separate wear plates. TFE encapsulating silicone o-ring pump housing seals provide elastic memory to assure an effective long lasting seal and thus avoiding the re-torquing required of pumps using pure TFE. The upper shaft configuration lends itself to inline pump seal maintenance without the leakage of trapped chemicals from an incompletely drained pump. To order a CHEMKIT™ parts kit, simply add a "K" to the end of the model number. A repair kit contains the following parts: bearings, gears, o-rings, shafts, keys, c clips, and retaining ring.

LIFE CYCLE/COST OF OWNERSHIP

Pump design and materials selection, together provide the longest life available from a gear pump.

Key attributes include:

- Gear & bearing combinations of metallic and nonmetallic wear surfaces.
- Slotted bearings to lubricate shaft and gear surfaces.
- Hydraulic porting to balance axial thrust and to reduce wear.
- Ample port sizing to reduce the likelihood of cavitation when inlet pressure is marginal.
- Effective housing seals with elastic memory prevent leakage of corrosives.

FIT

Connections are 1/2" female NPT or BSPT, pump hardware is metric and close couple adapters mount to both NEMA and IEC standard motor frame sizes for worldwide acceptance. "Near" dimensional interchangeability offers easy upgrade to CHEMSTEEL™ pump. The port size is the same as competitive pumps.