



68 Frame Block-Style Stainless Steel Plunger Pump

**Standard
Models**

6831

**Flushed
Models**

6831K

FEATURES

Superior Design

- Triplex plunger design provides 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 Lo-Pressure Seals providing protection against high temperatures or contaminating pumped liquids.

Quality Materials

- Precision design 316 stainless steel valves and seats are hardened and polished for ultimate seating and extended valve life.
- 316 SSL block-style manifolds for strength and corrosion resistance.
- Special concentric, high-density, polished, solid ceramic plungers provide a true wear surface and 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.
- Optional Cast Iron crankcase for hazardous environments.
- Chrome-moly crankshaft gives unmatched strength and surface hardness.
- Oversized crankshaft bearings 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
Flow	40 GPM	(151 L/M)
Pressure Range.....	100 to 2300 PSI	(7 to 160 BAR)
Inlet Pressure Range*	Flooded to 50 PSI	(Flooded to 3.5 BAR)
Max. RPM.....	625 RPM	(625 RPM)
Bore.....	1.575"	(40 mm)
Stroke.....	2.579"	(65.5 mm)
Crankcase Capacity.....	10 Qts.	(9.46 L)
Maximum Liquid Temperature	140°F	(60°C)
Above 130F call CAT PUMPS for inlet conditions and elastomer recommendations.		
Inlet Ports (2)	1-1/2" NPTF	(1-1/2" NPTF)
Flushing Ports (2)	1/2" NPTF	(1/2" NPTF)
Discharge Ports (2).....	1" NPTF	(1" NPTF)
Shaft Diameter	1.772"	(45 mm)
Weight.....	355 lbs.	(161 kg)
Dimensions.....	29.5 x 24.33 x 12.00"	(750 x 618 x 305 mm)

* "K" Models have special inlet ports for cooling/flushing and containment of hazardous liquids. Contact CAT PUMPS for additional information.

ELECTRIC HORSEPOWER REQUIREMENTS

FLOW		PRESSURE				RPM
		PSI 1000	PSI 1500	PSI 2000	PSI 2300	
U.S. GPM	L/M	BAR 70	BAR 105	BAR 140	BAR 160	
40	151	27.4	41.1	54.8	63.0	625
30	114	20.6	30.9	41.1	47.3	470
25	95	17.2	25.7	34.3	39.4	391
20	76	13.7	20.5	27.5	31.5	331

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

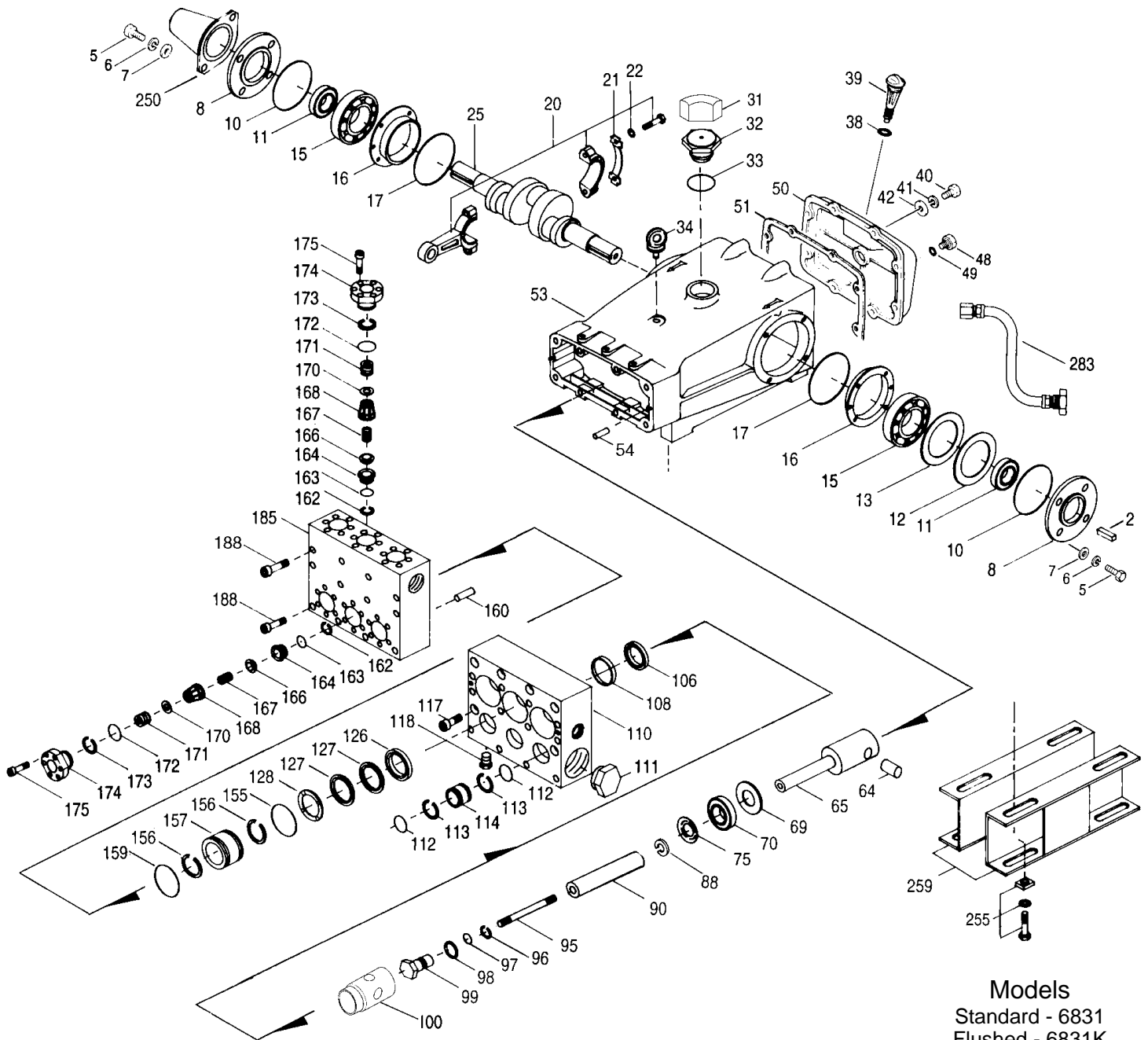
See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 003.
Refer to pump **Service Manual** for repair procedure, additional technical information and **pump warranty**.

"Customer confidence is our greatest asset"

PARTS LIST

ITEM	PART NUMBER		DESCRIPTION		QTY	
	6831	MATL	6831K	MATL		
2	43048	STL	43048	STL	Key (M14x9x90)	1
5	89728	S	89728	S	Screw, HH (M10x40)	8
6	15847	S	15847	S	Lockwasher (M10)	8
7	19934	SS	19934	SS	Washer, Flat (M10)	8
8	29443	AL	29443	AL	Cover, Bearing, Outer	2
10	29444	NBR	29444	NBR	O-Ring, Cover Bearing - 700	2
11	11443	NBR	11443	NBR	Seal, Oil, Crankshaft - 70D	2
12	43642	S	43642	S	Washer, Shim, Bearing, Inner (M120x0.3)	2
13	43643	S	43643	S	Washer, Shim, Bearing, Inner (M120x0.5)	2
15	29441	STL	29441	STL	Bearing, Roller	2
16	29442	STL	29442	STL	Cover Bearing, Inner	2
17	29444	NBR	29444	NBR	O-Ring, Cover Bearing - 700	2
20	115983	BBHS	115983	BBHS	Rod, Connecting Assembly (Incls:21, 22)	3
21	44941	STZP	44941	STZP	Washer, Locking	3
22	43641	STZP	43641	STZP	Shim, Washer (M10.5x1.5)	6
25	29440	FCM	29440	FCM	Crankshaft, Dual Shaft	1
31	828710	—	828710	—	Protector, Oil Cap	1
32	43211	ABS	43211	ABS	Cap, Oil Filler	1
33	14177	NBR	14177	NBR	O-Ring, Filler Cap - 70D	1
34	44319	STZP	44319	STZP	Bolt, Eye (M12)	1
38	11338	NBR	11338	NBR	O-Ring, Dip Stick - 70D	1
39	27769	ABS	27769	ABS	Dipstick	1
40	89627	S	89627	S	Screw, HH (M10x30)	8
41	15847	S	15847	S	Lockwasher (M10)	8
42	19934	SS	19934	SS	Washer, Flat (M10)	8
48	25625	STCP	25625	STCP	Plug, Drain (1/4"x19BSP)	1
49	23170	NBR	23170	NBR	O-Ring, Drain Plug - 70D	1
50	29438	AL	29438	AL	Cover, Rear	1
51	29439	NBR	29439	NBR	Gasket, Rear Cover	1
53	43284	AL	43284	AL	Crankcase w/Guide Pins	1
54	43282	S	43282	S	Pin, Guide	2
64	29481	CM	29481	CM	Pin, Crosshead	3
65	48735	SSZZ	48735	SSZZ	Rod, Plunger Assembly	3
69	29453	STZP	29453	STZP	Washer, Oil Seal	3
70	29454	NBR	29454	NBR	Seal, Oil, Crankcase - 80D	3
75	43865	S	43865	S	Slinger, Barrier	3
88	45676	SS	45676	SS	Washer, Keyhole (M16)	3
90	43921	CC	43921	CC	Plunger (M40x145)	3
95	89778	SS	89778	SS	Stud, Plunger Retainer (M10x135)	3
96	20189	PTFE	20189	PTFE	Back-up-Ring, Plunger Retainer	3
97	11345	NBR	11345	NBR	O-Ring, Plunger Retainer - 70D	3
	11375	FPM	11375	FPM	O-Ring, Plunger Retainer - 70D	3
98	44085	SS	44085	SS	Gasket, Plunger Retainer	3
99	44084	SS	44084	SS	Retainer, Plunger (M10)	3
100	701455	BB	701455	BB	Retainer, Seal	3
106	44113	NBR	44113	NBR	Seal, LPS, w/SS-Spg	3
	44740	FPM	44740	FPM	Seal, LPS, w/SS-Spg	3
108	45381	SS	45381	SS	Spacer, LPS	3
110	701321	SSL	—	—	Manifold Inlet, Block-Style	1
	—	—	701322	SSL	Manifold Inlet, Block-Style, Flushed	1
111	701116	SS	701116	SS	Plug, Inlet Manifold (1-1/2" NPT)	1
112	701632	NBR	701632	NBR	O-Ring, Spacer	6
	701328	FPM	701328	FPM	O-Ring, Spacer	6
113	701329	PTFE	701329	PTFE	Back-up-Ring, Spacer	6
114	701327	SS	701327	SS	Spacer, Inlet	3
117	89694	S	89694	S	Screw, HSH (M16x110)	6
118	—	—	701077	SS	Plug (1/4" NPT)	3
126	45367	SS	45367	SS	Adapter, Female	3
127	44609	STG*	44609	STG*	V-Packing	6
	44741	SFG	44741	SFG	V-Packing	6
128	45368	SS	45368	SS	Adapter, Male	3
155	18697	NBR	18697	NBR	O-Ring, Spacer, Inner - 70D	3
	20137	FPM	20137	FPM	O-Ring, Spacer, Inner - 70D	3
156	48362	D	48362	D	Back-up-Ring, Spacer, Inner	6
157	45369	SS	45369	SS	Spacer, V-Packing	3
159	18697	NBR	18697	NBR	O-Ring, Spacer, Outer - 70D	3
	20137	FPM	20137	FPM	O-Ring, Spacer, Outer - 70D	3
160	44756	SS	44756	SS	Pin, Guide	2
162	48363	D	48363	D	Back-up-Ring, Seat	6
163	26142	NBR	26142	NBR	O-Ring, Seat	6
	14330	FPM	14330	FPM	O-Ring, Seat	6
164	44612	SS	44612	SS	Seat	6
166	44108	SS	44108	SS	Valve	6
167	44109	SS	44109	SS	Spring	6
168	44728	PVDF	44728	PVDF	Retainer, Spring	6
170	44729	SS	44729	SS	Washer, Retainer	6
171	44644	SS	44644	SS	Spring, Coil	6
172	89827	NBR	89827	NBR	O-Ring, Valve Plug - 90D	6
	11747	FPM	11747	FPM	O-Ring, Valve Plug - 90D	6
173	48364	D	48364	D	Back-up-Ring, Valve Plug	6
174	701432	SS	701432	SS	Plug, Valve	6
175	87951	S	87951	S	Screw, HSH (M10x30)	36
185	701431	SSL	701431	SSL	Manifold, Discharge, Block-Style	1
188	701279	S	701279	S	Screw, HSH (M12x100), Lower	4
	89694	S	89694	S	Screw, HSH (M16x110), Upper	8
250	29445	AL	29445	AL	Protector, Shaft	1
255	33243	STZP	33243	STZP	Kit, Mount (Included w/Pump)	2
259	29477	STZP	29477	STZP	Rail, Box (Included w/Pump)	2
275	990014	STL	990014	STL	Hub, "B", (M45), (Keyway M14x9x90) [See Drive Package, Tech Bulletin 003]	1
283	34334	—	34334	—	Kit, Oil Drain	1
290	6104	—	6104	—	Gasket, Liquid (1 oz.)	1

EXPLODED VIEW



Models
 Standard - 6831
 Flushed - 6831K
 February 2005

	6831	MATL	6831K	MATL		
299	910003	SSL	—	—	Head, Complete, Block-Style	1
—	—	—	910004	SSL	Head, Complete, Block-Style, Flushed	1
300	701647	NBR*	701647	NBR*	Kit, Seal (Incls: 97,106,112,113,127,155,156,159)	1
—	33708	FPM	33708	FPM	Kit, Seal (Incls: 97,106,112,113,127,155,156,159)	1
310	34017	NBR	34017	NBR	Kit, Valve (Incls: 162,163,164,166,167,168,170,172,173)	2
—	31955	FPM	31955	FPM	Kit, Valve (Incls: 162,163,164,166,167,168,170,172,173)	2
—	819010	F	819010	F	Assembly, Crankcase, Cast Iron Conversion	1
370	—	—	990663	—	Assembly, Flushing, 5 gal., 115V, 1.1 Amp, 1/2" NPT	1
—	714500	SS	714500	SS	C.A.T. (Captive Acceleration Tube)	1
—	714506	SS	714506	SS	Adapter (2 per C.A.T.) (See Data Sheet for complete selection)	2
—	6565.7	—	6565.7	—	Plunger Pump Service Video	1
—	6105	—	6105	—	Oil, Twin Pack (Two 2.5 gal.) ISO 68 Multi-viscosity Hydraulic	1
—	6119	—	6119	—	(Fill to specified crankcase capacity prior to start-up)	1
—	—	—	—	—	Lubricant, Antiseize (1 oz.)	1

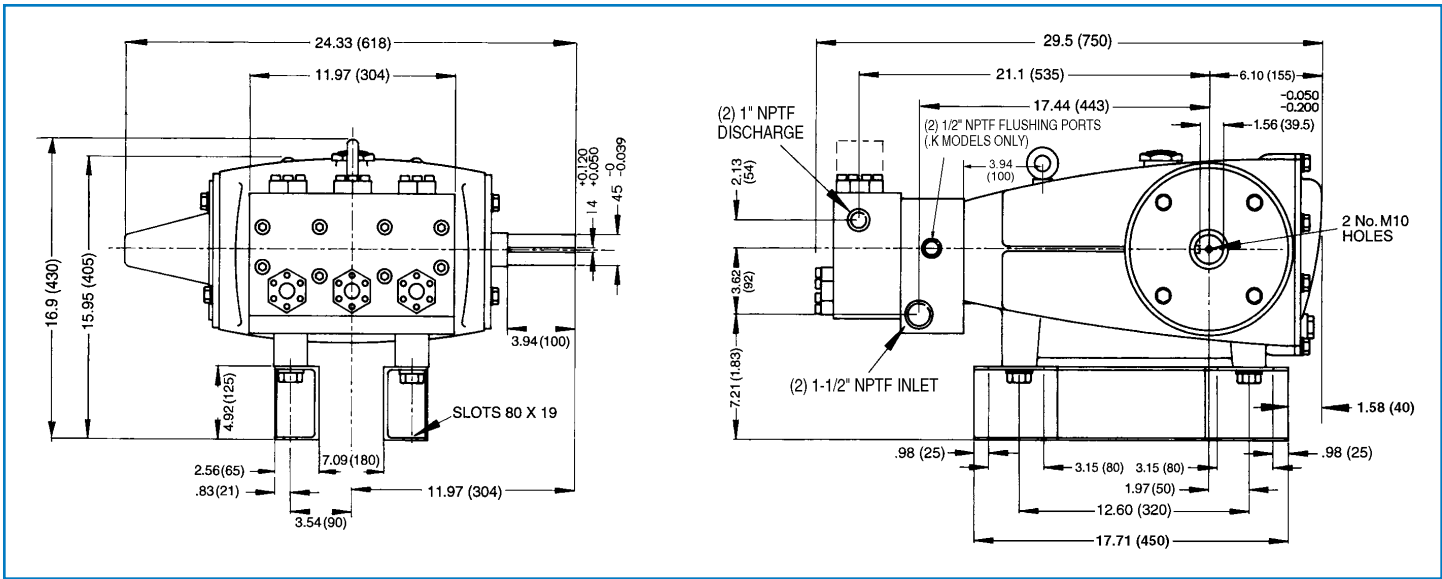
Bold print part numbers are unique to a particular pump model. Italics are optional items.

*Review material codes for individual items (STG generally maybe used as alternate)

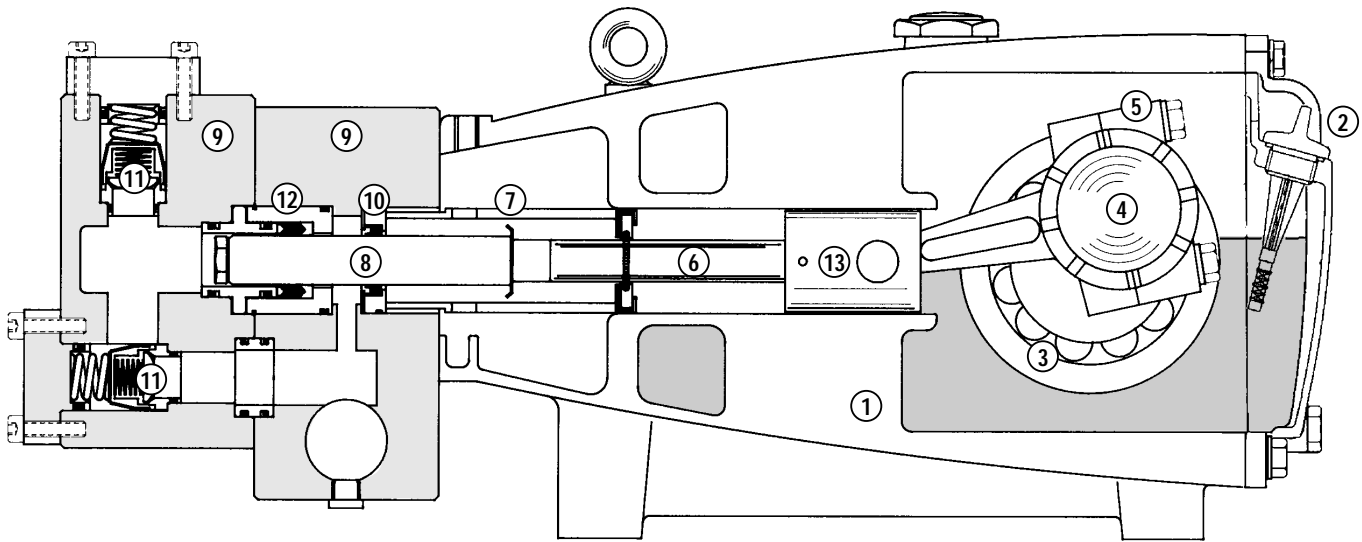
Pressurized Inlet and C.A.T. highly recommended for Hi-Temp, R.O. and industrial applications.

See Tech Bulletin 002, 003, 024, 036, 074, 077, 083 and 084 for additional information.

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum BB=Brass BBHS=Brass/High Strength CC=Ceramic CM=Chrome-Moly
 D=Acetal FCM=Forged Chrome-moly FPM=Fluorocarbon NBR=Medium Nitrile (Buna-N) PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride
 S=304SS SS=316SS SSL=316SS/Low Carbon SSZZ=316SS/Zamak SFG=Special Blend FPM STG=Special Blend PTFE White STL=Steel
 STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated



Models 6831, 6831K



- 1 Die cast aluminum **crankcase** means high strength, light weight, and excellent tolerance control.
- 2 **Dipstick** offers top access for easy oil level check.
- 3 Oversized crankshaft **bearings** provide extended bearing life and pump performance.
- 4 Chrome-moly **crankshaft** provides unmatched strength and surface hardness for long life.
- 5 Matched oversized high strength **connecting rods** are noted for superior tensile strength and bearing quality.
- 6 Special stainless steel **plunger rods** with high strength crossheads for longevity and corrosion resistance.
- 7 The stainless steel **barrier slinger** provides back-up protection for the crankcase seal, keeping pumped liquids out of the crankcase.
- 8 Special concentric, high density, polished, solid ceramic plungers provide a true wear surface and extended seal life.
- 9 **Manifolds** are 316 SSL block style for long-term, continuous-duty and corrosion resistance.
- 10 **Standard Models:** Lo-Pressure Seals and V-Packings are completely lubricated and cooled by the liquids being pumped.
- 11 **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.
- 12 Specially formulated, CAT PUMP exclusive, **V-Packings** offer unmatched performance and seal life.
- 13 **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

World Headquarters
CAT PUMPS
 1681 - 94th Lane N.E. Minneapolis, MN 55449-4324
 Phone (763) 780-5440 — FAX (763) 780-2958
 e-mail: techsupport@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 GU52 8BF, England
 Phone Fleet 44 1252-622031 — Fax 44 1252-626655
 e-mail: sales@catpumps.co.uk

N.V. CAT PUMPS INTERNATIONAL S.A.
 Heiveldekens 6A, 2550 Kontich, Belgium
 Phone 32-3-450.71.50 — Fax 32-3-450.71.51
 e-mail: cpi@catpumps.be www.catpumps.be

CAT PUMPS DEUTSCHLAND GmbH
 Buchwiese 2, D-65510 Idstein, Germany
 Phone 49 6126-9303 0 — Fax 49 6126-9303 33
 e-mail: catpumps@t-online.de www.catpumps.de