

## 35 Frame Plunger Pumps

Nickel Aluminum  
Bronze Models

3507  
3517

### FEATURES

#### Superior Design

- Triplex plunger design gives smoother liquid flow.
- V-Packings are completely lubricated and cooled by the liquid being pumped.
- Inlet and discharge valve assemblies interchange for easier maintenance.
- Lubricated Lo-Pressure Seals provide double protection against external leakage.
- Oil bath crankcase assures optimum lubrication in drive-end.
- Close tolerance concentricity of the ceramic plunger maximizes seal life.

#### Quality Materials

- All stainless steel valves are heat treated and seats are roller burnished for a positive seal and extended valve life.
- Nickel Aluminum Bronze manifolds are strong and corrosion resistant.
- Special concentric, high density, polished, graphite impregnated, solid ceramic plungers are abrasion resistant and result in extended seal life.
- Specially formulated, CAT PUMP exclusive, V-Packings offer unmatched performance and seal life.
- Die cast aluminum crankcase provides high strength, minimum weight and precision tolerance control.
- Chrome-moly crankshaft gives unmatched strength and surface hardness.
- Oversized crankshaft bearings with greater loading capacity means longer bearing life.

#### Easy Maintenance

- Wet-end is easily serviced without entering crankcase, requiring less time and effort.
- Valve assemblies are accessible without disturbing piping, for quick service.
- Preset packings mean no packing gland adjustment is necessary, reducing maintenance costs.

#### **⚠ WARNING**

All systems require both a primary pressure regulating device (i.e., regulator, unloader) and a secondary pressure safety relief device (i.e., pop-off valve, safety valve). Failure to install such relief devices could result in personal injury or damage to the pump or to system components. CAT PUMPS does not assume any liability or responsibility for the operation of a customer's high pressure system.

### SPECIFICATIONS

U.S. Measure

Metric Measure

#### MODEL 3507

Flow .....9.0 GPM (34 L/M)  
 Pressure Range.....100 to 5000 PSI (7 to 345 BAR)  
 Bore.....0.787" (20 mm)  
 Discharge Ports (2).....3/4" NPTF (3/4" NPTF)

#### MODEL 3517

Flow.....14 GPM (53 L/M)  
 Pressure Range.....100 to 3000 PSI (7 to 210 BAR)  
 Bore.....0.984" (25 mm)  
 Discharge Ports (2).....1" NPTF (1" NPTF)

#### COMMON SPECIFICATIONS

Inlet Pressure Range.....Flooded to 70 PSI (Flooded to 4.9 BAR)  
 RPM .....800 RPM (800 RPM)  
 Stroke .....1.890" (48 mm)  
 Crankcase Capacity.....4.2 Qts. (4 L)  
 Maximum Liquid Temperature .....160°F (71°C)  
 Inlet Ports (2) .....1-1/2" NPTF (1-1/2" NPTF)  
 Pulley Mounting .....Either Side (Either Side)  
 Shaft Diameter .....1.378" (35 mm)  
 Weight.....152 lbs. (69 kg)  
 Dimensions .....24.49 x 18.11 x 9.72" (622 x 460 x 247 mm)

### HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE						RPM
	U.S. GPM	L/M	PSI 2000	PSI 2500	PSI 3000	PSI 4000	PSI 4500	PSI 5000	
			BAR 140	BAR 175	BAR 210	BAR 275	BAR 310	BAR 345	
3507	9	34	N/A	N/A	N/A	24.7	27.8	30.8	800
	8	30	N/A	N/A	N/A	22.0	24.7	27.4	711
	7	27	N/A	N/A	N/A	19.2	21.6	24.0	622
3517	14	53	19.2	24.0	28.8	N/A	N/A	N/A	800
	12	45	16.5	20.6	24.7	N/A	N/A	N/A	685
	10	38	13.7	17.2	20.6	N/A	N/A	N/A	571

**DETERMINING THE PUMP R.P.M.**

Rated G.P.M. = "Desired" G.P.M.  
Rated R.P.M. "Desired" R.P.M.

**DETERMINING THE REQUIRED H.P.**

GPM x PSI = Electric Brake  
 1460 H. P. Required

**DETERMINING MOTOR PULLEY SIZE**

Motor Pulley O.D. = Pump Pulley O.D.  
Pump R.P.M. Motor R.P.M.

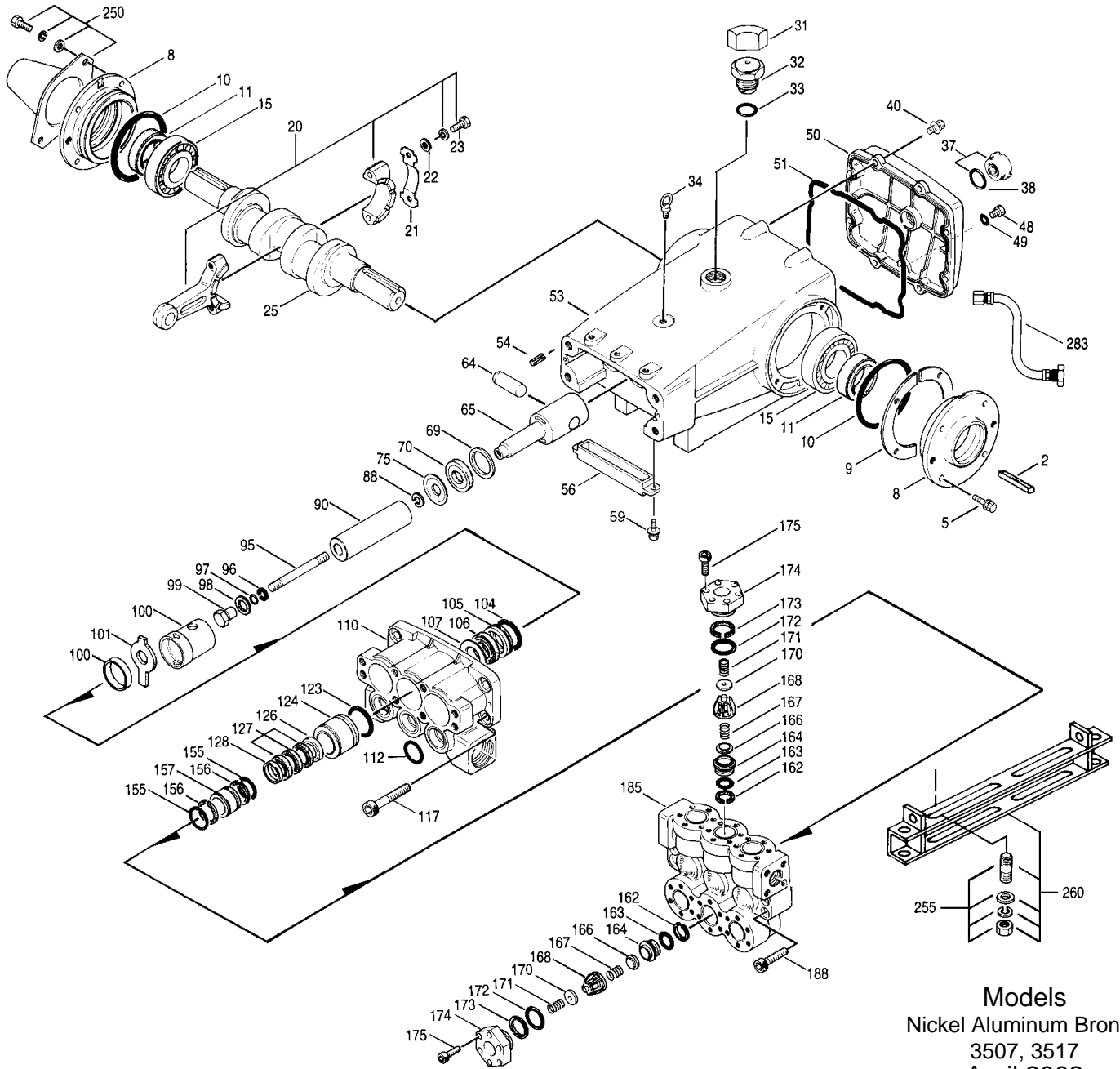
See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 003.  
 Refer to pump Service Manual for repair procedure and additional technical information.

*"Customer confidence is our greatest asset"*

# PARTS LIST

ITEM	PART NUMBER		DESCRIPTION	QTY
	3507	MATL 3517		
● 2	34021	STL 34021	Key (M10x8x70)	1 ●
5	118824	S 118824	Screw, Sems HH (M8x25)	8
8	44542	AL 44542	Cover, Bearing	2
	701138	F 701138	Cover, Bearing (Use w/701139, 140, 145, 147, 428)	2
9	44543	FBR 44543	Shim, 1/2 Circle	0-2
10	12398	NBR 12398	O-Ring, Bearing Cover - 70D	2
11	13296	NBR 13296	Seal, Oil, Crankshaft	2
15	29326	STL 29326	Bearing, Roller	2
20	121467	TNM 121467	Rod Assembly, Connecting [10/00]	3
21	44940	STZP 44940	Washer, Locking	3
22	43641	STZP 43641	Washer (M10.5x 1.5)	6
23	88155	STZP 88155	Screw HH (M10x60F) <span style="border: 1px solid black; padding: 2px;"> </span> Replace as a set	6
25	29325	FCM 29325	Crankshaft, Dual End	1
31	828710	828710	Protector, Oil Cap	1
32	43211	ABS 43211	Cap, Oil Filler	1
33	14177	NBR 14177	O-Ring, Oil Filler Cap - 70D	1
34	44319	STZP 44319	Bolt, Eye (M12)	1
35	701145	AL 701145	Rivet Serial Plate (Use w/701138, 139, 140, 147, 428)	4
36	701147	AL 701147	Plate Name (Use w/701138, 319, 140, 145, 428)	1
37	92241	92241	Gauge, Bubble Oil w/Gasket	1
38	44428	NBR 44428	Gasket, Flat Oil Gauge - 80D	1
40	118824	S 118824	Screw, Sems HH (M8x25)	8
48	25625	STCP 25625	Plug, Drain (1/4"x19BSP)	1
49	23170	NBR 23170	O-Ring, Drain Plug - 70D	1
50	45936	AL 45936	Cover, Rear	1
	701139	F 701139	Cover, Rear (Use w/701138, 140, 145, 147, 428)	1
51	16612	NBR 16612	O-Ring, Cover	1
● 53	44559	AL 44559	Crankcase w/Guide Pins	1 ●
	701428	F 701428	Crankcase (Use w/701138, 139, 140, 145, 147)	1 ●
54	27488	S 27488	Pin, Guide	2
56	27790	PE 27790	Pan, Oil	1
59	92519	STZP 92519	Screw, Sems HHC (M6x16)	2
64	43864	CM 43864	Pin, Crosshead	3
65	45118	SSZZ 45118	Rod, Plunger	3
69	29338	STZP 29338	Washer, Oil Seal	3
70	100488	NBR 100488	Seal, Plunger Rod Oil	3
75	43506	S 43506	Slinger, Barrier	3
88	45675	SS 45675	Washer, Keyhole (M12)	3
90	43945	CC 43945	Plunger (M20x145)	3
		43866	Plunger (M25x145)	3
95	89779	S 89779	Stud, Retainer (M7x123) or (M10x135)	3
96	20184	PTFE 20184	Back-up-Ring, Plunger Retainer	3
97	14190	NBR 14190	O-Ring, Plunger Retainer - 70D	3
	14161	FPM 14161	O-Ring, Plunger Retainer	3
98	44069	SSL 44069	Gasket (M7) or (M10)	3
99	44068	SSL 44068	Retainer, Plunger (M7) or (M10)	3
100	814279	PVDF 814279	Retainer, Seal, 2 Pc.	3
101	44095	44095	Wick	3
104	43875	NBR 43875	O-Ring, Adapter - 70D	3
	44826	FPM 44826	O-Ring, Adapter - 70D	3
105	44073	NAB 44073	Adapter, LPS	3
106	44071	NBR 44071	Seal, LPS w/SS-Spg	3
	44381	FPM 44381	Seal, LPS w/SS-Spg	3
	44074	SS 44074	Washer, LPS	3
● 110	44206	NAB 44206	Manifold, Inlet	1 ●
112	11379	NBR 11379	O-Ring, Inlet Manifold - 70D	3
	14183	FPM 14183	O-Ring, Inlet Manifold	3
117	44585	S 44585	Screw, HSH (M14x40)	4
123	12391	NBR 12391	O-Ring, V-Packing Cylinder - 70D	3
	13266	FPM 13266	O-Ring, V-Packing Cylinder - 70D	3
124	44075	NAB 44075	Cylinder, V-Packing	3
126	44076	NAB 44076	Adapter, Female	3
127	44607	STG* 44607	V-Packing	9/6
128	44077	NAB 44077	Adapter, Male	3
155	17622	NBR 17622	O-Ring, V-Packing Spacer	6
	11719	FPM 11719	O-Ring, V-Packing Spacer	6
156	28675	PTFE 28675	Back-up-Ring, V-Packing Spacer	6
157	46668	SS 46668	Spacer, V-Packing	3
162	21985	PTFE 21985	Back-up-Ring, Seat	6
163	26089	NBR 26089	O-Ring, Seat - 80D	6
	11377	FPM 11377	O-Ring, Seat - 80D	6
164	44080	SS 44080	Seat	6
166	44081	SS 44081	Valve	6
167	44082	SS 44082	Spring	6
168	44735	PVDF 44735	Retainer, Spring	6
170	44794	SS 44794	Washer, Spring Retainer	6
171	44793	SS 44793	Spring, Coil, Valve Plug	6
172	15853	NBR 15853	O-Ring, Valve Plug - 70D	6
	11720	FPM 11720	O-Ring, Valve Plug - 70D	6
173	20224	PTFE 20224	Back-up-Ring, Valve Plug	6
174	44795	NAB 44795	Plug, Valve	6
175	87951	S 87951	Screw, HSH (M10x30)	36
● 185	46561	NAB 46561	Manifold, Discharge [10/99]	1 ●
188	89981	S 89981	Screw, HSH(M12x70)	8
● 250	44516	NY 44516	Protector, Shaft, w/2 Screws (89283) (Included with Pump)	1 ●
	701140	F 701140	Protector, Shaft (Use w/701138, 139, 145, 146, 428)	1 ●
● 255	34018	STZP 34018	Kit, Course, Direct Mount	1 ●
● 260	92674	STZP 92674	Box Mounting Assy-Course	1 ●
● 275	—	—	Pulley, Hub & Key [See Drive Packages, Tech Bulletin 003]	1 ●

# EXPLODED VIEW



Models  
Nickel Aluminum Bronze  
3507, 3517  
April 2002

	3507	MATL	3517	MATL			
●	279	30278	STZP	30278	STZP	Oiler (1 oz.)	3 ●
	281	30967		30967		Glass, Oiler	3
	282	10069	NBR	10069	NBR	Gasket, Oiler	3
●	283	34334		34334		Kit, Oil Drain	1 ●
●	—	34039	SS	34039	SS	Mount, Stud	1 ●
	290	6104		6104		Gasket, Liquid (1 oz.)	1
●	299	<b>816755</b>	<b>NAB</b>	<b>816755</b>	<b>NAB</b>	Head, Complete	1 ●
	300	<b>31037</b>	<b>NBR*</b>	<b>31038</b>	<b>NBR*</b>	Kit, Seal (Incls: 97,104,106,112,123,127,155,156)	1
		<b>33265</b>	<b>FPM*</b>	<b>31266</b>	<b>FPM*</b>	Kit, Seal (Incls: 97,104,106,112,123,127,155,156)	1
	310	34151	NBR	34151	NBR	Kit, Valve (Incls: 162,163,164,166,167,168,170,172,173)	2
		701798	FPM	701798	FPM	Kit, Valve (Incls: 162,163,164,166,167,168,170,172,173)	2
●	—	711500	SS	711500	SS	C. A. T. (For R. O. or Industrial Applications)	1 ●
●	—	711506	SS	711506	SS	Adapter (2 per C.A.T.) (See Data Sheet for complete selection)	2 ●
●	—	819000	F	819000	F	Assy, Crankcase, Cast Iron (Incls: 8,35,36,50,53,250)	1 ●
	—	6565.4		6565.4		Plunger Pump Service Video	1
	—	6100		6100		Oil, Case (12 Bottles) ISO 68 Multi-viscosity Hydraulic (Fill to specified crankcase capacity prior to start-up)	1

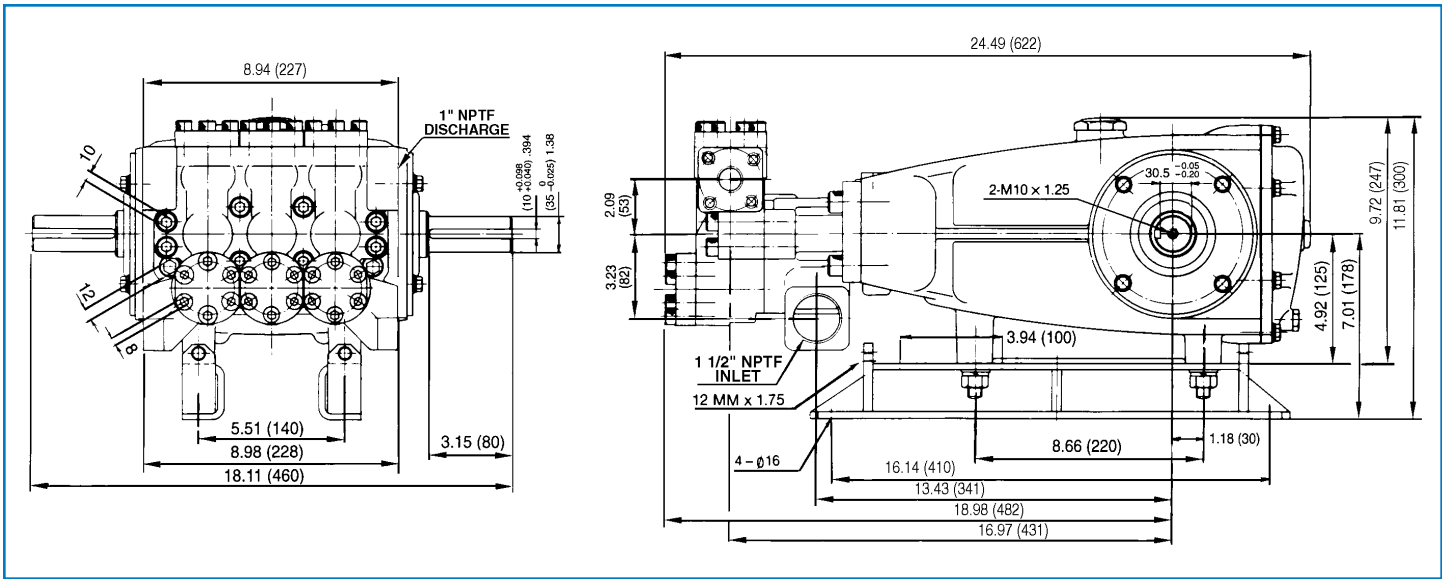
● Industrial discount. **Bold print part numbers are unique to a particular pump model.** *Italics are optional items.*

[ ] Date of latest production change. \*Review material codes for individual items ( STG generally may be used as alternate).

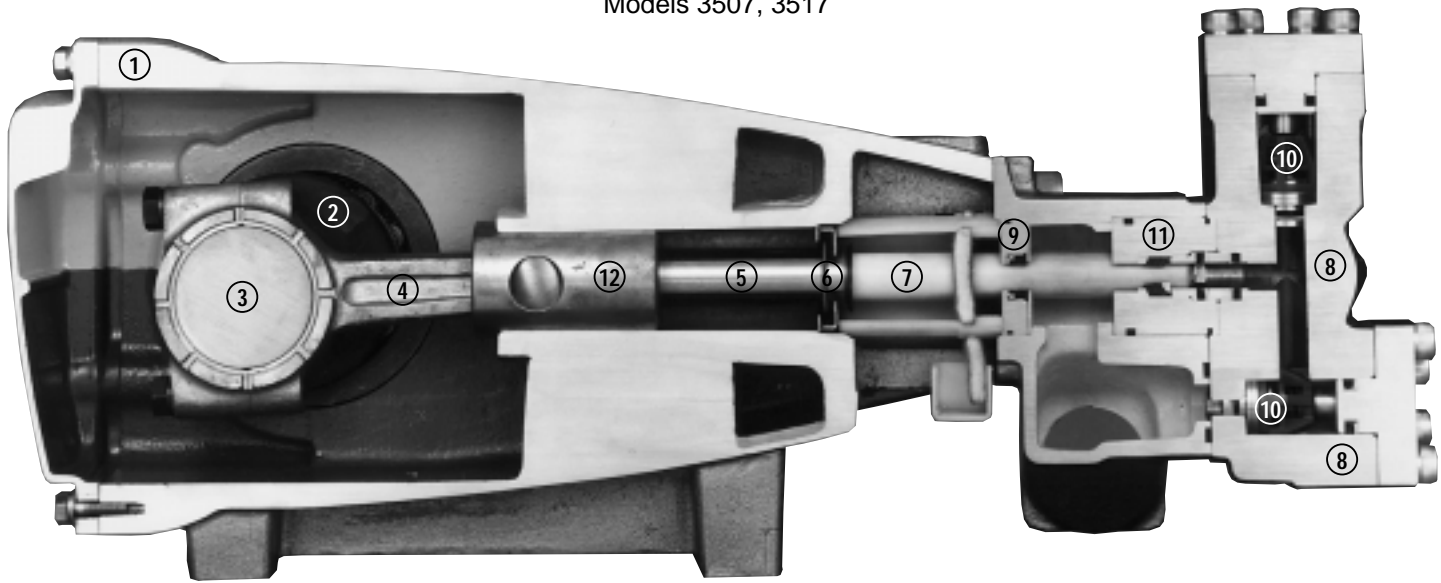
**C.A.T. highly recommended for pressurized inlet, R.O. and Industrial applications.**

See Tech Bulletins 002, 003, 024, 035, 036, 041, 043, 052, 053, 068, 069, 074, 077, 080 and 083 for additional information.

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum BB=Brass BBCP=Brass/Chrome Plated CC=Ceramic CM=Chrome-Moly F=Cast Iron  
FBR=Fiber FCM=Forged Chrome-moly FPM=Fluorocarbon (Viton®) HS=High Strength NAB=Nickel Aluminum Bronze NBR=Medium Nitrile (Buna-N)  
NBRS=Buna, Silicone Free NY=Nylon PE=Polyethylene PTFE=Pure Teflon® PVDF=Fluoroplastic (High Strength) S=304SS SS=316SS SSL=316SS/Low Carbon  
STG=Special Blend (Teflon®) White SSZZ=316SS/Zamak STL=Steel STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated TNM=Special High Strength



Models 3507, 3517



- 1 Die cast aluminum **crankcase** means high strength, lightweight, and excellent tolerance control.
- 2 Oversized crankshaft **bearings** provide extended bearing life and pump performance.
- 3 Chrome-moly **crankshaft** provides unmatched strength and surface hardness for long life.
- 4 Matched oversized high strength **connecting rods** are noted for superior strength and bearing quality.
- 5 Special stainless steel **plunger rods** with high strength crossheads for longevity and corrosion resistance.
- 6 The stainless steel **slinger** provides back-up protection for the crankcase seal, keeping pumped liquids out of the crankcase.
- 7 Special concentric, high density, polished, graphite impregnated, solid ceramic **plungers** are abrasion resistant and result in extended seal life.
- 8 **Manifolds** are high tensile strength nickel aluminum bronze for long term, continuous duty.
- 9 100% **wet seal** design adds to service life by allowing pumped liquids to cool and lubricate on both sides.
- 10 Stainless steel **valves, seats and springs** provide corrosion-resistance, positive seating and long life.
- 11 Specially formulated, CAT PUMP exclusive, **V-Packings** offer unmatched performance and seal life.
- 12 **Crossheads** are 360° supported for uncompromising alignment.

Products described hereon are covered by one or more of the following U.S. patents 3558244, 3652188, 3809508, 3920356, 3930756 and 5035580

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