



## 3 Frame Plunger Pump

Models **230**  
**240, 270**

### FEATURES

#### Superior Design

- Triplex plunger design gives smoother fluid flow.
- Hi-Pressure Seals are completely lubricated and cooled by the fluid 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.
- Optional Belt Drive or Motorized versions offer system flexibility.

#### Quality Materials

- All stainless steel valves are heat treated and seats are roller burnished for a positive seal and extended valve life.
- Brass manifold is 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, Hi-Pressure Seals 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.
- Preset packings mean no packing gland adjustment is necessary, reducing maintenance costs.

**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.**  $\frac{\text{GPM} \times \text{PSI}}{1460} = \text{Electric Brake H. P. Required}$

**DETERMINING MOTOR PULLEY SIZE**  $\frac{\text{Motor Pulley O.D.}}{\text{Pump R.P.M.}} = \frac{\text{Pump Pulley O.D.}}{\text{Motor R.P.M.}}$

Note: Consult engine manufacturer when using gas or diesel engine. Refer to pump Service Manual for important Inlet Condition Check-List, Start-up Procedure, Tech Bulletins and Pump Maintenance information.

### SPECIFICATIONS

MODEL 230	U.S. Measure	Metric Measure
Flow .....	2.3 GPM	(8.7 L/M)
Pressure Range .....	100 to 1500 PSI	(7 to 105 BAR)
RPM .....	1725 RPM	(1725 RPM)
Stroke .....	0.276"	(7 mm)

MODEL 240	U.S. Measure	Metric Measure
Flow .....	3.6 GPM	(13.6 L/M)
Pressure Range .....	100 to 1200 PSI	(7 to 85 BAR)
RPM .....	1725 RPM	(1725 RPM)
Stroke .....	0.433"	(11 mm)

MODEL 270 Standard	U.S. Measure	Metric Measure
Flow .....	3.5 GPM	(13.2 L/M)
Pressure Range .....	100 to 1500 PSI	(7 to 105 BAR)
RPM .....	1437 RPM	(1437 RPM)
Stroke .....	0.512"	(13 mm)

MODEL 270 Alternate	U.S. Measure	Metric Measure
Flow .....	★ 4.2 GPM	(16 L/M)
Pressure Range .....	100 to 1000 PSI	(7 to 70 BAR)
RPM .....	1725 RPM	(1725 RPM)
Stroke .....	0.512"	(13 mm)

★ This specification for intermittent, freshwater duty.

### COMMON SPECIFICATIONS

Bore .....	0.709"	(18 mm)
Max. Inlet Pressure .....	Flooded to 60 PSI	(Flooded to 4 BAR)
Crankcase Capacity .....	10 oz.	(3 L)
Maximum Fluid Temperature .....	160°F	(71°C)
Inlet Ports (2) .....	1/2" NPT	(1/2" NPT)
Discharge Ports (2) .....	3/8" NPT	(3/8" NPT)
Pulley Mounting .....	Either Side	(Either Side)
Shaft Diameter .....	0.650"	(16.5 mm)
Weight .....	14.4 lbs.	(6.5 kg)
Dimensions .....	10.24" x 8.79" x 5.35"	(260 x 223 x 136 mm)

### HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE			MOTOR PULLEY SIZE	
	U.S. GPM	L/M	PSI 1000	PSI 1200	PSI 1500	Using 1725 RPM Motor & Std. 5.0" Pump Pulley O.D.	
			BAR 70	BAR 85	BAR 105	RPM	Pulley O.D.
270	4.0	15.0	2.8	N/A	N/A	1643	4.7
	3.5	13.2	2.4	2.9	3.6	1437	4.1
	3.0	11.4	2.1	2.5	3.1	1232	3.5
230	2.3	8.7	1.6	1.9	2.4	1725	Direct Drive
240	3.6	13.6	2.5	3.0	N/A	1725	Direct Drive
270	4.2	16	2.8	N/A	N/A	1725	Direct Drive

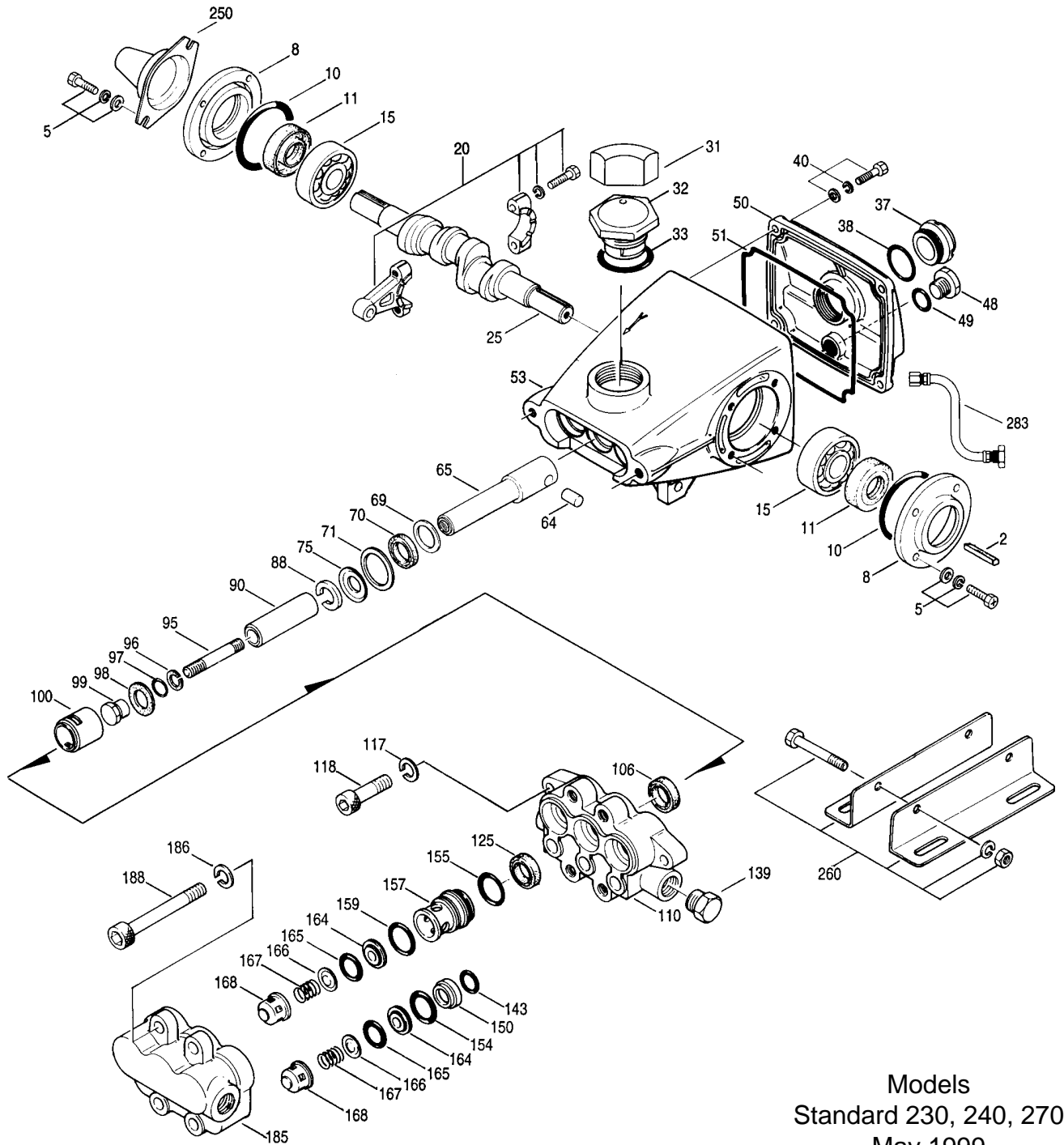
See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 03.

*"Customer confidence is our greatest asset"*

# PARTS LIST

ITEM	PART NUMBER			DESCRIPTION	QTY
	230 MATL	240 MATL	270 MATL		
2	30047 STL	30047 STL	30047 STL	Key (M5x5x24)	1
5	92519 STZP	92519 STZP	92519 STZP	Screw, Sems Comb. Head (M6x16)	8
8	27950 AL	27950 AL	27950 AL	Cover, Bearing	2
10	26536 NBR	26536 NBR	26536 NBR	O-Ring, Oil Seal Case	2
11	24159 NBR	24159 NBR	24159 NBR	Seal, Oil	1-2
15	14487 STL	14487 STL	14487 STL	Bearing, Ball	2
20	101799 ZZ	101799 ZZ	101799 ZZ	Rod, Connecting Assembly	3
25	44917 FCM	44193 FCM	43897 FCM	Crankshaft, Dual End	1
31	828710	828710	828710	Protector, Oil Cap	1
32	43211	43211	43211	Cap, Oil Filler	1
33	14177 NBR	14177 NBR	14177 NBR	O-Ring, Oil Filler Cap	1
37	43987	43987	43987	Gauge, Oil, Bubble	1
38	44428 NBR	44428 NBR	44428 NBR	Gasket, Flat, Oil Gauge	1
40	92520 STZP	92520 STZP	92520 STZP	Screw, Sems Comb. Head (M6x20)	6
48	25625 STCP	25625 STCP	25625 STCP	Plug, Drain (1/4"x11)	1
49	23170 NBR	23170 NBR	23170 NBR	O-Ring, Drain Plug	1
50	43339 AL	43339 AL	43339 AL	Cover, Crankcase	1
51	43340 NBR	43340 NBR	43340 NBR	O-Ring, Crankcase Cover	1
53	44657 AL	44657 AL	44657 AL	Crankcase (4 Screw, Large Cap)	1
64	16948 S	16948 S	16948 S	Pin, Rist	3
65	45114 SSZZ	45114 SSZZ	45114 SSZZ	Rod, Plunger	3
69	20017 STZP	20017 STZP	20017 STZP	Washer, Oil Seal	3
70	25301 NBR	25301 NBR	25301 NBR	Seal, Oil, Crankcase	3
71	26854 S	26854 S	26854 S	Washer, Oil Seal	3
75	43900 S	43900 S	43900 S	Slinger, Barrier	3
88	45697 S	45697 S	45697 S	Washer, Keyhole (M18)	3
90	43901 CC	43901 CC	43901 CC	Plunger (M43)	3
95	89652 SS	89652 SS	89652 SS	Stud, Plunger Retainer (M6x43)	3
96	43235 PTFE	43235 PTFE	43235 PTFE	Back-up-Ring, Plunger Retainer	3
97	17399 NBR	17399 NBR	17399 NBR	O-Ring, Plunger Retainer - 80	3
	14160 FPM	14160 FPM	14160 FPM	O-Ring, Plunger Retainer	3
	◆ 46204 EPDM	◆ 46204 EPDM	◆ 46204 EPDM	O-Ring, Plunger Retainer	3
98	45891 CU	45891 CU	45891 CU	Gasket, Plunger Retainer (M12.5)	3
99	46504 S	46504 S	46504 S	Retainer, Plunger	3
100	28597 PVDF	28597 PVDF	28597 PVDF	Retainer, Seal	3
106	43243 NBR	43243 NBR	43243 NBR	Seal, LPS w/S-Spg	3
	44926 FPM	44926 FPM	44926 FPM	Seal, LPS w/S-Spg	3
	◆ 46651 EPDM	◆ 46651 EPDM	◆ 46651 EPDM	Seal, LPS w/S-Spg	3
110	43902 BB	43902 BB	43902 BB	Manifold, Inlet	1
117	12503 STZP	12503 STZP	12503 STZP	Lockwasher, Split (M10)	2
118	87931 STZP	87931 STZP	87931 STZP	Screw, HSH (M10x35)	2
125	43245 NBR	43245 NBR	43245 NBR	Seal, HPS w/S	3
	44925 FPM	44925 FPM	44925 FPM	Seal, HPS w/SS	3
	46652 EPDM	46652 EPDM	46652 EPDM	Seal, HPS wS <b>ALTERNATE White</b>	
	46652 HT	46652 HT	46652 HT	Seal, HPS w/S	3
139	22179 BBCP	22179 BBCP	22179 BBCP	Plug, Inlet (1/2")	1
143	17547 NBR	17547 NBR	17547 NBR	O-Ring, Adapter, Inner - 85	3
	11685 FPM	11685 FPM	11685 FPM	O-Ring, Adapter, Inner	3
	◆ 46648 EPDM	◆ 46648 EPDM	◆ 46648 EPDM	O-Ring, Adapter, Inner	3
150	43904 BB	43904 BB	43904 BB	Adapter, Inlet Valve	3
154	43893 NBR	43893 NBR	43893 NBR	O-Ring, Adapter, Outer - 80	3
	44927 FPM	44927 FPM	44927 FPM	O-Ring, Adapter, Outer	3
	◆ 46649 EPDM	◆ 46649 EPDM	◆ 46649 EPDM	O-Ring, Adapter, Outer	3
155	26089 NBR	26089 NBR	26089 NBR	O-Ring, Spacer - 80	3
	11377 FPM	11377 FPM	11377 FPM	O-Ring, Spacer	3
	◆ 46647 EPDM	◆ 46647 EPDM	◆ 46647 EPDM	O-Ring, Spacer - 80	3
157	43905 BB	43905 BB	43905 BB	Spacer, Discharge Valve	3
159	26089 NBR	26089 NBR	26089 NBR	O-Ring, Spacer - 80	3
	11377 FPM	11377 FPM	11377 FPM	O-Ring, Spacer	3
	◆ 46647 EPDM	◆ 46647 EPDM	◆ 46647 EPDM	O-Ring, Spacer - 80	3
164	44002 S	44002 S	44002 S	Seat	6
165	44001 NBR	44001 NBR	44001 NBR	O-Ring, Valve Seat - 80	6
	44928 FPM	44928 FPM	44928 FPM	O-Ring, Valve Seat	6
	◆ 46650 EPDM	◆ 46650 EPDM	◆ 46650 EPDM	O-Ring, Valve Seat	6
166	43723 S	43723 S	43723 S	Valve	6
167	43750 S	43750 S	43750 S	Spring	6
168	43907 S	43907 S	43907 S	Retainer, Spring	6
185	43903 BB	43903 BB	43903 BB	Manifold, Discharge	1
186	12503 STZP	12503 STZP	12503 STZP	Lockwasher (M10)	3/3
188	87933 STZP	87933 STZP	87933 STZP	Screw, HSH (M10x55)	4
250	25130 STCP	25130 STCP	25130 STCP	Protector, Shaft	1
260	30612 STZP	30612 STZP	30612 STZP	Rail, Angle Assy (Incls: 26246, 30901, 30910, 30920)	1
265	30651	30651	30651	Kit, Mounting (Incls: 30612, 30032, 30047, 25130)	1
270	30246 STL	30246 STL	30246 STL	Assy, Pulley (Incls: 30032, 30047)	1
				<b>[See complete Drive Packages, Tech Bulletin 03]</b>	
277	34121 AL	34121 AL	34121 AL	Bell Housing Assy (56C-145FR, 1.5 HP)	1
	34126 AL	34126 AL	34126 AL	Bell Housing Assy (182TC-1284TC, 3.0 HP)	1
278	34394 AL	34394 AL	34394 AL	Flexible Coupling Assy (M16.5 to 5/8")	1
	34396 AL	34396 AL	34396 AL	Flexible Coupling Assy (M16.5 to 1-1/8")	1

# EXPLODED VIEW

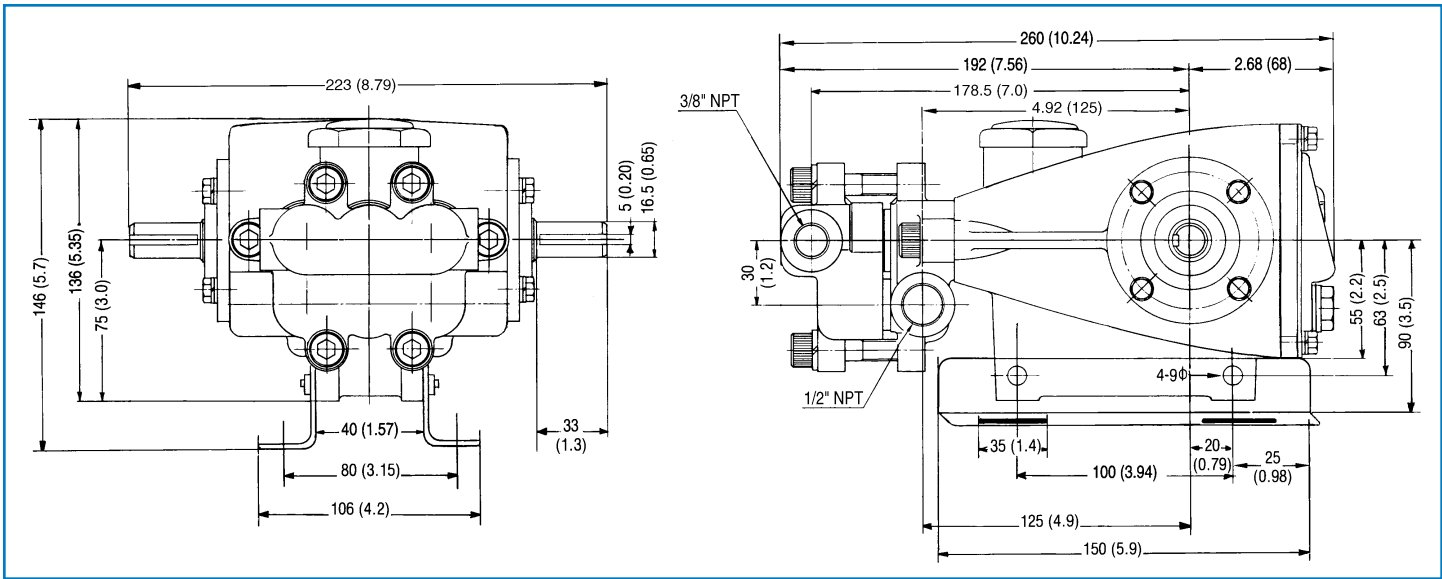


Models  
Standard 230, 240, 270  
May 1999

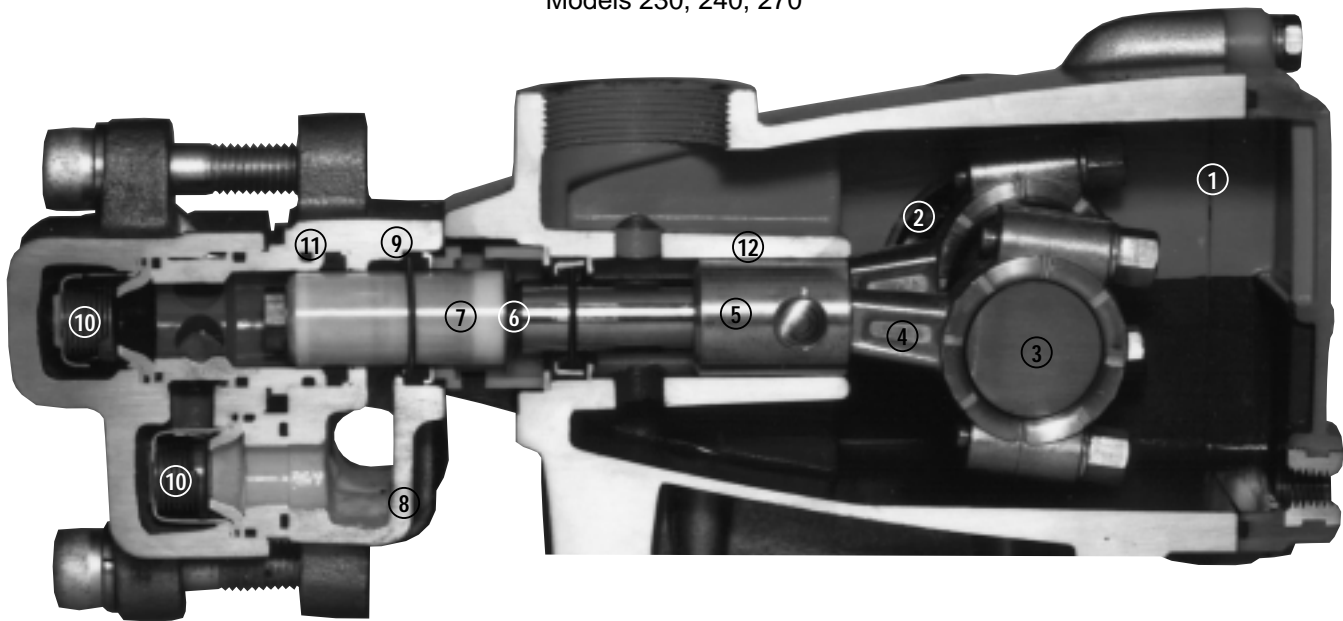
	230 MATL	240 MATL	270 MATL		
● 283	34334	34334	34334	Kit, Oil Drain	1 ●
● 299	814611 BB	814611 BB	814611 BB	Head, Complete	1 ●
300	30914 NBR	30914 NBR	30914 NBR	Kit, Seal (Incls: 97,106,125,143,154,155,159)	1
	33609 FPM	33609 FPM	33609 FPM	Kit, Seal (Incls: 97,106,125,143,154,155,159)	1
	◆ 33914 EPDM	◆ 33914 EPDM	◆ 33914 EPDM	Kit, Seal (Incls: 97,106,125,143,154,155,159)	1
310	33915 HT	33915 HT	33915 HT	Kit, Seal (Incls: 97,106,125,143,154,155,159,165) Hi-Temp	1
	30915 NBR	30915 NBR	30915 NBR	Kit, Valve (Incls: 143,154,159,164,165,166,167,168)	1
	31214 FPM	31214 FPM	31214 FPM	Kit, Valve (Incls: 143,154,159,164,165,166,167,168)	1
	◆ 31215 EPDM	◆ 31215 EPDM	◆ 31215 EPDM	Kit, Valve (Incls: 143,154,159,164,165,166,167,168)	1
350	30696 STZP	30696 STZP	30696 STZP	Valve Seat Removal Tool	1
	—	—	—	BD Motors (See Individual Data Sheet)	
	—	—	—	Gearbox (See Individual Data Sheet)	

● Industrial discount. **Bold print part numbers are unique to a particular pump model.** *Italics are optional items.* ◆ Silicone oil/grease required. See Tech Bulletins 03, 24, 35, 36, 43, 67, 73, 74 and 77 for additional information.

MATERIAL CODES (Not Part of Part Number): AL=Aluminum BB=Brass CC=Ceramic CU=Copper EPDM=Ethylene Propylene Diene Monomer FCM=Forged Chrome-moly FPM=Fluorocarbon (Viton®) HT=Hi-Temp (EPDM Alternative) NBR=Medium Nitrile (Buna-N) PTFE=Polytetrafluoroethylene (Teflon®) PVDF=Fluoroplastic (High Strength) S=304SS STCP=Steel/Chrome Plated STL=Steel STZP=Steel/Zinc Plated ZZ=Zamak



Models 230, 240, 270



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

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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