



## 7 Frame Plunger Pump

### Models

530  
550

### FEATURES

#### Superior Design

- Triplex plunger design gives smoother liquid flow.
- Hi-Pressure Seals or 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

- Precision design 304 stainless steel valves and seats are hardened and polished for ultimate seating and extended valve life.
- Forged brass manifold is strong and corrosion resistant.
- Special concentric, high-density, polished, solid ceramic plungers provide a true wear surface and extended seal life.
- Specially formulated, CAT PUMP exclusive, Hi-Pressure Seals or 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 capacity mean 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 530

Flow .....	5.0 GPM	(19 L/M)
Pressure Range.....	100 to 2500 PSI	(7 to 175 BAR)
RPM .....	<b>1100 RPM</b>	<b>(1100 RPM)</b>
Bore.....	<b>0.708"</b>	<b>(18 mm)</b>
Stroke.....	<b>0.945"</b>	<b>(24 mm)</b>

#### MODEL 550

Flow .....	5.0 GPM	(19 L/M)
Pressure Range.....	100 to 3000 PSI	(7 to 210 BAR)
RPM .....	<b>1415 RPM</b>	<b>(1415 RPM)</b>
Bore.....	<b>0.630"</b>	<b>(16 mm)</b>
Stroke.....	<b>0.945"</b>	<b>(24 mm)</b>

#### COMMON SPECIFICATIONS

Inlet Pressure Range.....	Flooded to 60 PSI	(Flooded to 4 BAR)
Crankcase Capacity .....	25 oz.	(0.75 L)
Maximum Liquid Temperature .....	160°F	(71°C)
<small>For temperatures above 130°F call CAT PUMPS for inlet conditions and elastomer recommendations.</small>		
Inlet Ports (2) .....	1/2" NPTF	(1/2" NPTF)
Discharge Ports (2).....	3/8" NPTF	(3/8" NPTF)
Shaft Diameter .....	0.945"	(24 mm)
Weight.....	25.5 lbs.	(11.5 kg)
Dimensions.....	13.6 x 9.61 x 6.41"	(346 x 244 x 163 mm)

### ELECTRIC HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE				MOTOR PULLEY SIZE	
			PSI 1800	PSI 2150	PSI 2500	PSI 3000	Using 1725 RPM Motor & Std. 10" Pulley O.D.	
	U.S. GPM	L/M	BAR 125	BAR 150	BAR 175	BAR 210	RPM	Pulley O.D.
530	5.0	19.0	6.2	7.4	8.6	N/A	1100	6.3
	4.5	17.0	5.6	6.6	7.7	N/A	990	5.6
	4.0	15.0	5.0	5.9	6.9	N/A	880	5.0
550	5.0	19.0	6.2	7.4	8.6	10.3	1415	8.0
	4.0	15.0	5.0	5.9	6.9	8.3	1130	6.4
	3.0	11.4	3.7	4.4	5.2	6.2	850	5.0

**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.**  $\frac{\text{GPM x PSI}}{1460}$  = 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, additional technical information and **pump warranty**.

*"Customer confidence is our greatest asset"*

# PARTS LIST

ITEM	PART NUMBER		DESCRIPTION	QTY
	530	550		
	MATL	MATL		
2	30067	30067	Key (M8x7.5x25)	1
5	92519	92519	Screw, HHC Sems (M6x16)	8
8	43223	43223	AL Cover, Bearing	2
9	815280	815280	FBR Shim, Bearing Cover (2-pc)	1
10	12393	12393	NBR O-Ring, Bearing Cover	2
11	43222	43222	NBR Seal, Oil	2
15	43221	43221	STL Bearing, Roller	2
20	48863	48863	TNM Rod, Assy, Connecting [6/02]	3
25	43220	43220	FCM Crankshaft, Dual End	1
31	828710	828710	— <i>Protector, Oil Cap w/Gasket</i>	1
32	43211	43211	ABS Cap, Oil Filler	1
33	14177	14177	NBR O-Ring, Filler Cap - 70D	1
37	92241	92241	— Gauge, Oil, Bubble w/Gasket - 80D	1
38	44428	44428	NBR Gasket, Flat, Oil Gauge - 80D	1
40	92520	92520	STZP Screw, HHC Sems (M6x20)	4
48	25625	25625	STCP Plug, Drain (1/4"x19BSP)	1
49	23170	23170	NBR O-Ring, Drain Plug - 70D	1
50	43217	43217	AL Cover, Rear	1
51	44836	44836	NBR O-Ring, Rear Cover - 70D	1
53	45056	45056	AL Crankcase (M10)	1
56	43240	43240	POP Pan, Oil	1
64	43237	43237	CM Pin, Crosshead	3
65	43229	43229	ZZCP Rod, Plunger	3
69	43227	43227	STZP Washer, Oil Seal	3
70	43228	43228	NBR Seal, Oil, Crankcase	3
75	43328	43328	S Slinger, Barrier	3
88	45697	45697	S Washer, Keyhole (M18)	3
90	<b>43232</b>	<b>43311</b>	<b>CC</b> Plunger (M18x77 and M16x77)	3
96	43235	43235	PTFE Back-up-Ring, Plunger Retainer	3
97	17399	17399	NBR O-Ring, Plunger Retainer - 80D	3
	14160	14160	FPM <i>O-Ring, Plunger Retainer - 70D</i>	3
98	45891	45891	CU Gasket, Plunger Retainer	3
99	104360	104360	S Retainer, Plunger w/Stud	3
100	45686	45686	PVDF Retainer, Seal, Rear	3
	45687	45687	PVDF Retainer, Seal, Adapter, Front	3
101	<b>43239</b>	<b>43313</b>	— Wick, Long Tab	3
106	<b>43243</b>	<b>43316</b>	<b>NBR</b> Seal, LPS w/S-Spg	3
	<b>44926</b>	—	<b>FPM</b> <i>Seal, LPS w/SS-Spg</i>	3
	—	<b>106660</b>	<b>FPM</b> <i>Seal, LPS w/S-Spg</i>	3
120	<b>45683</b>	<b>45684</b>	<b>BB</b> Case, Seal	3
121	20285	20285	NBR O-Ring, Seal Case - 70D	3
	11693	11693	FPM <i>O-Ring, Seal Case</i>	3
125	<b>43245</b>	—	<b>SNG</b> Seal, HPS w/S	3
	<b>44925</b>	—	<b>FPM</b> <i>Seal, HPS w/SS</i>	3
126	—	<b>43320</b>	<b>BB</b> Adapter, Female	3
127	—	<b>43319</b>	<b>PTFE</b> V-Packing	6
	—	<b>46287</b>	<b>HT</b> V-Packing	6
128	—	<b>43318</b>	<b>BB</b> Adapter, Male	3
139	22179	22179	BBCP Plug (1/2" NPT)	1
162	43248	43248	PTFE Back-up-Ring, Seat	6
163	43249	43249	NBR O-Ring, Seat - 80D	6
	44383	44383	FPM <i>O-Ring, Seat - 70D</i>	6
164	43722	43722	S Seat, Q.V.	6
	<b>43825</b>	—	<b>S</b> <i>Seat, F.V.</i>	6
166	43721	43721	S Valve, Q.V.	6
	<b>43824</b>	—	<b>S</b> <i>Valve, F.V.</i>	6
167	43751	43751	S Spring, Q.V.	6
	<b>43823</b>	—	<b>S</b> <i>Spring, F.V.</i>	6
168	44564	44564	PVDF Retainer, Spring	6
172	17617	17617	NBR O-Ring, Valve Plug - 90D	6
	11691	11691	FPM <i>O-Ring, Valve Plug - 90D</i>	6
174	43851	43851	BBCP Plug, Valve	6
185	<b>45417</b>	<b>45547</b>	<b>BBCP</b> Head, Manifold (M10F)	1
187	46868	46868	S Stud, Manifold (M10x35)	4
194	45550	45550	STZP Nut, Flanged (M10)	4
196	43633	43633	BB Plug, Discharge (3/8" NPT)	1
250	43256	43256	STCP <i>Protector, Shaft</i>	1
255	30243	30243	STZP <i>Kit, Direct Mounting</i>	1
260	30645	30645	STZP <i>Rail, Angle, Assy A-U.S. (Incls: 30635 [2.09"], 31129, 990777, 30910, 30920)</i>	1
	30611	30611	STZP <i>Rail, Angle, Assy B-U.S. (Incls: 28499 [2.95"], 30900, 30910, 30920)</i>	1
265	30660	30660	— <i>Kit, Mounting (Incls: 30645, 30206, 33000, 30067, 43256)</i>	1
269	30206	30206	F <i>Pulley (10") [See Drive Packages, Tech Bulletin 003]</i>	1
274	33000	33000	STL <i>Hub "H", M24 (Keyway M8) [See Drive Packages, Tech Bulletin 003]</i>	1
283	34334	34334	— <i>Kit, Oil Drain</i>	1
298	34628	34628	STZP <i>Clutch Assy, Single Groove, 24mm, 12VDC</i>	1
	34630	34630	STZP <i>Clutch Assy, Dual Groove, 24mm, 12VDC</i>	1
	34959	34959	STZP <i>Clutch Assy, Eight Groove Poly L, 24mm, 12VDC</i>	1
299	<b>812183</b>	<b>812184</b>	<b>BBCP</b> <i>Head, Complete</i>	1
300	<b>30488</b>	<b>30610</b>	<b>NBR</b> <i>Kit, Seal (Incls: 97, 101, 106, 121, 125 or 127)</i>	1
	—	<b>31610</b>	<b>HT</b> <i>Kit, Seal, HT (Incls: 97, 101, 106, 121, 125)</i>	1
310	30820	30820	NBR <i>Kit, Valve , Q.V. (Incls: 162-164, 166, 167, 168, 172)</i>	2
	31820	31820	NBR <i>Kit, Valve , F.V. (Incls: 162-164, 166, 167, 168, 172)</i>	2
350	30696	30696	STZP <i>Plier, Reverse</i>	1
351	43257	43257	STZP <i>Tool, Seal Case Removal</i>	1
352	44050	44050	STZP <i>Tool, Oil Gauge Removal</i>	1
—	6575	6575	— <i>Plunger Pump Service DVD</i>	1
—	6107	6107	— <i>Oil, Bottle (21 oz.) ISO 68 Multi-Viscosity Hydraulic (Fill to specified crankcase capacity prior to start-up)</i>	1

**Bold print part numbers are unique to a particular pump model. Italics are optional items. [ ]** Date of latest production change.

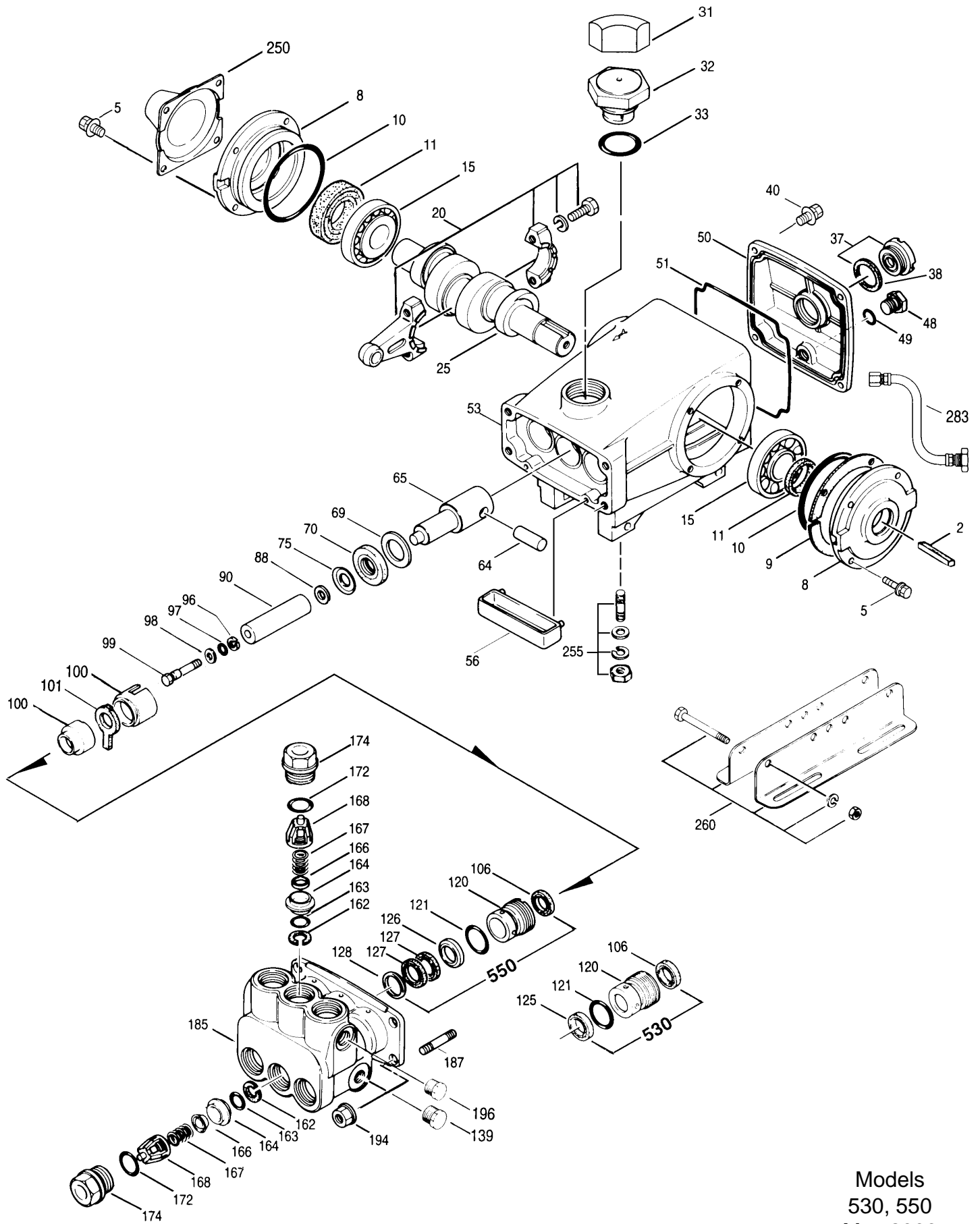
Refer to Tech Bulletins 002, 003, 008, 024, 027, 035, 036, 043, 045, 051, 053, 054, 067, 074, 077 and 083 for additional information.

MATERIAL CODES (Not Part of Part Number): AL=Aluminum ABS=ABS Plastic BB=Brass BBCP=Brass/Chrome Plated CC=Ceramic CM=Chrome-Moly

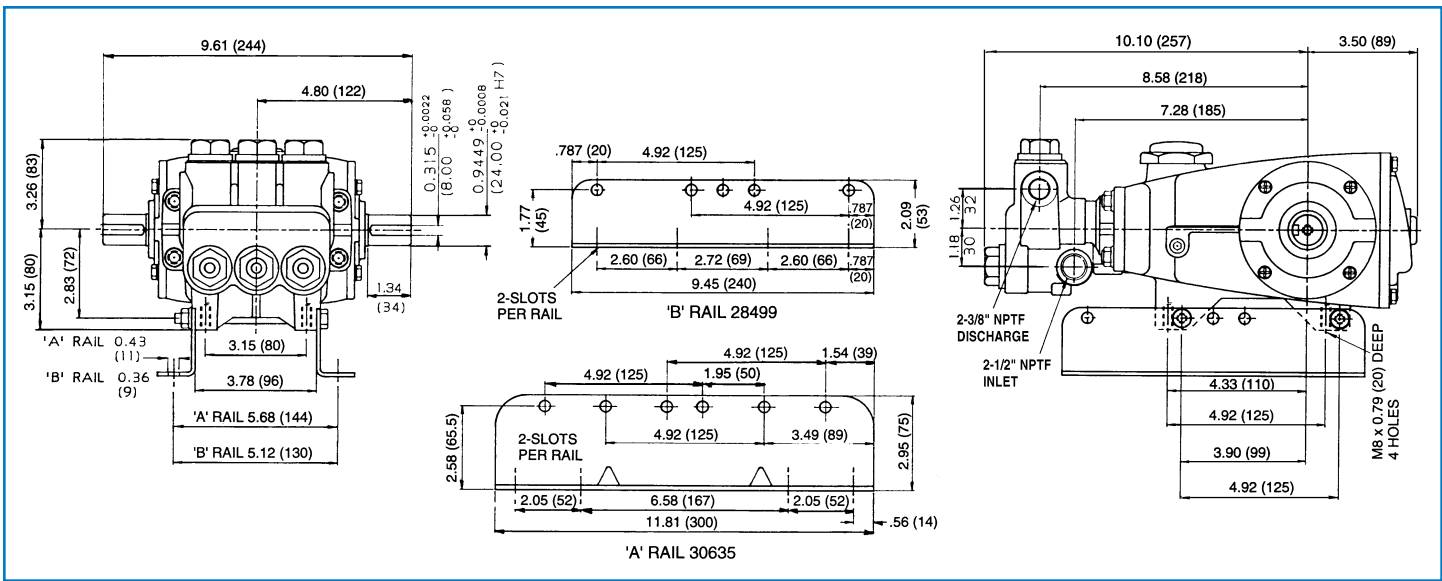
CU=Copper F=Cast Iron FBR=Forged Chrome-moly FPM=Fluorocarbon HT=Hi-Temp NBR=Medium Nitrile (Buna-N)

POP=Polypropylene PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS SNG=Special Blend (Buna) STCP=Steel/Chrome Plated STL=Steel  
STZP=Steel/Zinc Plated TNM=Special High Strength ZZCP=Zamak/Chrome Plated

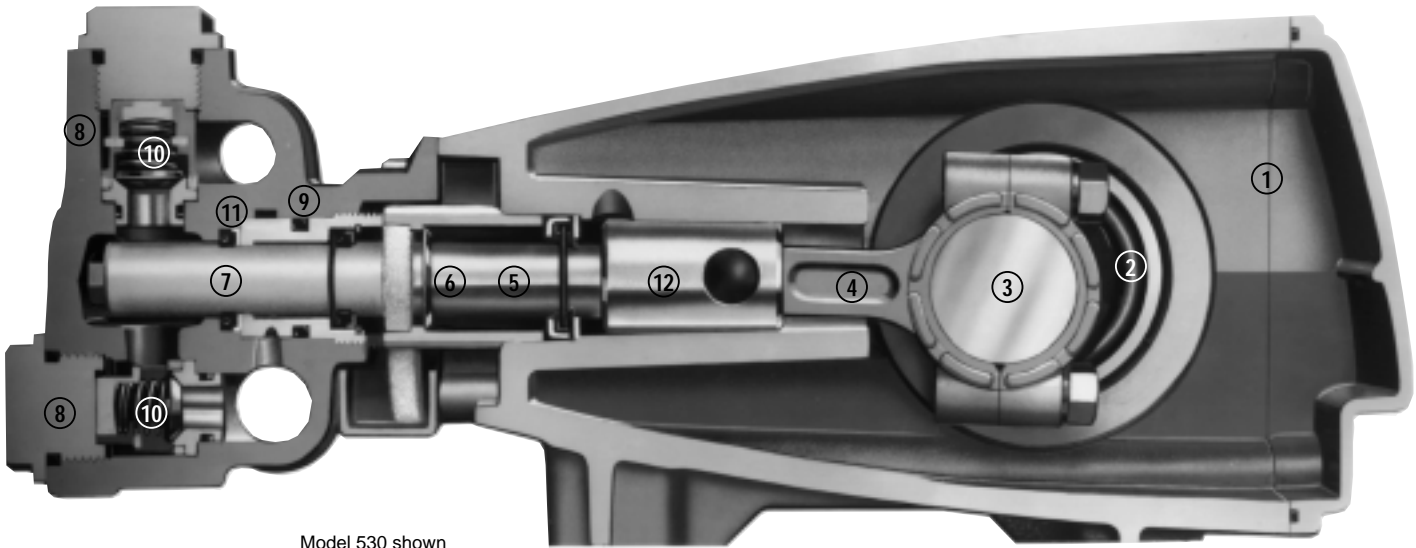
# EXPLODED VIEW



Models  
530, 550  
May 2006



Models 530, 550



Model 530 shown

- 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 high strength **connecting rods** are for superior strength and bearing quality.
- 5 Special high strength **plunger rods** with Zamak 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, solid ceramic **plungers** provide a true wear surface and extended seal life.
- 8 **Manifolds** are a high tensile strength forged brass 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, ultimate seating and extended life.
- 11 Specially formulated, CAT PUMP exclusive, **Hi-Pressure Seals/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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