



3 Frame Plunger Pump Models 230 240, 270

FEATURES

Superior Design

- Triplex plunger design delivers smoother liquid flow.
- Hi-Pressure Seals 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.
- Optional Belt Drive or Motorized versions offer system flexibility.

Quality Materials

- Precision design 304 stainless steel valves and seats are hardened and polished for ultimate seating and extended valve life.
- 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 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.

⚠ 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 230 Direct-Drive		
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 Direct-Drive		
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		
Flow	3.5 GPM	(13.2 L/M)
Pressure Range	100 to 1500 PSI	(7 to 105 BAR)
RPM	1420 RPM	(1420 RPM)
Stroke	0.512"	(13 mm)
Alternate Specifications		
Flow*	4.25 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)
Inlet Pressure Range	Flooded to 60 PSI	(Flooded to 4 BAR)
Crankcase Capacity	15 oz.	(.45 L)
Maximum Liquid Temperature	160°F	(71°C)
Above 130°F call CAT PUMPS for inlet conditions and elastomer recommendations.		
Inlet Ports (2)	1/2" NPTF	(1/2" NPTF)
Discharge Ports (2)	3/8" NPTF	(3/8" NPTF)
Pulley Mounting	Either Side	(Either Side)
Shaft Diameter	0.650"	(16.5 mm)
Weight	13.9 lbs.	(6.3 kg)
Dimensions	10.22 x 8.78 x 5.30"	(259.5 x 223 x 134.5 mm)

ELECTRIC HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE			MOTOR PULLEY SIZE Using 1725 RPM Motor & Std. 5.0" Pump Pulley O.D.	
	U.S. GPM	L/M	PSI 1000 BAR 70	PSI 1200 BAR 85	PSI 1500 BAR 105	RPM	Pulley O.D.
270	4.0	15.0	2.8	N/A	N/A	1623	4.7
	3.5	13.2	2.4	2.9	3.6	1450	4.1
	3.0	11.4	2.1	2.5	3.1	1218	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	4.25	16	2.9	N/A	N/A	1725	Direct Drive

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 $\frac{\text{Motor Pulley O.D.}}{\text{Pump R.P.M.}} = \frac{\text{Pump Pulley O.D.}}{\text{Motor R.P.M.}}$

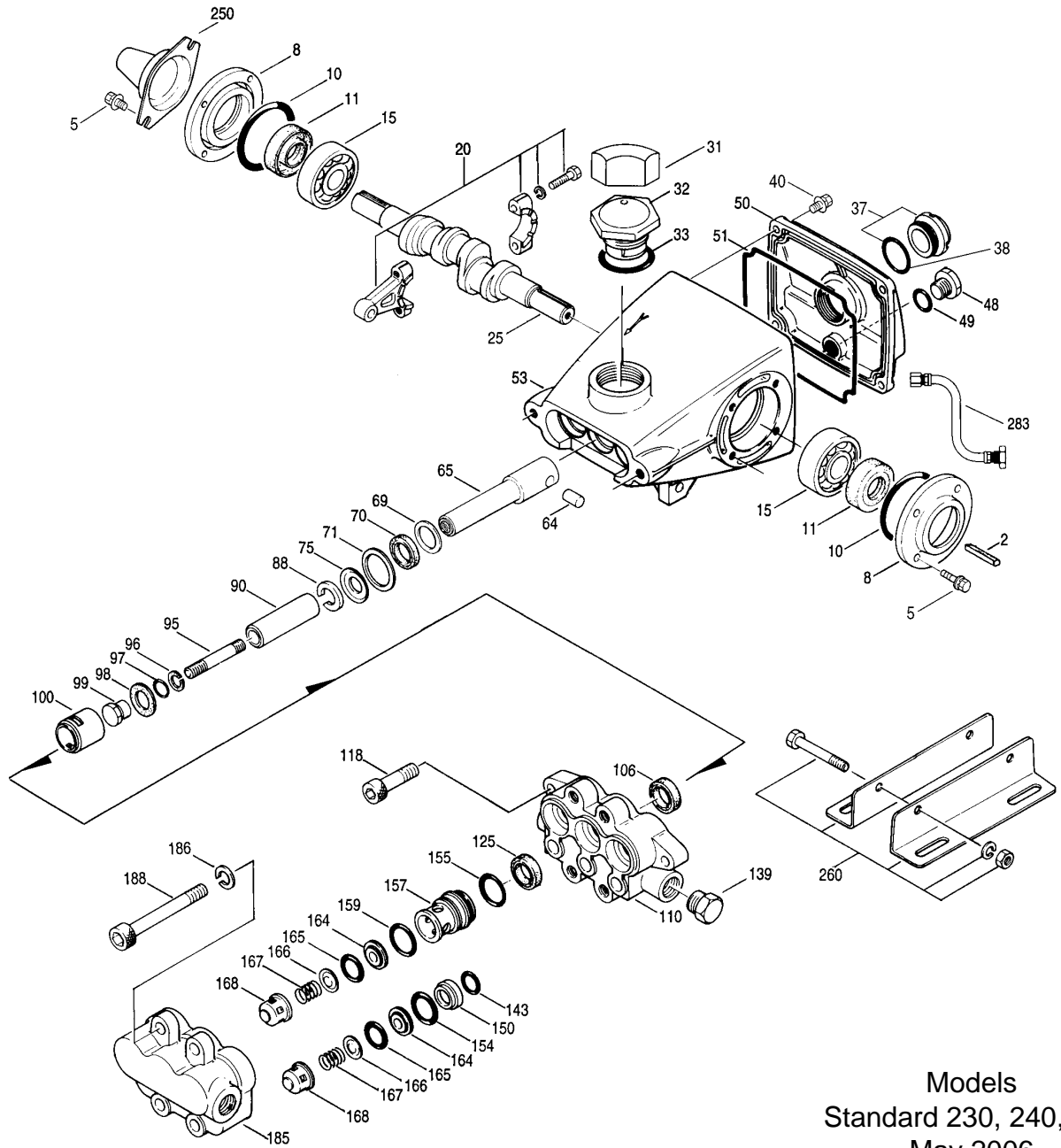
See complete Drive Packages [Inclds: Pulleys, Belts, Hubs, Key] Tech Bulletin 003. Refer to pump **Service Manual** for repair procedure, additional technical information and **pump warranty**.

"Customer confidence is our greatest asset"

PARTS LIST

ITEM	PART NUMBER			DESCRIPTION	QTY
	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 HHC (M6x16)	8
8	27950 AL	27950 AL	27950 AL	Cover, Bearing	2
10	26536 NBR	26536 NBR	26536 NBR	O-Ring, Oil Seal Case - 70D	2
11	24159 NBR	24159 NBR	24159 NBR	Seal, Oil	2
15	14487 STL	14487 STL	14487 STL	Bearing, Ball	2
20	48867 TNM	48867 TNM	48867 TNM	Rod, Connecting Assembly [09/02]	3
25	46946 FCM	46951 FCM	108062 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
37	92241	92241	92241	Gauge, Oil, Bubble w/Gasket - 80D	1
38	44428 NBR	44428 NBR	44428 NBR	Gasket, Flat, Oil Gauge - 80D	1
40	92520 STZP	92520 STZP	92520 STZP	Screw, Sems HHC (M6x20)	6
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	43339 AL	43339 AL	43339 AL	Cover, Rear	1
51	43340 NBR	43340 NBR	43340 NBR	O-Ring, Rear Cover	1
53	44789 AL	44789 AL	44789 AL	Crankcase [07/05]	1
64	16948 CM	16948 CM	16948 CM	Pin, Crosshead	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 - 80D	3
71	26854 STZP	26854 STZP	26854 STZP	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 (M18x43)	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 - 80D	3
	14160 FPM	14160 FPM	14160 FPM	O-Ring, Plunger Retainer - 70D	3
	◆46204 EPDM	◆46204 EPDM	◆46204 EPDM	O-Ring, Plunger Retainer - 70D	3
98	45891 CU	45891 CU	45891 CU	Gasket, Plunger Retainer (M12.5)	3
99	46504 S	46504 S	46504 S	Retainer, Plunger (M6)	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/SS-Spg	3
	◆46651 EPDM	◆46651 EPDM	◆46651 EPDM	Seal, LPS w/SS-Spg	3
110	43902 BB	43902 BB	43902 BB	Manifold, Inlet	1
118	124396 STZP	124396 STZP	124396 STZP	Screw, Sems HSH (M10x35)	2
125	43245 SNG	43245 SNG	43245 SNG	Seal, HPS w/S	3
	44925 FPM	44925 FPM	44925 FPM	Seal, HPS w/SS	3
	46652 HT*	46652 HT*	46652 HT*	Seal, HPS w/SS, 2-PC w/S-Support	3
139	22179 BBCP	22179 BBCP	22179 BBCP	Plug, Inlet (1/2" NPT)	1
143	17547 NBR	17547 NBR	17547 NBR	O-Ring, Inlet Valve Adapter, Rear - 85D	3
	11685 FPM	11685 FPM	11685 FPM	O-Ring, Inlet Valve Adapter, Rear - 85D	3
	◆46648 EPDM	◆46648 EPDM	◆46648 EPDM	O-Ring, Inlet Valve Adapter, Rear - 70D	3
150	43904 BB	43904 BB	43904 BB	Adapter, Inlet Valve	3
154	43893 NBR	43893 NBR	43893 NBR	O-Ring, Inlet Valve Adapter, Front - 80D	3
	44927 FPM	44927 FPM	44927 FPM	O-Ring, Inlet Valve Adapter, Front	3
	◆46649 EPDM	◆46649 EPDM	◆46649 EPDM	O-Ring, Inlet Valve Adapter, Front - 80D	3
155	26089 NBR	26089 NBR	26089 NBR	O-Ring, Discharge Valve Adapter, Rear - 80D	3
	11377 FPM	11377 FPM	11377 FPM	O-Ring, Discharge Valve Adapter, Rear - 80D	3
	◆46647 EPDM	◆46647 EPDM	◆46647 EPDM	O-Ring, Discharge Valve Adapter, Rear - 80D	3
157	43905 BB	43905 BB	43905 BB	Adapter, Discharge Valve	3
159	26089 NBR	26089 NBR	26089 NBR	O-Ring, Discharge Valve Adapter, Front - 80D	3
	11377 FPM	11377 FPM	11377 FPM	O-Ring, Discharge Valve Adapter, Front - 80D	3
	◆46647 EPDM	◆46647 EPDM	◆46647 EPDM	O-Ring, Discharge Valve Adapter, Front - 80D	3
164	44002 S	44002 S	44002 S	Seat	6
165	44001 NBR	44001 NBR	44001 NBR	O-Ring, Seat - 80D	6
	44928 FPM	44928 FPM	44928 FPM	O-Ring, Seat - 80D	6
	◆46650 EPDM	◆46650 EPDM	◆46650 EPDM	O-Ring, Seat - 80D	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)	4
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
				[See Drive Packages, Tech Bulletin 003]	
275	30942 STL	30942 STL	30942 STL	Assy, Hub & Key (M16.5 w/M5 Keyway) (Belt Drive Only)	1
277	34121 AL	34121 AL	34121 AL	Bell Housing Assy (56C-145FR, 2.0 HP)	1
	34126 AL	34126 AL	34126 AL	Bell Housing Assy (182TC-184TC, 3.0 HP)	1
278	8215 AL	8215 AL	8215 AL	Flexible Coupling Assy (M16.5 to 5/8")	1
	8225 AL	8225 AL	8225 AL	Flexible Coupling Assy (M16.5 to 1-1/8")	1

EXPLODED VIEW



Models
Standard 230, 240, 270
May 2006

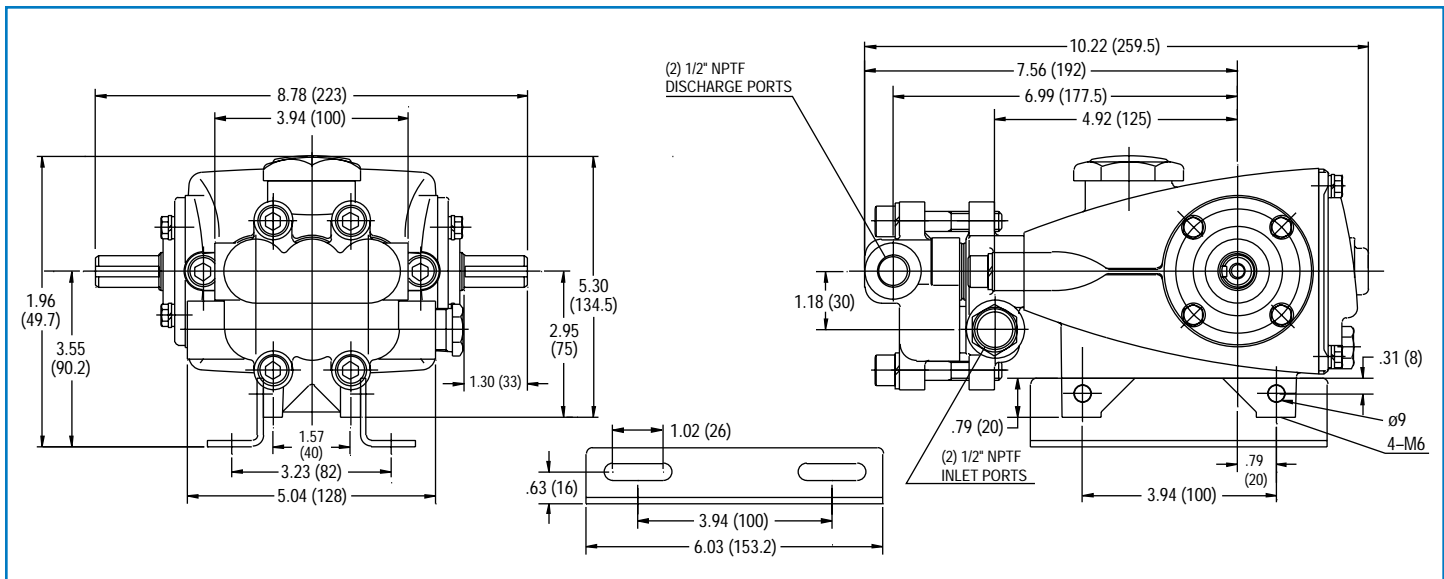
	230 MATL	240 MATL	270 MATL		
283	34334 —	34334 —	34334 —	Kit, Oil Drain	1
298	34961 STZP	34961 STZP	34961 STZP	Clutch Assy, Single Groove, 16.5mm, 12VDC	1
	34964 STZP	34964 STZP	34964 STZP	Clutch Assy, Dual Groove, 16.5mm, 12VDC	1
299	814611 BB	814611 BB	814611 BB	Head, Complete	1
300	30914 NBR	30914 NBR	30914 NBR	Kit, Seal (Incls: 97,106,125,143,154,155,159,165)	1
	33609 FPM	33609 FPM	33609 FPM	Kit, Seal (Incls: 97,106,125,143,154,155,159,165)	1
	◆ 33914 EPDM*	◆ 33914 EPDM*	◆ 33914 EPDM*	Kit, Seal (Incls: 97,106,125,143,154,155,159,165)	1
	33915 HT	33915 HT	33915 HT	Kit, Seal (Incls: 97,106,125,143,154,155,159,165) Hi-Temp	1
310	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	Plier, Reverse	1
—	—	—	—	BD Motors (See Individual Data Sheet)	
—	—	—	—	Gearbox (See Individual Data Sheet)	
—	6107 —	6107 —	6107 —	Oil, Bottle (21 oz.) 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.

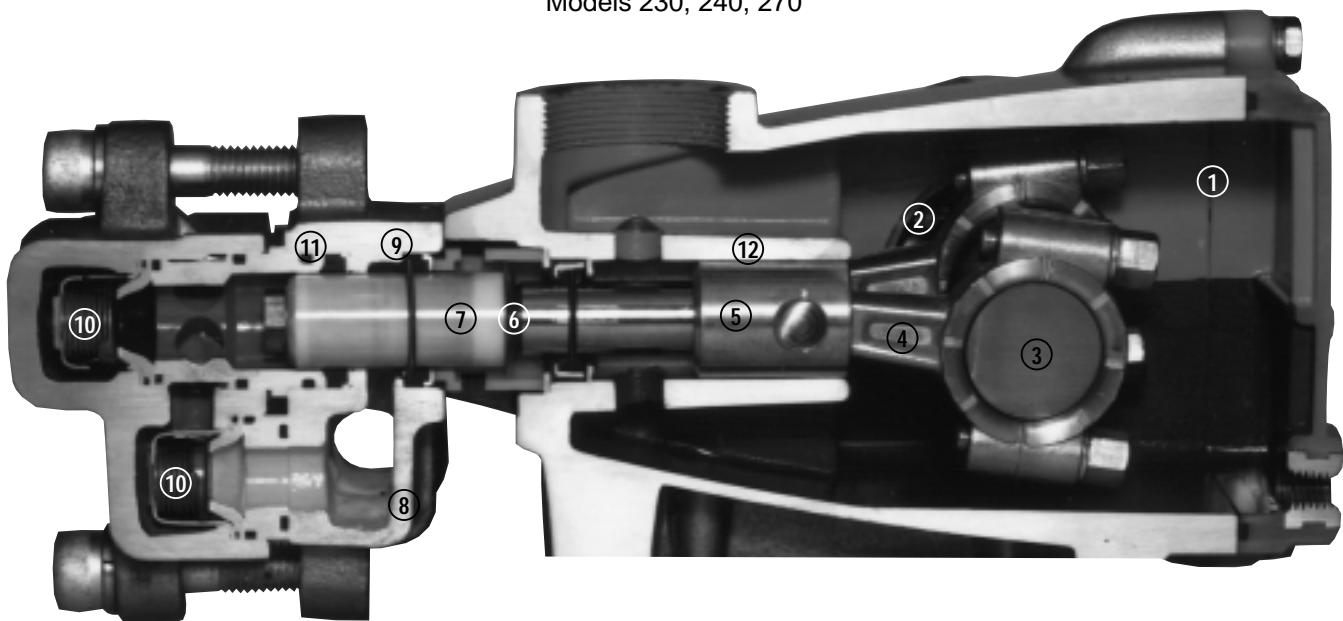
[] Date of latest production change. *Review material codes for individual items (HT generally may be used as alternate).

See Tech Bulletins 002, 003, 024, 035, 036, 043, 067, 073, 074, 077 and 083 for additional information.

MATERIAL CODES (Not Part of Part Number): AL=Aluminum ABS=ABS Plastic BB=Brass BCCP=Brass/Chrome Plated CC=Ceramic CM=Chrome-Moly CU=Copper
EPDM=Ethylene Propylene Diene Monomer FCM=Forged Chrome-moly FPM=Fluorocarbon HT=Hi-Temp (EPDM Alternative)
NBR=Medium Nitrile (Buna-N) PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS SS=316SS SSZZ=316SS/Zamak
SNG=Special Blend (Buna) STCP=Steel/Chrome Plated STL=Steel STZP=Steel/Zinc Plated TNM=Special High Strength



Models 230, 240, 270



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