

18 Frame Block-Style Stainless Steel Plunger Pump

**Standard
Models**

681, 1851

**Flushed
Models**

681K, 1851K

FEATURES

Superior Design

- Triplex plunger design gives smoother fluid 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 fluid being pumped.

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

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 Fluid 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 Fluid 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 Fluid 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)
Outlet 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 Using 1725 RPM Motor & Std. 9.75" Pump Pulley	
			PSI 1500	PSI 1800	PSI 2000	PSI 2200	PSI 2500	PSI 3000		
	U.S. GPM	L/M	BAR 105	BAR 125	BAR 140	BAR 152	BAR 175	BAR 210	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	8.6	9.6	10.5	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

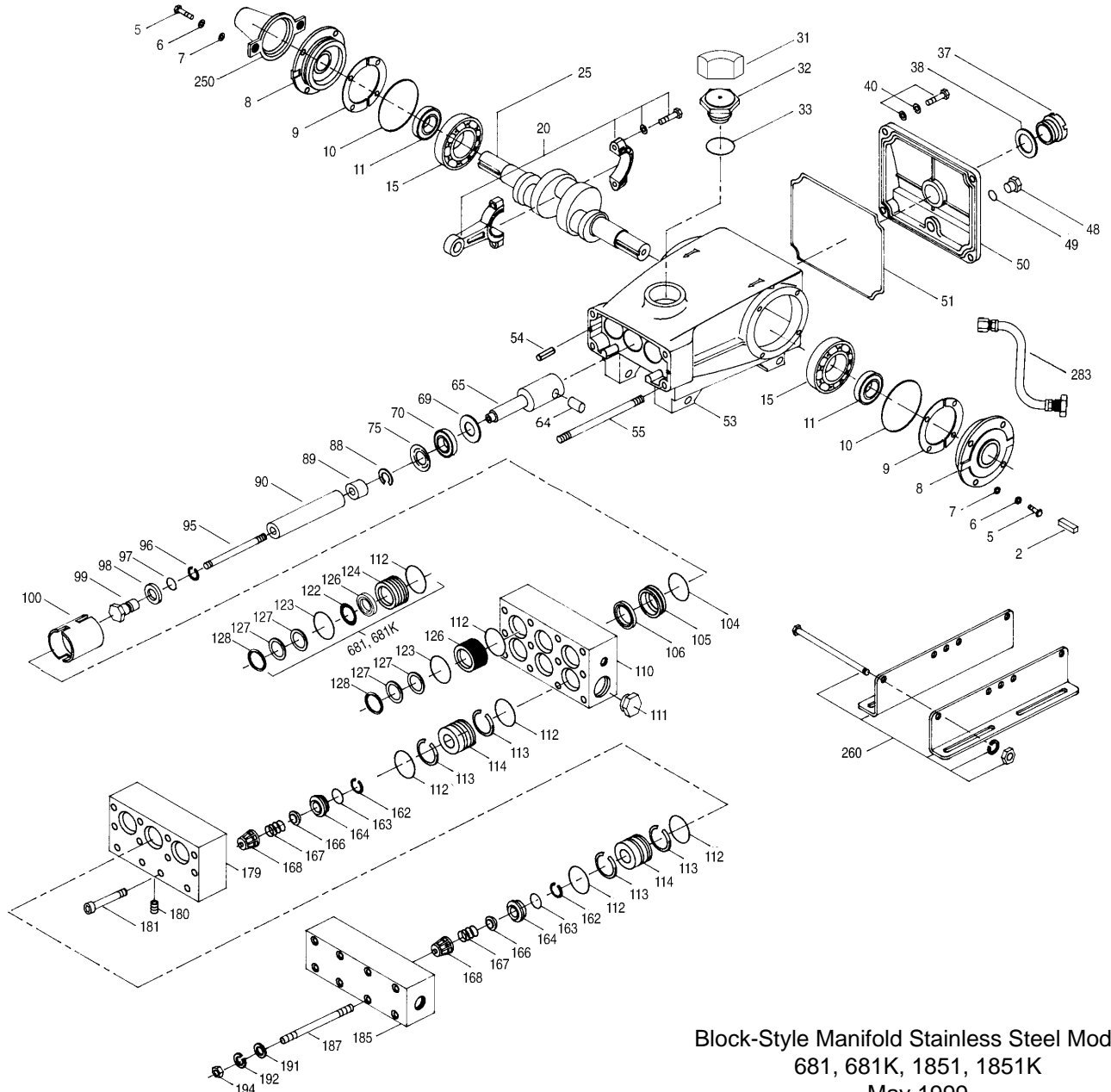
See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 03.

"Customer confidence is our greatest asset"

PARTS LIST

ITEM	PART NUMBER				DESCRIPTION	QTY
● 2	30067 STL	681K MATL	1851 MATL	1851K MATL	Key (M8x7.5x25)	1 ●
5	89618 S	681K MATL	1851 MATL	1851K MATL	Screw, HH (M6x16)	8
6	15849 S	681K MATL	1851 MATL	1851K MATL	Lockwasher, Split (M6)	8
7	19933 S	681K MATL	1851 MATL	1851K MATL	Washer (M6)	8
8	43496 AL	681K MATL	1851 MATL	1851K MATL	Cover, Bearing	2
9	43520	681K MATL	1851 MATL	1851K MATL	Shim, Split 2-Pc, Bearing Cover	0/2
	45387 S	681K MATL	1851 MATL	1851K MATL	Shim, Split 2-Pc, Bearing Cover	0/2
10	11340 NBR	681K MATL	1851 MATL	1851K MATL	O-Ring, Bearing Cover	2
11	43495 NBR	681K MATL	1851 MATL	1851K MATL	Seal, Oil, Crankshaft	2
15	39060 STL	681K MATL	1851 MATL	1851K MATL	Bearing, Roller	2
20	43497 ZZ	681K MATL	1851 MATL	1851K MATL	Rod, Connecting Assembly	3
	45111 HS	681K MATL	1851 MATL	1851K MATL	Rod, Connecting Assembly	3
25	43494 FCM	681K MATL	1851 MATL	1851K MATL	Crankshaft, Dual End	1
31	828710	681K MATL	1851 MATL	1851K MATL	Protector, Oil Cap	1
32	43211	681K MATL	1851 MATL	1851K MATL	Cap, Oil Filler	1
33	14177 NBR	681K MATL	1851 MATL	1851K MATL	O-Ring, Filler Cap	1
37	43987	681K MATL	1851 MATL	1851K MATL	Gauge, Oil, Bubble	1
38	44428 NBR	681K MATL	1851 MATL	1851K MATL	Gasket, Flat, Oil Gauge	1
40	92542 SS	681K MATL	1851 MATL	1851K MATL	Screw, Sems HHC (M6x20)	4
48	25625 STCP	681K MATL	1851 MATL	1851K MATL	Plug, Drain (1/4"x11)	1
49	23170 NBR	681K MATL	1851 MATL	1851K MATL	O-Ring, Drain Plug	1
50	43491 AL	681K MATL	1851 MATL	1851K MATL	Cover, Crankcase	1
51	43492 NBR	681K MATL	1851 MATL	1851K MATL	O-Ring, Crankcase Cover	1
● 53	43488 AL	681K MATL	1851 MATL	1851K MATL	Crankcase	1 ●
54	27488 S	681K MATL	1851 MATL	1851K MATL	Pin, Guide	2
55	701268 SS	681K MATL	1851 MATL	1851K MATL	Stud, Manifold (M10x185)	4
64	43507 S	681K MATL	1851 MATL	1851K MATL	Pin, Plunger Rod	3
65	45258 SSZZ	681K MATL	1851 MATL	1851K MATL	Rod, Plunger	3
69	43504 STZP	681K MATL	1851 MATL	1851K MATL	Washer, Seal, Flat	3
70	43500 NBR	681K MATL	1851 MATL	1851K MATL	Seal, Oil, Crankcase	3
75	43506 S	681K MATL	1851 MATL	1851K MATL	Slinger, Barrier	3
88	45675 SS	681K MATL	1851 MATL	1851K MATL	Washer, Keyhole (M12)	3
89	45880 SS	681K MATL	1851 MATL	1851K MATL	Spacer, Collar	3
90	43300 CC	681K MATL	1851 MATL	1851K MATL	Plunger (M77)	3
95	89651 SS	681K MATL	1851 MATL	1851K MATL	Stud, Plunger Retainer (M6x70)	3
96	43235 PTFE	681K MATL	1851 MATL	1851K MATL	Back-up-Ring, Plunger Retainer	3
97	17399 NBR	681K MATL	1851 MATL	1851K MATL	O-Ring, Plunger Retainer	3
	14160 FPM	681K MATL	1851 MATL	1851K MATL	O-Ring, Plunger Retainer	3
	46204 EPDM	681K MATL	1851 MATL	1851K MATL	O-Ring, Plunger Retainer	3
98	44041 SS	681K MATL	1851 MATL	1851K MATL	Gasket, Plunger Retainer	3
99	44031 SS	681K MATL	1851 MATL	1851K MATL	Retainer, Plunger	3
100	43509 PVDF	681K MATL	1851 MATL	1851K MATL	Retainer, Seal	3
104	11379 NBR	681K MATL	1851 MATL	1851K MATL	O-Ring, Inlet Adapter	3
	700134 FPM	681K MATL	1851 MATL	1851K MATL	O-Ring, Inlet Adapter	3
	701491 EPDM	681K MATL	1851 MATL	1851K MATL	O-Ring, Inlet Adapter	3
105	701270 SS	681K MATL	1851 MATL	1851K MATL	Adapter, Inlet	3
106	44071 NBR	681K MATL	1851 MATL	1851K MATL	Seal, LPS w/SS-Spg	3
	44381 FPM	681K MATL	1851 MATL	1851K MATL	Seal, LPS w/SS-Spg	3
	701974 EPDM	681K MATL	1851 MATL	1851K MATL	Seal, LPS w/SS-Spg	3
	701974 PTFE	681K MATL	1851 MATL	1851K MATL	Seal, LPS w/SS-Spg	3
● 110	701299 SSL	681K MATL	1851 MATL	1851K MATL	Manifold, Inlet, Block-Style	1 ●
●	—	681K MATL	1851 MATL	1851K MATL	Manifold, Inlet, Block-Style, Flushed	1 ●
111	701342 SS	681K MATL	1851 MATL	1851K MATL	Plug, Inlet (1")	1
112	26969 NBR	681K MATL	1851 MATL	1851K MATL	O-Ring, Spacer - 70	15
	28459 FPM	681K MATL	1851 MATL	1851K MATL	O-Ring, Spacer	15
	701863 EPDM	681K MATL	1851 MATL	1851K MATL	O-Ring, Spacer	15
113	28204 PTFE	681K MATL	1851 MATL	1851K MATL	Back-up-Ring, Spacer	12
114	701272 SS	681K MATL	1851 MATL	1851K MATL	Spacer, Valve, IMDM	6
122	43519 PTFE	681K MATL	1851 MATL	1851K MATL	Back-up-Ring, Spacer	3
123	13984 NBR	681K MATL	1851 MATL	1851K MATL	O-Ring, Spacer - 70	3
	14333 FPM	681K MATL	1851 MATL	1851K MATL	O-Ring, Spacer	3
	701945 EPDM	681K MATL	1851 MATL	1851K MATL	O-Ring, Spacer	3
124	701271 SS	681K MATL	1851 MATL	1851K MATL	Cylinder, V-Packing	3
126	44164 SS	681K MATL	1851 MATL	1851K MATL	Adapter, Female	3
127	44607 STG	681K MATL	1851 MATL	1851K MATL	V-Packing	6
	44386 FPM	681K MATL	1851 MATL	1851K MATL	V-Packing, ALTERNATE, White	6
	44607 EPDM	681K MATL	1851 MATL	1851K MATL	V-Packing, ALTERNATE, White	6
128	44165 SS	681K MATL	1851 MATL	1851K MATL	Adapter, Male	3
162	43248 PTFE	681K MATL	1851 MATL	1851K MATL	Back-up-Ring, Seat	6
163	43249 NBR	681K MATL	1851 MATL	1851K MATL	O-Ring, Seat	6
	44383 FPM	681K MATL	1851 MATL	1851K MATL	O-Ring, Seat	6
	46206 EPDM	681K MATL	1851 MATL	1851K MATL	O-Ring, Seat	6
164	44037 SS	681K MATL	1851 MATL	1851K MATL	Seat	6
166	44038 SS	681K MATL	1851 MATL	1851K MATL	Valve	6
167	44039 SS	681K MATL	1851 MATL	1851K MATL	Spring, Valve	6
168	44564 PVDF	681K MATL	1851 MATL	1851K MATL	Retainer, Spring	6
179	701265 SS	681K MATL	1851 MATL	1851K MATL	Manifold, Valve Block, Block-Style	1
180	701078 SS	681K MATL	1851 MATL	1851K MATL	Plug (3/8"NPT)	3
181	89628 SS	681K MATL	1851 MATL	1851K MATL	Screw, HSH (M12x65)	4
● 185	701300 SSL	681K MATL	1851 MATL	1851K MATL	Manifold, Discharge, Block-Style	1 ●
187	701269 SS	681K MATL	1851 MATL	1851K MATL	Stud, Manifold (M10x130)	4
191	19934 SS	681K MATL	1851 MATL	1851K MATL	Washer, Flat (M10)	4
192	15847 S	681K MATL	1851 MATL	1851K MATL	Lockwasher (M10)	4
194	81258 S	681K MATL	1851 MATL	1851K MATL	Nut (M10)	4

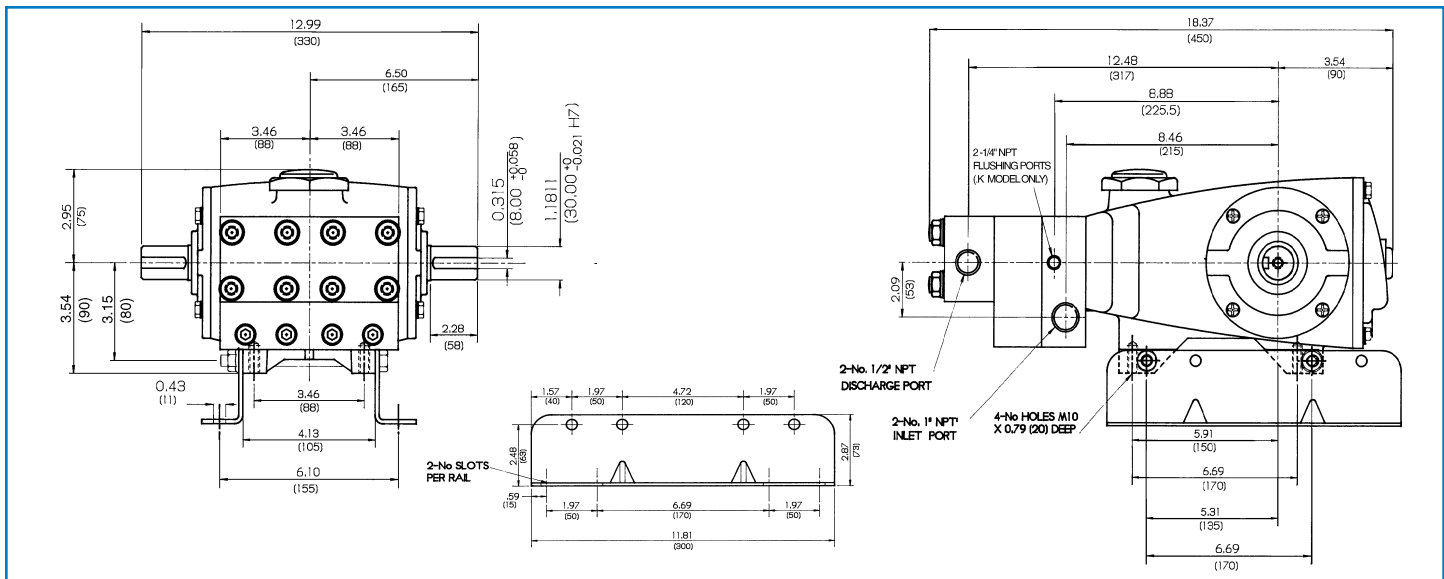
EXPLODED VIEW



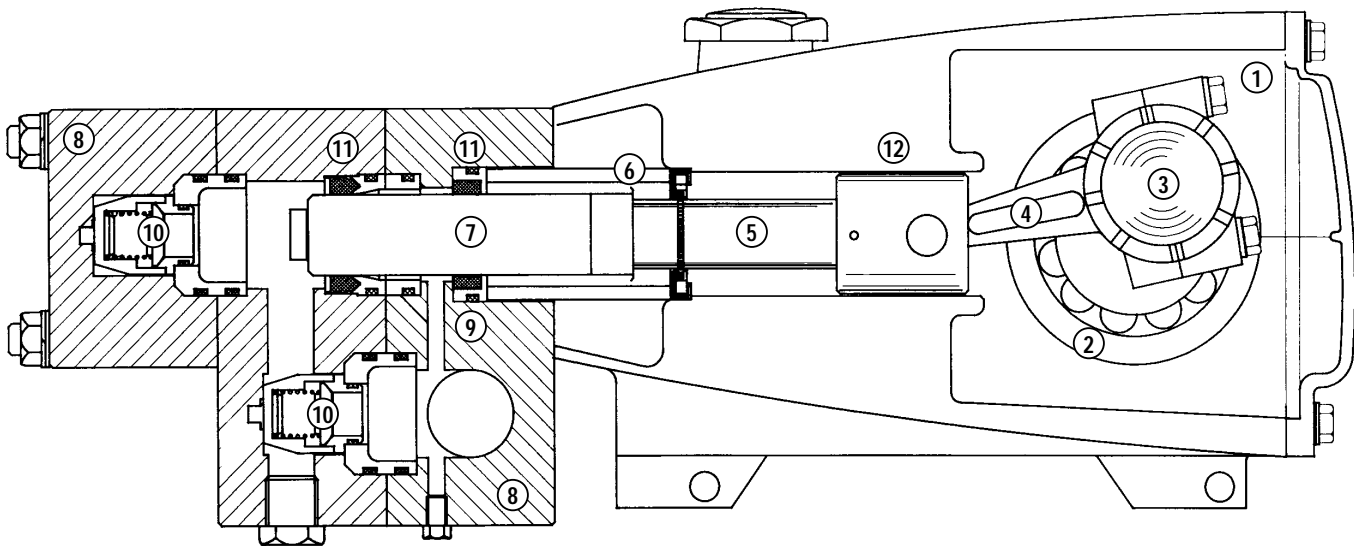
Block-Style Manifold Stainless Steel Models
681, 681K, 1851, 1851K
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	681 MATL	681K MATL	1851 MATL	1851K MATL		
250	30764 NY	30764 NY	30764 NY	30764 NY	Protector, Shaft w/2 Screws	1
255	30264 STZP	30264 STZP	30264 STZP	30264 STZP	Mount, Direct (Incls: 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 complete Drive Packages, Tech Bulletin 03]	1 ●
● 274	30059 STL	30059 STL	30059 STL	30059 STL	Hub (M30-H Series)	1 ●
					[See complete Drive Packages, Tech Bulletin 03]	
● 283	34334	34334	34334	34334	Kit, Oil Drain	1 ●
290	6108	6108	6108	6108	Gasket, Liquid - 1.5 oz.	1
● 299	901308 SSL	—	901310 SSL	—	Head, Complete, Block-Style	1 ●
●	—	901309 SSL	—	901311 SSL	Head, Complete, Block-Style, Flushed	1 ●
300	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: 97,104,106,112,113,127) (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	Tool, Valve Seat Removal	
● 370	—	990663	—	990663	Assembly, Flushing, 5 gal, 115V, 1.1Amp, 1/2" NPT	1 ●

● 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 03, 24, 35, 36, 43, 74 and 77 for additional information.
MATERIAL CODES (Not Part of Part Number): AL=Aluminum BBCP=Brass/Chrome Plated CC=Ceramic EPDM=Ethylene Propylene Diene Monomer F=Cast Iron
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 SSZZ=316SS/Zamak STG=Special Blend (Teflon®)-White
STL=Steel STZP=Steel/Zinc Plated ZZ=Zamak



Models 681, 681K, 1851, 1851K



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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 high strength connecting rods are noted for superior strength and bearing quality.</p> <p>5 Special stainless steel plunger rods with high strength crossheads for longevity and corrosion resistance.</p> | <p>6 The stainless steel slinger provides back-up protection for the crankcase seal, keeping pumped fluids out of the crankcase.</p> <p>7 Special concentric, high density, polished, graphite impregnated, solid ceramic plungers are abrasion resistant and result in extended seal life.</p> <p>8 Manifolds are 316 SSL block-style for long term continuous duty and corrosion resistance.</p> <p>9 Standard Models: Lo-Pressure Seals and V-Packings are completely lubricated and cooled by the fluid being pumped.</p> | <p>9 Flushed Models: Special ported inlet manifold permits fluid to cool or flush between V-Packings and Lo-Pressure Seals providing protection against high temperatures or contaminating pumped fluids.</p> <p>10 Stainless steel valves, seats and springs provide corrosion-resistance, positive seating and long life.</p> <p>11 Specially formulated, CAT PUMP exclusive, V-Packings offer unmatched performance and seal life.</p> <p>12 Crossheads are 360° supported providing 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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World Headquarters

CAT PUMPS

1681 - 94th Lane N.E. Minneapolis, MN 55449-4324

Phone (612) 780-5440 — FAX (612) 780-2958

e-mail: sales@catpumps.com

www.catpumps.com

International Inquiries

FAX (612) 785-4443

e-mail: intlsales@catpumps.com



The Pump with "Nine Lives"

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.

Heveldekens 6A, 2550 Kontich, Belgium

Phone 32-3-450.71.50 — Fax 32-3-450.71.51

e-mail: cpi@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