

35 Frame Plunger Pump

Standard Brass Model

3535

Stainless Steel Model

3531

Nickel Aluminum Bronze Model

3537

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.
- 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.
- Forged Brass, 316 Stainless Steel or Nickel Aluminum Bronze manifolds for strength and corrosion resistance.
- 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.

SPECIFICATIONS

	U.S. Measure	Metric Measure
Flow	36 GPM	(136 L/M)
Pressure Range	100 to 1200 PSI	(7 to 85 BAR)
Inlet Pressure Range	Flooded to 70 PSI	(Flooded to 4.9 BAR)
RPM	800 RPM	(800 RPM)
Bore	1.575"	(40 mm)
Stroke	1.890"	(48 mm)
Crankcase Capacity	4.2 Qts.	(4 L)
Maximum Liquid Temperature	160°F	(71°C)
Above 130°F call CAT PUMPS for inlet conditions and elastomer recommendations.		
Inlet Ports (2)	1-1/2" NPTF	(1-1/2 NPTF)
Discharge Ports (2)	1" NPTF	(1" NPTF)
Pulley Mounting	Either Side	(Either Side)
Shaft Diameter	1.378"	(35 mm)
Weight	139 lbs.	(63 kg)
Dimensions (3535)	24.11 x 18.11 x 9.72"	(612.5 x 460 x 247 mm)
Dimensions (3531)	24.13 x 18.11 x 9.72"	(613 x 460 x 247 mm)
Dimensions (3537)	24.06 x 18.11 x 9.72"	(611 x 460 x 247 mm)

HORSEPOWER REQUIREMENTS

FLOW		PRESSURE			RPM	DRIVE
U.S. GPM	L/M	PSI 800	PSI 1000	PSI 1200		
		BAR 55	BAR 70	BAR 85		Consult CAT PUMPS for Pump and Motor Pulley Sizes
36	136	19.8	24.7	29.7	800	
30	114	16.5	20.6	24.7	667	
25	95	13.7	17.2	20.6	556	

DETERMINING THE PUMP R.P.M.	$\frac{\text{Rated G.P.M.}}{\text{Rated R.P.M.}}$	=	$\frac{\text{"Desired" G.P.M.}}{\text{"Desired" R.P.M.}}$
DETERMINING THE REQUIRED H.P.	$\frac{\text{GPM} \times \text{PSI}}{1460}$	=	Electric Brake H. P. Required
DETERMINING MOTOR PULLEY SIZE	$\frac{\text{Motor Pulley O.D.}}{\text{Pump R.P.M.}}$	=	$\frac{\text{Pump Pulley O.D.}}{\text{Motor R.P.M.}}$

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

⚠ WARNING

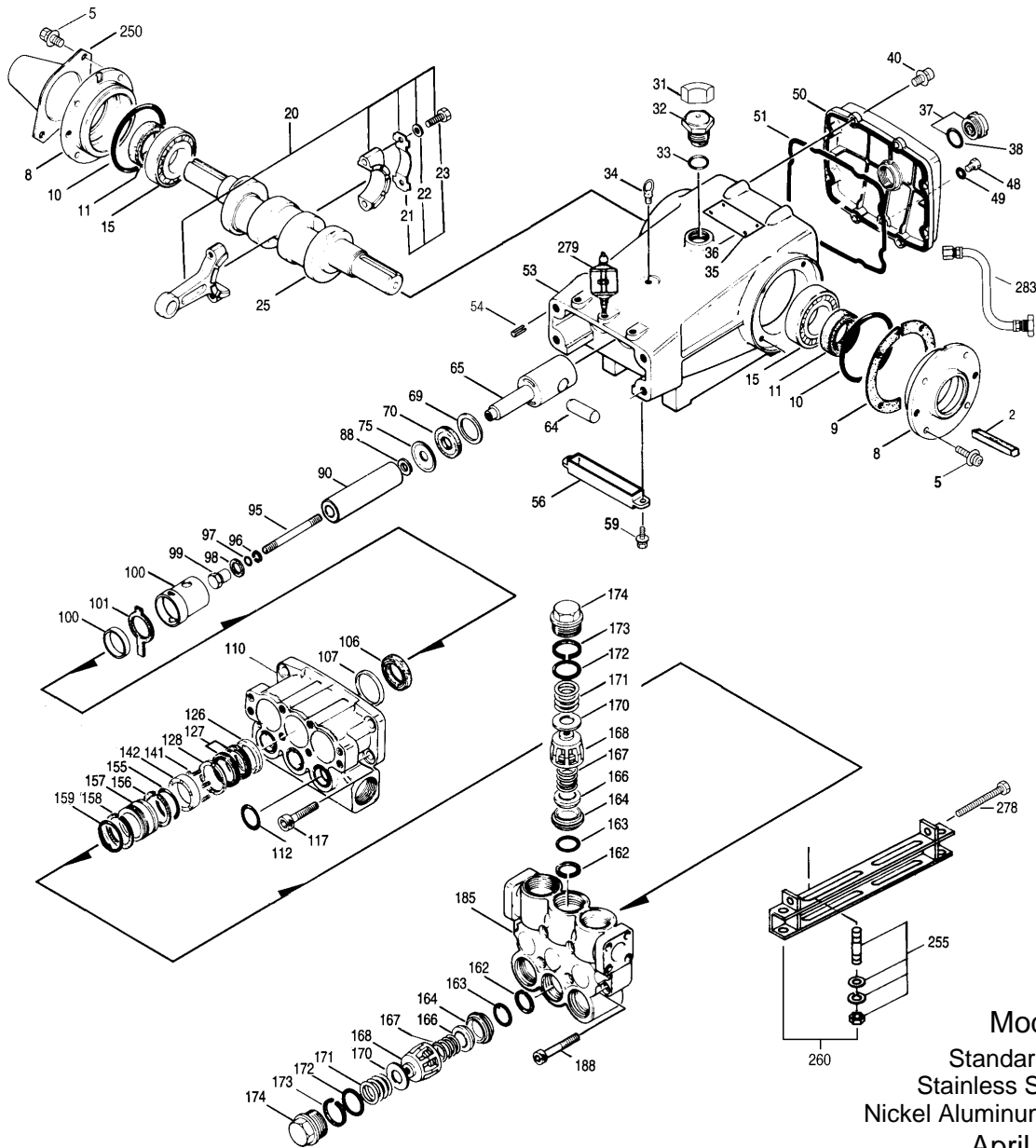
All systems require both a primary pressure regulating device (i.e., regulator, unloader) and a secondary pressure safety relief device (i.e., pop-off valve, safety valve). Failure to install such relief devices could result in personal injury or damage to the pump or to system components. CAT PUMPS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

"Customer confidence is our greatest asset"

PARTS LIST

ITEM	PART NUMBER			DESCRIPTION	QTY			
	3535	MATL	3531	MATL	3537	MATL		
2	30055	STL	30055	STL	30055	STL	Key (M10x6x32)	1
	34021	STL	34021	STL	34021	STL	Key (M10x8x70)	1
5	118824	S	118824	S	118824	S	Screw, Sems HHC (M8x25)	8
8	44542	AL	44542	AL	44542	AL	Cover, Bearing	2
9	44543	FBR	44543	FBR	44543	FBR	Shim, Split Bearing Cover	4
10	12398	NBR	12398	NBR	12398	NBR	O-Ring, Bearing Cover - 70D	2
11	13296	NBR	13296	NBR	13296	NBR	Seal, Oil, Crankshaft	2
15	29326	STL	29326	STL	29326	STL	Bearing, Roller	2
20	121467	TNM	121467	TNM	121467	TNM	Rod, Connecting Assy (Incls: 21,22,23) [10/00]	3
21	44940	STZP	44940	STZP	44940	STZP	Locking Washer (M10)	3
22	12490	STZP	12490	STZP	12490	STZP	Washer, Flat (M10)	6
23	122045	STZP	122045	STZP	122045	STZP	Screw, HH (M10x55)	6
25	29325	FCM	29325	FCM	29325	FCM	Crankshaft, Dual End	1
31	828710	—	828710	—	828710	—	Protector, Oil Cap	1
32	43211	ABS	43211	ABS	43211	ABS	Cap, Oil Filler	1
33	14177	NBR	14177	NBR	14177	NBR	O-Ring, Oil Filler Cap - 70D	1
34	44319	STZP	44319	STZP	44319	STZP	Bolt, Eye (M12x1.75)	1
37	92241	—	92241	—	92241	—	Gauge, Oil, Bubble w/Gasket	1
38	44428	NBR	44428	NBR	44428	NBR	Gasket, Flat, Oil Gauge - 80D	1
40	118824	S	118824	S	118824	S	Screw, Sems HHC (M8x25)	8
48	25625	STCP	25625	STCP	25625	STCP	Plug, Drain (1/4"x19BSP)	1
49	23170	NBR	23170	NBR	23170	NBR	O-Ring, Drain Plug - 70D	1
50	45936	AL	45936	AL	45936	AL	Cover, Crankcase	1
51	16612	NBR	16612	NBR	16612	NBR	O-Ring, Crankcase Cover - 70D	1
53	44559	AL	44559	AL	44559	AL	Crankcase	1
54	27488	S	27488	S	27488	S	Pins, Guide	2
56	27790	PE	27790	PE	27790	PE	Pan, Oil	1
57	—	—	19933	S	19933	S	Washer (M6)	2
58	—	—	15849	S	15849	S	Lockwasher, Split (M6)	2
59	—	—	89618	S	89618	S	Screw, HH (M6x16)	2
59	—	—	—	—	—	—	Screw, Sems HHC (M6x16)	2
59	92538	S	—	—	—	—	Pin, Crosshead	3
64	43864	CM	43864	CM	43864	CM	Rod, Plunger	3
65	45116	SSZZ	45116	SSZZ	45116	SSZZ	Washer, Oil Seal	3
69	29338	STZP	29338	STZP	29338	STZP	Seal, Oil, Crankcase	3
70	100488	NBRS	100488	NBRS	100488	NBRS	Seal, Oil, Crankcase	3
	44739	FPM	44739	FPM	44739	FPM	Seal, Oil, Crankcase	3
75	43865	S	43865	S	43865	S	Slinger, Barrier	3
88	45676	SS	45676	SS	45676	SS	Washer, Keyhole (M16)	3
90	43921	CC	43921	CC	43921	CC	Plunger (M40x145)	3
95	89778	SS	89778	SS	89778	SS	Stud, Plunger Retainer (M10x135)	3
96	20189	PTFE	20189	PTFE	20189	PTFE	Back-up-Ring, Plunger Retainer	3
97	11345	NBR	11345	NBR	11345	NBR	O-Ring, Plunger Retainer - 70D	3
	11375	FPM	11375	FPM	11375	FPM	O-Ring, Plunger Retainer	3
	701490	EPDM	701490	EPDM	701490	EPDM	O-Ring, Plunger Retainer	3
98	44085	SS	44085	SS	44085	SS	Gasket, Retainer	3
99	44084	SS	44084	SS	44084	SS	Retainer, Plunger (M10)	3
100	814279	PVDF	814279	PVDF	814279	PVDF	Retainer, Seal, 2 Pc.	3
101	44112	—	44112	—	44112	—	Wick, Long Tab	3
106	44113	NBR	44113	NBR	44113	NBR	Seal, LPS w/SS-Spg	3
	44740	FPM	44740	FPM	44740	FPM	Seal, LPS w/SS-Spg	3
	46955	EPDM	46955	EPDM	46955	EPDM	Seal, LPS w/S-Spg	3
107	43925	BB	45381	SS	44115	NAB	Spacer, Lo-Pressure Seal	3
110	46392	BBCP	45365	SS	45124	NAB	Manifold, Inlet	1
112	11379	NBR	11379	NBR	11379	NBR	O-Ring, Inlet Manifold - 70D	3
	14183	FPM	14183	FPM	14183	FPM	O-Ring, Inlet Manifold	3
	701491	EPDM	701491	EPDM	701491	EPDM	O-Ring, Inlet Manifold	3
117	44585	S	44585	S	44585	S	Screw, HSH (M14x40)	4
126	43926	BB	48391	D	48391	D	Adapter, Female	3
	—	—	45367	SS	45367	SS	Adapter Female	3
127	44609	STG*	44609	STG*	44609	STG*	V-Packing	6
	44741	SFG	44741	SFG	44741	SFG	V-Packing	6
128	43928	BB	45368	SS	45368	SS	Adapter, Male	3
141	45113	SS	45113	SS	45113	SS	Springs, Coil	6/18
142	46352	BB	45382	SS	45382	SS	Spacer, w/Coil Springs	3
155	18697	NBR	18697	NBR	18697	NBR	O-Ring, V-Packing-Spacer - 70D	3
	20137	FPM	20137	FPM	20137	FPM	O-Ring, V-Packing-Spacer - 70D	3
	701492	EPDM	701492	EPDM	701492	EPDM	O-Ring, V-Packing-Spacer	3
156	48362	D	48362	D	48362	D	Back-up-Ring, Spacer	3
157	45369	SS	45369	SS	45369	SS	Spacer, V-Packing	3
158	48362	D	48362	D	48362	D	Back-up-Ring, V-Packing-Spacer	3
159	18697	NBR	18697	NBR	18697	NBR	O-Ring, V-Packing-Spacer - 70D	3
	20137	FPM	20137	FPM	20137	FPM	O-Ring, V-Packing-Spacer - 70D	3
	701492	EPDM	701492	EPDM	701492	EPDM	O-Ring, V-Packing-Spacer	3
162	48363	D	48363	D	48363	D	Back-up-Ring, Valve Seat	6
163	26142	NBR	26142	NBR	26142	NBR	O-Ring, Seat	6
	14330	FPM	14330	FPM	14330	FPM	O-Ring, Seat	6
	701493	EPDM	701493	EPDM	701493	EPDM	O-Ring, Seat	6
164	44727	S	44612	SS	44612	SS	Seat, Stepped	6
166	43932	S	44108	SS	44108	SS	Valve	6
167	44109	SS	44109	SS	44109	SS	Spring	6
168	44728	PVDF	44728	PVDF	44728	PVDF	Retainer, Spring	6
170	44729	SS	44729	SS	44729	SS	Washer, Spring Retainer	6
171	44644	SS	44644	SS	44644	SS	Coil Spring (70kg), Valve Plug	6
172	89827	NBR	89827	NBR	89827	NBR	O-Ring, Valve Plug - 90D	6
	11747	FPM	11747	FPM	11747	FPM	O-Ring, Valve Plug - 90D	6
	701494	EPDM	701494	EPDM	701494	EPDM	O-Ring, Valve Plug - 70D	6
173	48364	D	48364	D	48364	D	Back-up-Ring, Valve Plug	6
174	46444	FBB	48419	SSNP	44643	NAB	Plug, Valve	6
185	46394	BBCP	46326	SS	46335	NAB	Manifold, Discharge	1
188	89981	S	89981	S	89981	S	Screw, HSH (M12x70)	8
250	44516	NY	44516	NY	44516	NY	Protector, Shaft w/2 89283 screws (Included with pump)	1

EXPLODED VIEW



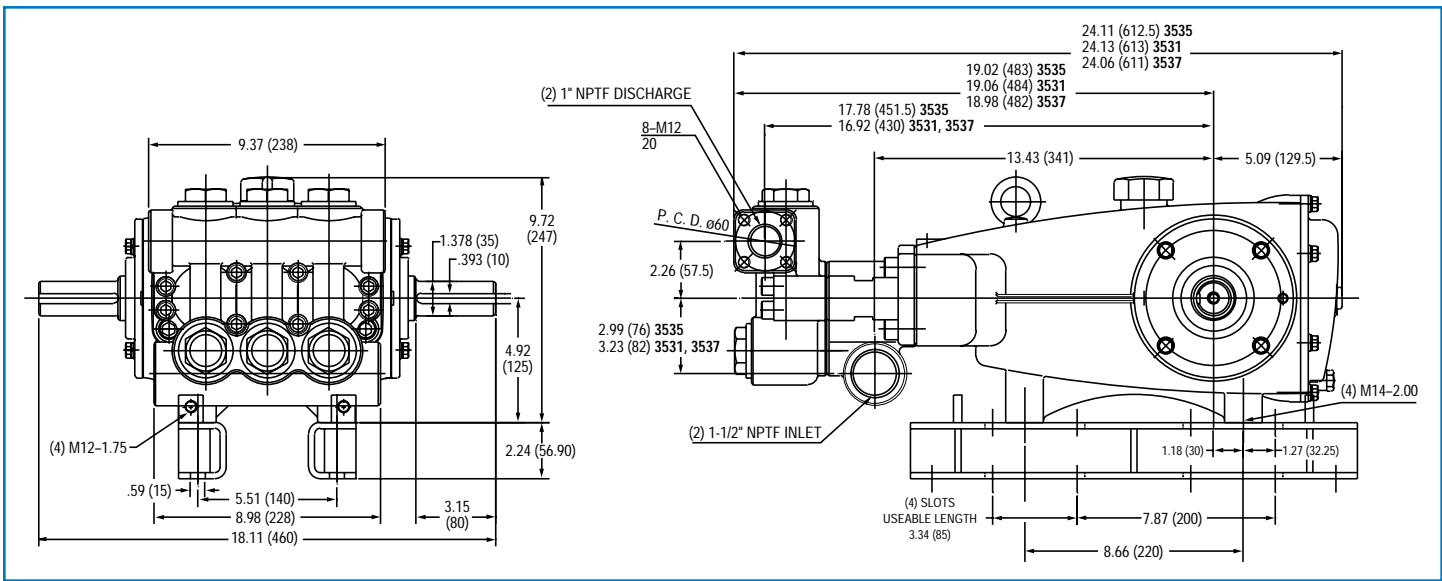
Models
 Standard - 3535
 Stainless Steel - 3531
 Nickel Aluminum Bronze - 3537
 April 2004

	3535	MATL	3531	MATL	3537	MATL		
255	34039	SS	34039	SS	34039	SS	Kit, Stud Mount	1
260	92674	STZP	92674	STZP	92674	STZP	Mounting, Box Assy	1
275	—	—	—	—	—	—	Pulley, Hub & Key <i>[See Drive Packages, Tech Bulletin 03]</i>	1
278	80540	ZP	80540	ZP	80540	ZP	Screw, HH (M12x100) (Rail Adjusting Screw)	1
279	30278	STZP	30278	STZP	30278	STZP	Oiler (1 oz.)	3
281	30967	—	30967	—	30967	—	Glass, Oiler	3
282	10069	NBR	10069	NBR	10069	NBR	Gasket, Oiler	3
283	34334	—	34334	—	34334	—	Kit, Oil Drain	1
290	6104	—	6104	—	6104	—	Gasket, Liquid (1 oz.)	1
299	814821	BBCP	814544	SS	814522	NAB	Complete Head	1
300	31040	NBR*	31040	NBR*	31040	NBR*	Kit, Seal (Incls: 97,106,112,127,155,156,158,159)	1
	33055	FPM	33055	FPM	33055	FPM	Kit, Seal (Incls: 97,106,112,127,155,156,158,159)	1
	◆ 33262	EPDM*	◆ 33262	EPDM*	◆ 33262	EPDM*	Kit, Seal (Incls: 97,106,112,127,155,156,158,159)	1
310	34235	NBR	34017	NBR	34017	NBR	Kit, Valve (Incls: 162,163,164,166,167,168,170,172,173)	2
	31955	FPM	31955	FPM	31955	FPM	Kit, Valve (Incls: 162,163,164,166,167,168,170,172,173)	2
	◆ 31952	EPDM	◆ 31952	EPDM	◆ 31952	EPDM	Kit, Valve (Incls: 162,163,164,166,167,168,170,172,173)	2
—	819000	F	819000	F	819000	F	Assy, Crankcase, Cast Iron Conversion	1
—	714500	SS	714500	SS	714500	SS	C.A.T. (For R.O. or Industrial Applications)	1
—	714506	SS	714506	SS	714506	SS	Adapter (2 per C.A.T.) (See Data Sheet for complete selection)	2
—	6565.3	—	6565.3	—	6565.3	—	Video, Plunger Pump Service - Section 3	1
—	6100	—	6100	—	6100	—	Oil, Case (12 Bottles) ISO 68 Multi-viscosity Hydraulic (Fill to specified crankcase capacity prior to start-up)	1

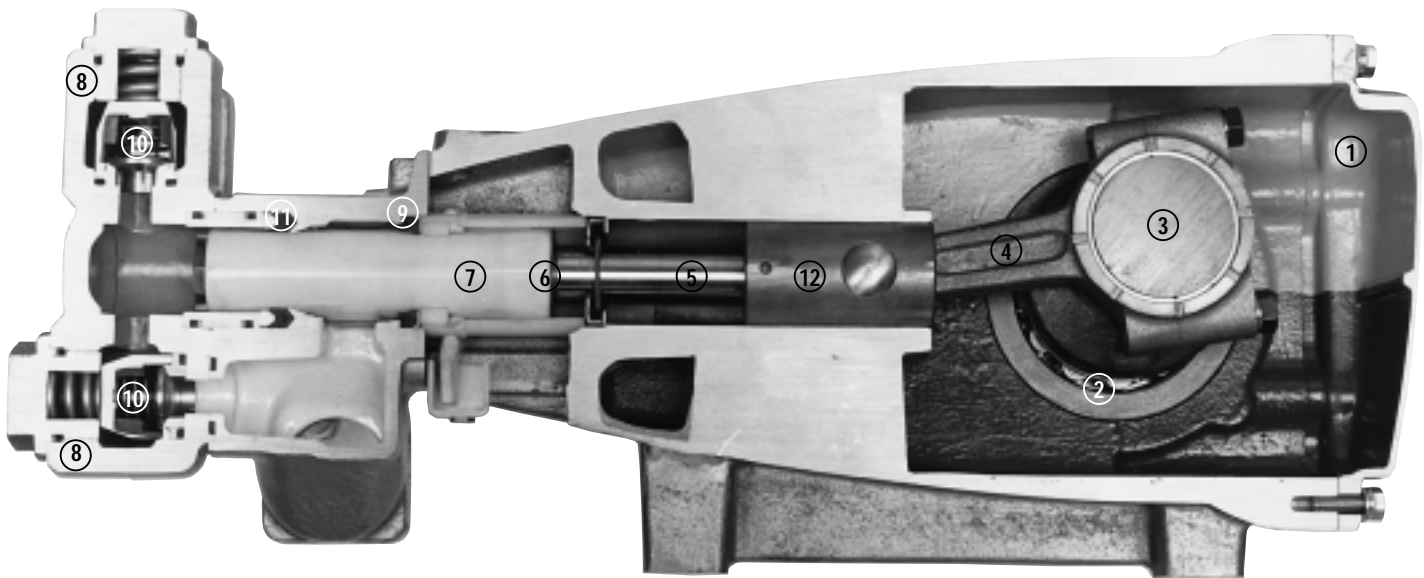
Bold print part numbers are unique to a particular pump model. Italics are optional items. ◆ Silicone oil/grease required. [] Date of latest production change.

* 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 03, 024, 035, 036, 040, 041, 043, 050, 052, 053, 069, 074, 077 and 083 for additional information. † Production Parts NAB or BB, Replacement Parts are 316 Stainless Steel.

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



Models 3535, 3531, 3537



- 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 a high tensile strength forged brass, 316 stainless steel or 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 providing 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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