



18 Frame Block-Style Stainless Steel Plunger Pump

**Standard
Models**

681, 1851

**Flushed
Models**

681K, 1851K

FEATURES

Superior Design

- Triplex plunger design gives smoother liquid flow.
- Inlet and discharge valve assemblies interchange for easier maintenance.
- Oil bath crankcase assures optimum lubrication.
- Close tolerance concentricity of the ceramic plunger maximizes seal life.
- **Standard Models:** Lo-Pressure Seals and V-Packings are completely lubricated and cooled by the liquid being pumped.

Flushed Models: Special ported inlet manifold permits liquid to cool or flush between V-Packings and the Lo-Pressure Seals, providing protection against high temperature and contaminating pumped liquids.

Quality Materials

- All 316 stainless steel valves are heat treated and seats are roller burnished for a positive seal and extended valve life.
- 316 SSL block-style 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 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.	$\frac{\text{GPM} \times \text{PSI}}{1460}$	=	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 681, 681K

	U.S. Measure	Metric Measure
Flow	7.0 GPM	(27 L/M)
Pressure Range	100 to 3000 PSI	(7 to 210 BAR)
Bore	0.787"	(20 mm)
RPM	1000 RPM	(1000 RPM)
Inlet Pressure	-5 to 60 PSI	(-0.35 to 4 BAR)
Maximum Liquid Temperature	160°F	(71°C)

MODEL 1851, 1851K

Flow	10 GPM	(38 L/M)
Pressure Range	100 to 2200 PSI	(7 to 155 BAR)
Bore	0.945"	(24 mm)
RPM	958 RPM	(958 RPM)
Inlet Pressure	-5 to 60 PSI	(-0.35 to 4 BAR)
Maximum Liquid Temperature	160°F	(71°C)

Alternate Specifications

Flow	12 GPM*	(45 L/M)
Pressure Range	100 to 1800 PSI*	(7 to 125 BAR)
RPM	1150 RPM*	(1150 RPM)
Inlet Pressure - *C.A.T. Required	20 to 50 PSI	(1.4 to 3.5 BAR)
Maximum Liquid Temperature	100°F*	(38°C)

COMMON SPECIFICATIONS

Stroke	1.180"	(30 mm)
Crankcase Capacity	42 oz.	(1.26 L)
Inlet Ports (2)	1" NPTF	(1" NPTF)
Flushing Ports (2)*	1/4" NPTF	(1/4" NPTF)
Discharge Ports (2)	1/2" NPTF	(1/2" NPTF)
Pulley Mounting	Either Side	(Either Side)
Shaft Diameter	1.180"	(30 mm)
Weight	67 lbs.	(30.4 kg)
Dimensions	18.37 x 12.99 x 6.49"	(450 x 330 x 165 mm)

* "K" models have special inlet ports for flushing and cooling and are suitable for high inlet pressures. Call for clarification.

HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE						MOTOR PULLEY SIZE	
			PSI	PSI	PSI	PSI	PSI	PSI	Using 1725 RPM Motor & Std. 9.75" Pump Pulley	
	U.S. GPM	L/M	1500	1800	2000	2200	2500	3000	RPM	Pulley O.D.
1851	12.0	45	12.4	14.8	N/A	N/A	N/A	N/A	1150	6.5
1851K	10.0	38	10.3	12.4	13.7	15.1	N/A	N/A	958	5.4
681	7.0	27	7.2	8.7	9.6	10.6	12.0	14.4	1000	5.7
681K	6.0	23	6.2	7.4	8.2	9.0	10.3	12.4	858	4.9

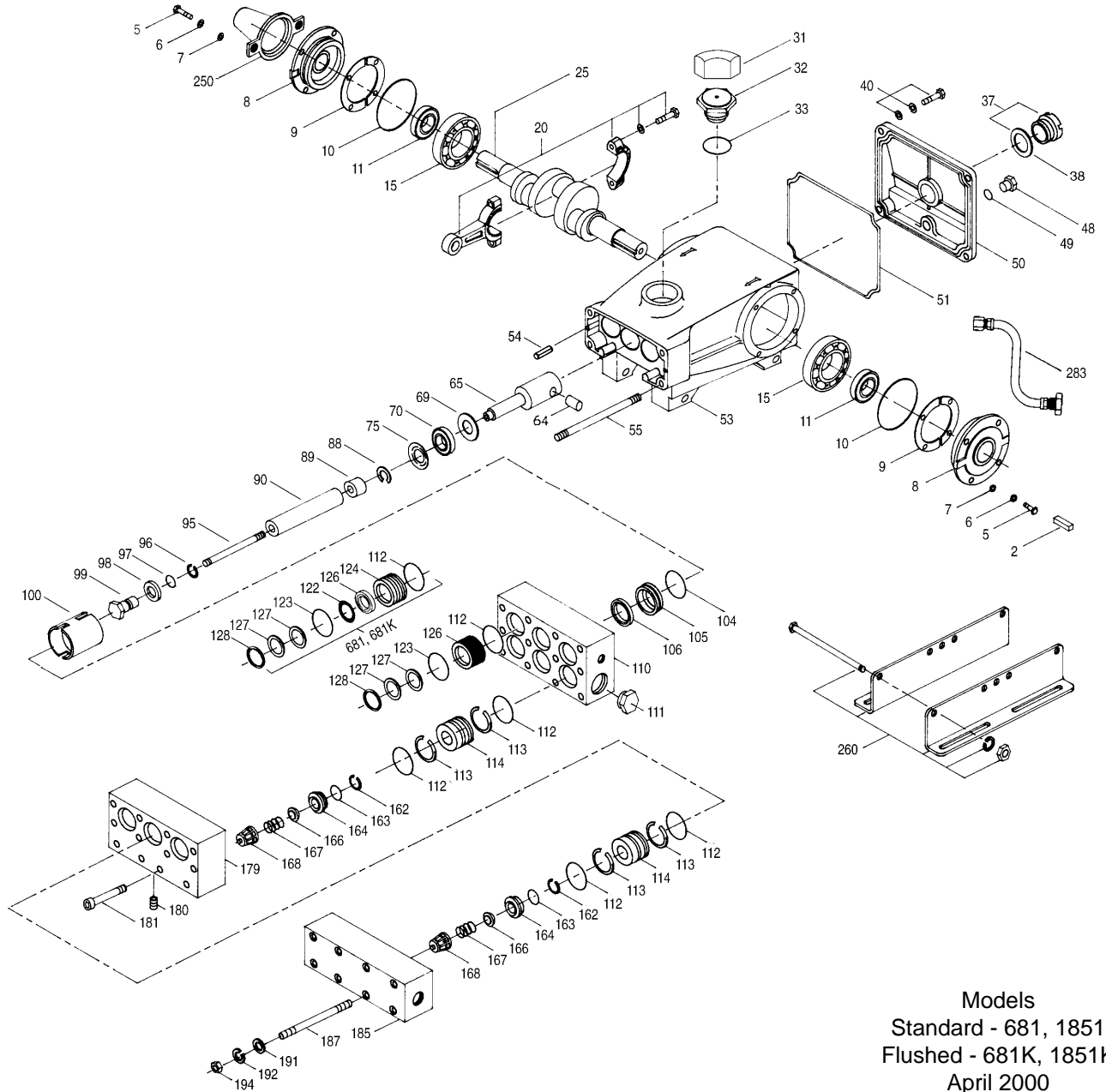
See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 03.

"Customer confidence is our greatest asset"

PARTS LIST

ITEM	681 MATL	681K MATL	1851 MATL	1851K MATL	DESCRIPTION	QTY
● 2	30067 STL	30067 STL	30067 STL	30067 STL	Key (M8x7.5x25)	1 ●
5	89618 S	89618 S	89618 S	89618 S	Screw, HH (M6x16)	8
6	15849 S	15849 S	15849 S	15849 S	Lockwasher, Split (M6)	8
7	19933 S	19933 S	19933 S	19933 S	Washer (M6)	8
8	43496 AL	43496 AL	43496 AL	43496 AL	Cover, Bearing	2
9	43520 FBR	43520 FBR	43520 FBR	43520 FBR	Shim, Split 2-Pc, Bearing Cover	0/2
	45387 S	45387 S	45387 S	45387 S	Shim, Split 2-Pc, Bearing Cover	0/2
10	11340 NBR	11340 NBR	11340 NBR	11340 NBR	O-Ring, Bearing Cover	2
11	43495 NBR	43495 NBR	43495 NBR	43495 NBR	Seal, Oil, Crankshaft	2
15	39060 STL	39060 STL	39060 STL	39060 STL	Bearing, Roller	2
20	43497 ZZ	43497 ZZ	43497 ZZ	43497 ZZ	Rod, Connecting Assembly	3
	45111 HS	45111 HS	45111 HS	45111 HS	Rod, Connecting Assembly	3
25	43494 FCM	43494 FCM	43494 FCM	43494 FCM	Crankshaft, Dual End	1
31	828710	828710	828710	828710	Protector, Oil Cap	1
32	43211 ABS	43211 ABS	43211 ABS	43211 ABS	Cap, Oil Filler	1
33	14177 NBR	14177 NBR	14177 NBR	14177 NBR	O-Ring, Filler Cap - 70D	1
37	92241	92241	92241	92241	Gauge, Oil, Bubble w/Gasket - 80D	1
38	44428 NBR	44428 NBR	44428 NBR	44428 NBR	Gasket, Flat, Oil Gauge - 80D	1
40	92542 S	92542 S	92542 S	92542 S	Screw, Sems HHC (M6x20)	4
48	25625 STCP	25625 STCP	25625 STCP	25625 STCP	Plug, Drain (1/4"x19 BSP)	1
49	23170 NBR	23170 NBR	23170 NBR	23170 NBR	O-Ring, Drain Plug - 70D	1
50	43491 AL	43491 AL	43491 AL	43491 AL	Cover, Rear	1
51	43492 NBR	43492 NBR	43492 NBR	43492 NBR	O-Ring, Rear Cover - 70D	1
● 53	43488 AL	43488 AL	43488 AL	43488 AL	Crankcase w/Guide Pins	1 ●
54	27488 S	27488 S	27488 S	27488 S	Pin, Guide	2
55	701268 SS	701268 SS	701268 SS	701268 SS	Stud, Manifold (M10x185)	4
64	43507 CM	43507 CM	43507 CM	43507 CM	Pin, Crosshead	3
65	45258 SSZZ	45258 SSZZ	45258 SSZZ	45258 SSZZ	Rod, Plunger	3
69	43504 STZP	43504 STZP	43504 STZP	43504 STZP	Washer, Seal, Flat	3
70	43500 NBR	43500 NBR	43500 NBR	43500 NBR	Seal, Oil, Crankcase	3
75	43506 S	43506 S	43506 S	43506 S	Slinger, Barrier	3
88	45675 SS	45675 SS	45675 SS	45675 SS	Washer, Keyhole (M12)	3
89	45880 SS	45880 SS	45879 SS	45879 SS	Spacer, Collar	3
90	43300 CC	43300 CC	43552 CC	43552 CC	Plunger (M20x77) and (M24x77)	3
95	89651 SS	89651 SS	89651 SS	89651 SS	Stud, Plunger Retainer (M6x70)	3
96	43235 PTFE	43235 PTFE	43235 PTFE	43235 PTFE	Back-up-Ring, Plunger Retainer	3
97	17399 NBR	17399 NBR	17399 NBR	17399 NBR	O-Ring, Plunger Retainer - 80D	3
	14160 FPM	14160 FPM	14160 FPM	14160 FPM	O-Ring, Plunger Retainer - 80D	3
	46204 EPDM	46204 EPDM	46204 EPDM	46204 EPDM	O-Ring, Plunger Retainer - 80D	3
98	44041 SS	44041 SS	44041 SS	44041 SS	Gasket, Plunger Retainer	3
99	44031 SS	44031 SS	44031 SS	44031 SS	Retainer, Plunger	3
100	43509 PVDF	43509 PVDF	43509 PVDF	43509 PVDF	Retainer, Seal	3
104	11379 NBR	11379 NBR	11379 NBR	11379 NBR	O-Ring, Inlet Adapter - 70D	3
	700134 FPM	700134 FPM	700134 FPM	700134 FPM	O-Ring, Inlet Adapter	3
	701491 EPDM	701491 EPDM	701491 EPDM	701491 EPDM	O-Ring, Inlet Adapter	3
105	701270 SSL	701270 SSL	701307 SS	701307 SS	Adapter, Inlet	3
106	44071 NBR	44071 NBR	44035 NBR	44035 NBR	Seal, LPS w/SS-Spg	3
	44381 FPM	44381 FPM	44388 FPM	44388 FPM	Seal, LPS w/SS-Spg	3
	701974 SFTB	701974 SFTB	46208 EPDM	46208 EPDM	Seal, LPS w/SS-Spg (ALTERNATE EPDM)	3
● 110	701299 SSL	—	701299 SSL	—	Manifold, Inlet, Block-Style	1 ●
●	—	701309 SSL	—	701309 SSL	Manifold, Inlet, Block-Style, Flushed	1 ●
111	701342 SS	701342 SS	701342 SS	701342 SS	Plug, Inlet (1")	1
112	26969 NBR	26969 NBR	26969 NBR	26969 NBR	O-Ring, Spacer - 70D	15
	28459 FPM	28459 FPM	28459 FPM	28459 FPM	O-Ring, Spacer	15
	701863 EPDM	701863 EPDM	701863 EPDM	701863 EPDM	O-Ring, Spacer	15
113	28204 PTFE	28204 PTFE	28204 PTFE	28204 PTFE	Back-up-Ring, Spacer	12
114	701272 SS	701272 SS	701272 SS	701272 SS	Spacer, Valve, IMDM	6
122	43519 PTFE	43519 PTFE	—	—	Back-up-Ring, Spacer	3
123	13984 NBR	13984 NBR	26969 NBR	26969 NBR	O-Ring, Spacer - 70D	3
	14333 FPM	14333 FPM	28459 FPM	28459 FPM	O-Ring, Spacer	3
	701945 EPDM	701945 EPDM	701863 EPDM	701863 EPDM	O-Ring, Spacer	3
124	701271 SSL	701271 SSL	—	—	Cylinder, V-Packing	3
126	44164 SS	44164 SS	701308 SS	701308 SS	Adapter, Female	3
127	44607 STG	44607 STG	103692 STG	103692 STG	V-Packing	6
	44386 FPM	44386 FPM	103692 STG	103692 STG	V-Packing (ALTERNATE EPDM)	6
128	44165 SS	44165 SS	44032 SS	44032 SS	Adapter, Male	3
162	43248 PTFE	43248 PTFE	43248 PTFE	43248 PTFE	Back-up-Ring, Seat	6
163	43249 NBR	43249 NBR	43249 NBR	43249 NBR	O-Ring, Seat - 70D	6
	44383 FPM	44383 FPM	44383 FPM	44383 FPM	O-Ring, Seat - 70D	6
	46206 EPDM	46206 EPDM	46206 EPDM	46206 EPDM	O-Ring, Seat - 70D	6
164	44037 SS	44037 SS	44037 SS	44037 SS	Seat	6
166	44038 SS	44038 SS	44038 SS	44038 SS	Valve	6
167	44039 SS	44039 SS	44039 SS	44039 SS	Spring, Valve	6
168	44564 PVDF	44564 PVDF	44564 PVDF	44564 PVDF	Retainer, Spring	6
179	701265 SSL	701265 SSL	701265 SSL	701265 SSL	Manifold, Valve Block, Block-Style	1
180	701078 SS	701078 SS	701078 SS	701078 SS	Plug (3/8"NPT)	3
181	89628 S	89628 S	89628 S	89628 S	Screw, HSH (M12x65)	4
● 185	701300 SSL	701300 SSL	701300 SSL	701300 SSL	Manifold, Discharge, Block-Style	1 ●
187	701269 SS	701269 SS	701269 SS	701269 SS	Stud, Manifold (M10x130)	4
191	19934 SS	19934 SS	19934 SS	19934 SS	Washer, Flat (M10)	4
192	15847 S	15847 S	15847 S	15847 S	Lockwasher (M10)	4
194	81258 S	81258 S	81258 S	81258 S	Nut (M10)	4
250	30764 NY	30764 NY	30764 NY	30764 NY	Protector, Shaft w/2 Screws	1

EXPLODED VIEW



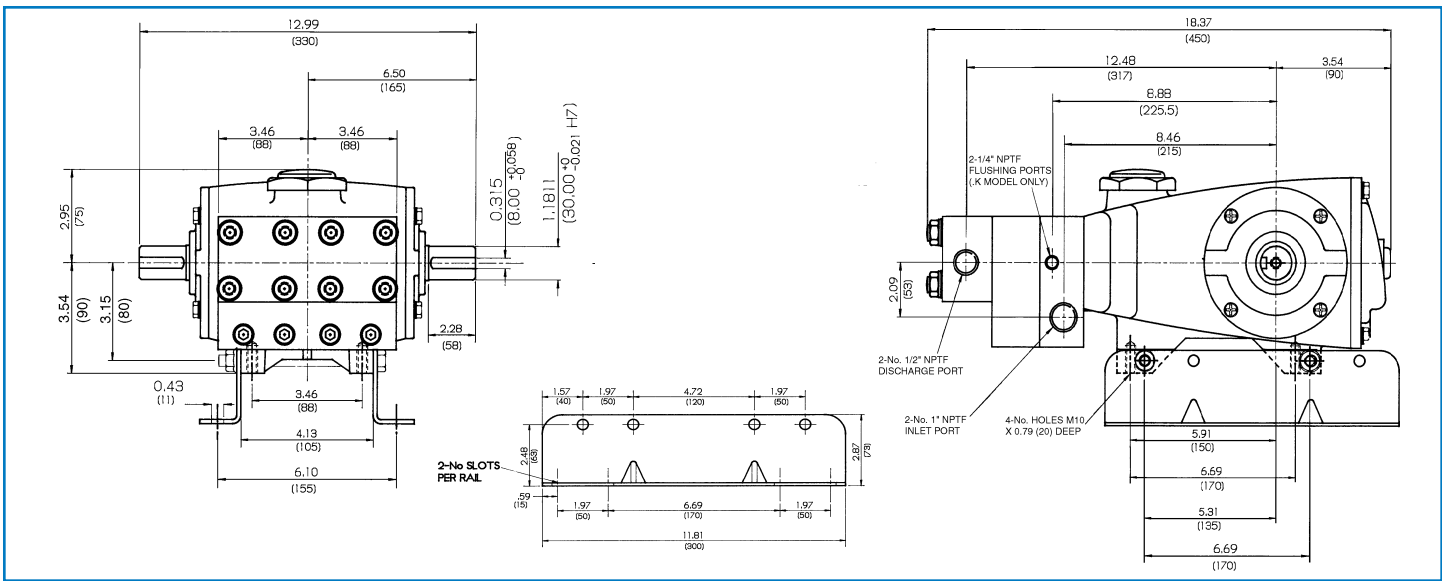
Models
Standard - 681, 1851
Flushed - 681K, 1851K
April 2000

	681 MATL	681K MATL	1851 MATL	1851K MATL		
● 255	30264 STZP	30264 STZP	30264 STZP	30264 STZP	Mount, Direct (Incls: 12490, 12503, 14050, 81048)	1
● 260	30613 STZP	30613 STZP	30613 STZP	30613 STZP	Mount, Rail, Assy - A - (30635, 30903, 30921, 30912)	1
● 265	30661	30661	30661	30661	Kit, Complete Mounting - U.S. (30613, 30206, 30059, 30067, 30764)	1
● 269	30206 F	30206 F	30206 F	30206 F	Pulley, 9.75" AB [See Drive Packages, Tech Bulletin 03]	1 ●
● 274	30059 STL	30059 STL	30059 STL	30059 STL	Hub, H (M30) [See Drive Packages, Tech Bulletin 03]	1 ●
● 283	34334	34334	34334	34334	Kit, Oil Drain	1 ●
● 290	6104	6104	6104	6104	Gasket, Liquid (1 oz.)	1
● 299	901308 SSL	—	901310 SSL	—	Head, Complete, Block-Style	1 ●
● 300	—	901309 SSL	—	901311 SSL	Head, Complete, Block-Style, Flushed	1 ●
	701275 NBR	701275 NBR	701691 NBR	701691 NBR	Kit, Seal (Incls: 97, 104, 106, 112, 113, 123, 127) (122 on 681 only)	1
	701809 FPM	701809 FPM	701433 FPM	701433 FPM	Kit, Seal (Incls: 97, 104, 106, 112, 113, 123, 127) (122 on 681 only)	1
	◆ 701808 EPDM	◆ 701808 EPDM	◆ 701805 EPDM	◆ 701805 EPDM	Kit, Seal (Incls: 97, 104, 106, 112, 113, 123, 127) (122 on 681 only)	1
310	701695 NBR	701695 NBR	701695 NBR	701695 NBR	Kit, Valve (Incls: 112, 113, 162, 163, 164, 166, 167, 168)	2
	701434 FPM	701434 FPM	701434 FPM	701434 FPM	Kit, Valve (Incls: 112, 113, 162, 163, 164, 166, 167, 168)	2
	◆ 701804 EPDM	◆ 701804 EPDM	◆ 701804 EPDM	◆ 701804 EPDM	Kit, Valve (Incls: 112, 113, 162, 163, 164, 166, 167, 168)	2
350	30696 STZP	30696 STZP	30696 STZP	30696 STZP	Plier, Reverse	1 ●
● 370	—	990663	—	990663	Assembly, Flushing, 5 gal, 115V, 1.1Amp, 1/2" NPT	1 ●
● —	711500 SS	711500 SS	711500 SS	711500 SS	C.A.T. (Captive Acceleration Tube)	1 ●
● —	711504 SS	711504 SS	711504 SS	711504 SS	Adapter (2 per C.A.T.) (See Data Sheet for complete selection)	2 ●

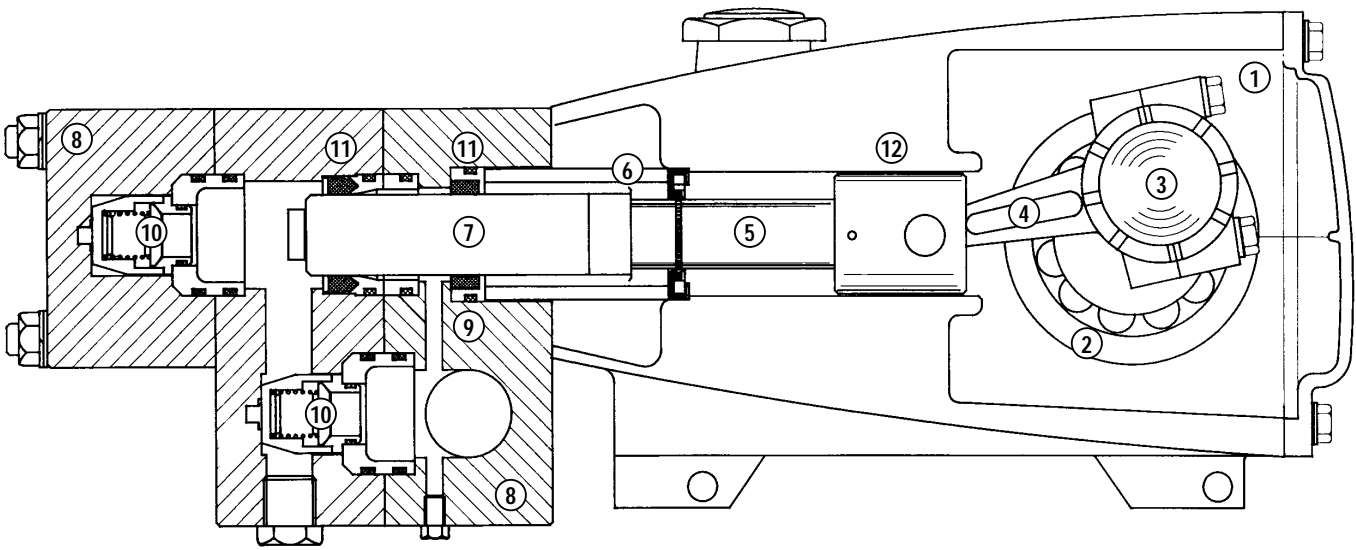
● Industrial discount. **Bold print part numbers are unique to a particular pump model.** *Italics are optional items.* ◆ Silicone oil/grease required.

C. A. T. highly recommended for pressurized inlet, R.O. and Industrial applications. See Tech Bulletins 02, 03, 24, 35, 36, 43, 74, 77 and 83 for additional information.

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum CC=Ceramic CM=Chrome-moly EPDM=Ethylene Propylene Diene Monomer
F=Cast Iron FBR=Fiber FCM=Forged Chrome-moly FPM=Fluorocarbon (Viton®) HS=High Strength NBR=Medium Nitrile (Buna-N) NY=Nylon
PTFE=Polytetrafluoroethylene (Teflon®) PVDF=Fluoroplastic (High Strength) S=304SS SS=316SS SSL=316SS/Low Carbon SFTB=Special Blend (Teflon®) Black
SSZZ=316SS/Zamak STG=Special Blend (Teflon®) White STL=Steel STZP=Steel/Zinc Plated ZZ=Zamak



Models 681, 681K, 1851, 1851K



- 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 316 SSL block-style for long term continuous duty and corrosion resistance.
- 9 **Standard Models:** Lo-Pressure Seals and V-Packings are completely lubricated and cooled by the liquid being pumped.
- 9 **Flushed Models:** Special ported inlet manifold permits liquid to cool or flush between V-Packings and Lo-Pressure Seals providing protection against high temperatures or contaminating pumped liquids.
- 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 April 2000 3096

World Headquarters
CAT PUMPS
 1681 - 94th Lane N.E. Minneapolis, MN 55449-4324
 Phone (763) 780-5440 — FAX (763) 780-2958
 e-mail: sales@catpumps.com
 www.catpumps.com

International Inquiries
 FAX (763) 785-4329
 e-mail: intlsales@catpumps.com



CAT PUMPS (U.K.) LTD.
 1 Fleet Business Park, Sandy Lane, Church Crookham, Fleet
 Hampshire GU13 0BF, England
 Phone Fleet 44 1252-622031 — Fax 44 1252-626655

N.V. CAT PUMPS INTERNATIONAL S.A.
 Heiveldekens 6A, 2550 Kontich, Belgium
 Phone 32-3-450.7150 — Fax 32-3-450.7151
 e-mail: cpi@catpumps.be www.catpumps.be

CAT PUMPS DEUTSCHLAND GmbH
 Buchwiese 2, D-65510 Idstein, Germany
 Phone 49 6126-93030 — Fax 49 6126-930333
 e-mail: catpumps@t-online.de www.catpumps.de