CHEMSTEEL™ PUMP SERIES S417 METALLIC

CHEMSTEEL™ PUMP

CHEMSTEEL PUMPS SERIES S417 M

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,. W88 stainless and Alloy C. Also in Polytetrafluoroethylene, polyphenylenesulfide and polyetheretherketone.
- Shafts are 316 stainless steel or Alloy C.
- Bearings available in carbon or Polytetrafluoroethylene. Full range of seal options including lip seal, packing and mechanical designs.

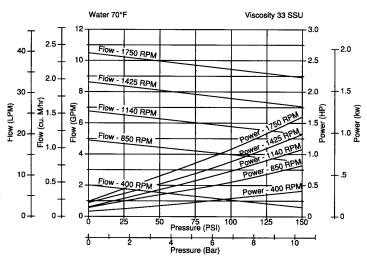
DRIVE

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.

PERFORMANCE



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

SERIES S417 / SM417 METAL PUMPS

Revised 12/09/03

CHEMkit Parts

No.	Part No.	Part Name	Req.	т —																		ľ	
				_			GEAR CODE																
						- ⊢	1	2 3	4	5	6	7	8	9	Α	В	С	E	F	1			
6	9750-01A	Drive Gear-Ryton PPS	1 1						+ -	<u> </u>	Ť	<u> </u>	Ť	<u> </u>			Ť		<u> </u>	ı		l	
6	9663-01A	Drive Gear-316 SS	1																	ı		l	
6	9396-01A	Drive Gear-PEEK	1																	ı		l	
6	8855-01A	Drive Gear-Allov C	1																/	1		l	
6	8878-01A	Drive Gear-W 88	1																	ı		l	
6	8879-01A	Drive Gear-Teflon	- 1									l											
7	9750-02A	Idle Gear- Ryton PPS	1																	1		l	
7	9663-02A	Idle Gear-316 SS	-1																	1		l	
7	9396-02A	Idle Gear-PEEK	- 1																	1		l	
7	8855-02A	Idle Gear-Alloy C	1																	l		l	
7	8878-02A	Idle Gear-W 88	1																	l		l	
7	8879-02A	Idle Gear-Teflon	1																	ı		l	
																						l	
					BEARING																	l	
					CODE																	l	
				С	P	J																l	
2	8852TC-A	Bearing, Carbon Graphite	4																			l	
2	8890TC-A	Bearing, Teflon	4																			l	
2	2211TC-A	Bearing, Rulon	4																			l	
23	5091-01	5th Bearing, Carbon Graphite	1																			l	
23	2064	5th Bearing , Rulon	1																			l	
						H	A	3 C	D	F	G	S H	EAL (CODE		N	P	Q	R	S	Т	MAG M	CODE's
1	9355-040	O-Ring, Body -Teflon Encapsulating Silicone	2																				
3	32923	Single Mech. Stainless Wedge Carb/Ceramic/TFE/Kalrez	1																				
3	32924																						
3	32924	Single Mech. Alloy C Wedge Carb/Ceramic/TFE/Kalrez	1																				
	33071	Single Mech. Alloy C Wedge Carb/Ceramic/TFE/Kalrez Single Mech. Stainless Wedge Carb/SilCarb/TFE/Kalrez	1 1																				
3		Single Mech. Alloy C Wedge Carb/Ceramic/TFE/Kalrez Single Mech. Stainless Wedge Carb/SilCarb/TFE/Kalrez Single Mech. Alloy C Wedge Carb/SilCarb/TFE/Kalrez																					
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	33071 33072 32917 33074	Single Mech. Alloy C Wedge Carb/Ceramic/TFE/Kalrez Single Mech. Stainless Wedge Carb/SilCarb/TFE/Kalrez Single Mech. Alloy C Wedge Carb/SilCarb/TFE/Kalrez Single Mechanical Bellows Carb/Ceramic/Viton/Viton Single Mechanical Bellows SilCarb/Silcarb/EPDM/EPDM	1																				
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3 3 3 3 3 4 4 4 4 5 5 8 8 8 8 8 9 9	33071 33072 32917 33074 33074 33077 33080 33108 8397 9609 2497 2750 2442 2446 2447 2447 2449 2444 2444 2448 2449 2449 2449 2449	Single Mech. Alloy C Wedge Carb/Ceramio/TFE/Kalrez Single Mech. Alloy C Wedge Carb/SiCarb/FE/Kalrez Single Mech. Alloy C Wedge Carb/SiCarb/FE/Kalrez Single Mech. Alloy C Wedge Carb/SiCarb/FE/Kalrez Single Mechanical Bellows Carb/Ceramio/Vion/Vion Single Mechanical Bellows SiCarb/SiCarb/FE/PDM/FDM/ Obuble Mechanical Bellows SiCarb/SiCarb/FE/Kalrez Double Mechanical Bellows SiCarb/SiCarb/Vion/Vion Single Mechanical Bellows SiCarb/SiCarb/Vion/Vion Packing Ring, Felton with Graphite Packing Ring, Felton Lip Seal Drive Shaft (Siamless) Drive Shaft (Siamless) Drive Shaft (Alloy C) Uide Shaft (Siamless) Uide Shaft (Alloy C) Uig Retaining (Stainless) Cilip, Retaining (Stainless) Cilip, Retaining (Stainless)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3			5 5 5 5	5 5 5	5 5	5 5 5	4 4	4 4	5 5	5 5	4 4	7	7	7	4 4 4	4 4 4	4 4 4	6 6	6 6
3 3 3 3 3 4 4 4 4 5 5 8 8 8 8 8 8 9 9 10 10 11 11	33071 33072 32917 33074 33074 33077 33080 33080 33108 8397 2497 2750 2442 2443 2444 2444 2444 2444 2444 244	Single Mech. Alloy C Wedge Carb/Ceramio/TFE/Kalrez Single Mech. Alloy C Wedge Carb/SiCarb/FE/Kalrez Single Mech. Alloy C Wedge Carb/SiCarb/FE/Kalrez Single Mech. Alloy C Wedge Carb/SiCarb/FE/Kalrez Single Mechanical Bellows Scatt/SiCarb/FE/Morivor/Single Mechanical Bellows Scatt/SiCarb/FE/Morivor/Single Mechanical Bellows SiCarb/SiCarb/FE/Kalrez Double Mechanical Wedge Carb/SiCaramic/Viton/Viton Single Mechanical Bellows SiCarb/SiCarb/FE/Kalrez Double Mechanical Bellows SiCarb/SiCarb/SiCarb/Viton/Viton Packing Ring, Teflon with Graphite Packing Ring, Garfoil Packing Ring, Garfoil Drive Shaft - Single Mechanical Seals (Stainless) Drive Shaft - Single Mechanical Seals (Stainless) Drive Shaft - Single Mechanical Seals (Alloy C) Drive Shaft - Single Mechanical Seals (Stainless) Drive Shaft - Mag (Alloy C) Drive Shaft - Mag (Alloy C) Idle Shaft (Stainless) Idle Shaft (Stainless) Idle Shaft (Stainless) Idle Shaft (Alloy C) Cilp, Retaining (Stainless) Cilp, Retaining Ring Retaining Ring	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3			55	5 5 5	5 5	5 5 5	4 4	4 4	5 5	5 5 5	4 4 4	7	7	7	4 4 4 4	4 4 4	4 4 4 4	6 6	6 6
3 3 3 3 3 4 4 4 4 5 5 8 8 8 8 8 9 9	33071 33072 32917 33074 33074 33077 33080 33108 8397 9609 2497 2750 2442 2446 2447 2447 2449 2444 2444 2448 2449 2449 2449 2449	Single Mech. Alloy C Wedge Carb/Ceramio/TFE/Kalrez Single Mech. Alloy C Wedge Carb/SiCarb/FE/Kalrez Single Mech. Alloy C Wedge Carb/SiCarb/FE/Kalrez Single Mech. Alloy C Wedge Carb/SiCarb/FE/Kalrez Single Mechanical Bellows Carb/Ceramio/Vion/Vion Single Mechanical Bellows SiCarb/SiCarb/FE/PDM/FDM/ Obuble Mechanical Bellows SiCarb/SiCarb/FE/Kalrez Double Mechanical Bellows SiCarb/SiCarb/Vion/Vion Single Mechanical Bellows SiCarb/SiCarb/Vion/Vion Packing Ring, Felton with Graphite Packing Ring, Felton Lip Seal Drive Shaft (Siamless) Drive Shaft (Siamless) Drive Shaft (Alloy C) Uide Shaft (Siamless) Uide Shaft (Alloy C) Uig Retaining (Stainless) Cilip, Retaining (Stainless) Cilip, Retaining (Stainless)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3			5 5 5 5	5 5 5	5 5	5 5	4 4	4 4	5 5	5 5 5	4 4	7	7	7	4 4 4	4 4 4	4 4 4	6 6	6 6

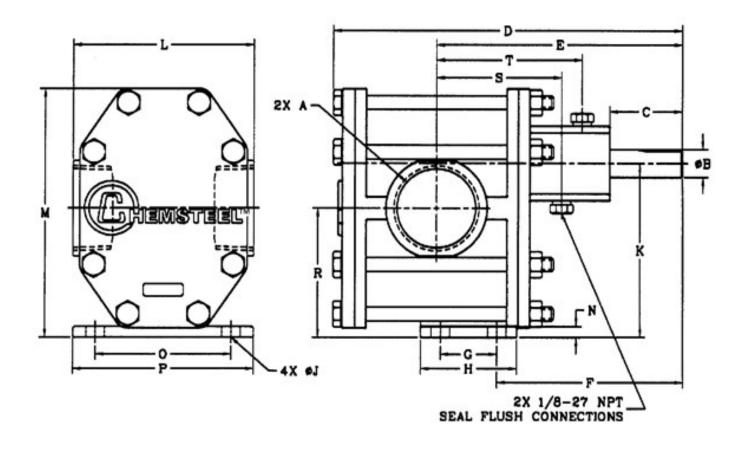
Other Parts

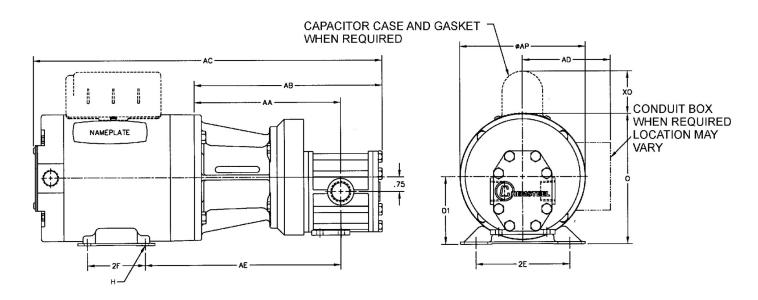
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				Α	В	С	D	F	G	Н	J	Z	L	N	P	Q	R	S	Т	M	W
14	8848S-1	Body with 3/4" NPT Ports (Stainless)	1																		
14	8848H-1	Body with 3/4" NPT Ports (Alloy C)	1																		
15	8849S-1	Rear Cover (Stainless)	-1																		
15	8849H-1	Rear Cover (Alloy C)	1																		
16	8850S-3	Front Cover, Single/ Double Mechanical (Stainless)	1																		
16	8850H-3	Front Cover, Single/ Double Mechanical (Alloy C)	1																		
16	8851S-5	Front Cover, Lip (Stainless)	1																		
16	8851S-1	Front Cover, Packing (Stainless)	1																		$\overline{}$
16	8851H-1	Front Cover, Packing (Alloy C)	1																		\equiv
16	8851S-3	Front Cover, Lantern Packing (Stainless)	1																		
16	8851H-3	Front Cover, Lantern Packing (Alloy C)	1																		
17	8347	Pack Nut (Stainless)	1																		$\overline{}$
17	8898	Pack Nut (Alloy C)	1																		$\overline{}$
18	9366-110	Hex Head Cap Screws	8																		
18	9366-101	Hex Head Cap Screws (Mag)	8																		
19	9368	Hex Nuts	8																		$\overline{}$
40	9794	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	2697	Starter Ring	1																		
37	2673	Lantern Ring	1																		
22	2919-01	Allen Head Pipe Plug (Stainless)	2																		
22	2919-02	Allen Head Pipe Plug (Alloy C)	2																		
20	2489S-4	Pump Adapter (Stainless)	1																		
20	2489H-4	Pump Adapter (Alloy C)	1																		
26	2099-C	Bell Housing	1																		
27	9355-038	O-Ring, Containment Can -Teflon Encapsulating Silicone	1																		
28	2479-016	Socket Head Cap Screws (Can Flange)	6																		
29	2484-020	Hex Head Cap Screws (Bell/Pump Adapter)	4																		
30 a b c d	2023-16NS	Magnet Kit, Neo (Stainless)	1																		
30 a b c d	2023-16NH	Magnet Kit, Neo (Alloy C)	1																		
30a b c d	2023-16SS	Magnet Kit, Sam C (Stainless)	1																		
30a b c d	2023-16SH	Magnet Kit, Sam C (Alloy C)	1																		
36	2919H-015	0.015" Orifice Plug	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)

		11 100
Series	Model	Repair Kit
S417 M	S4173ACD	S4173ACDK
	S41735PD-C1	S41735PD-C1K
	S41735PD	S41735PDK
	S41735CD	S41735CDK
	S41734CD-C1-J47	S41734CD-C1-J47K
	S41734CD-C1	S41734CD-C1K
	S41734CD	S41734CDK
	S41731CP	S41731CPK
	S41731CD	S41731CDK
	S4171FPN	S4171FPNK
	S4171FPL-EC5	S4171FPL-EC5K
	S4171FPL-E	S4171FPL-EK
	S4171FPC	S4171FPCK
	S4171FPB	S4171FPBK
	S4171FPA	S4171FPAK
	S4171FJB-C1	S4171FJB-C1K
	S4171FJB	S4171FJBK
	S4171FCC-C1	S4171FCC-C1K
	S4171FCC	S4171FCCK
	S4171FCB-C1	S4171FCB-C1K
	S4171FCB	S4171FCBK
	S4171FCA	S4171FCAK
	S4171ECZ-C1	S4171ECZ-C1K
	S4171ECZ	S4171ECZK
	S4171ECQ	S4171ECQK
	S4171ECP-E	S4171ECP-EK
	S4171ECN	S4171ECNK
	S4171ECH	S4171ECHK
	S4171ECB-C2	S4171ECB-C2K
	S4171ECB	S4171ECBK
	S4171ECA	S4171ECAK

DIMENSIONS





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-torqueing required of pumps using pure TFE. The upper shaft configuration lends itself to in-line 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 CHEMKIT™ parts kit contains the following parts seals, 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 3/4"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.