



38 Frame Block-Style Stainless Steel Plunger Pump

Standard Models 3801, 3811

Flushed Models 3801K, 3811K

FEATURES

Superior Design

- Triplex plunger design provides smoother liquid flow.
- 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.
- **K Models:** Special Flushed Inlet Manifold permits flush for added cooling with high temperature liquids and lubrication with low lubricity 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 offers 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 with greater capacity means longer bearing life.

Easy Maintenance

- Wet-end is easily serviced without entering crankcase, requiring less time and effort.
- Inlet and discharge valve assemblies interchange for easier maintenance without disturbing piping.
- 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 3801, 3801K

Flow9.0 GPM (34 L/M)
 Pressure Range100 to 5000 PSI (7 to 345 BAR)
 RPM824 RPM (824 RPM)
 Bore0.787" (20 mm)

MODEL 3811, 3811K

Flow14 GPM (53 L/M)
 Pressure Range100 to 3000 PSI (7 to 210 BAR)
 RPM800 RPM (800 RPM)
 Bore0.984" (25 mm)

COMMON SPECIFICATIONS

Inlet Pressure*Flooded to 70 PSI (Flooded to 4.9 BAR)
 Stroke1.890" (48 mm)
 Crankcase Capacity4.2 Qts. (4 L)
 Maximum Liquid Temperature160°F (71°C)
 Above 130°F 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)
 Pulley MountingEither Side (Either Side)
 Shaft Diameter1.378" (35 mm)
 Weight170 lbs. (77 kg)
 Dimensions24.72 x 18.11 x 9.37" (628 x 460 x 238 mm)

* K Models: Special Flushed Inlet Manifold permits external flush for added cooling with high temperature liquids and lubrication with low lubricity liquids.

ELECTRIC HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE							RPM
			PSI 2000	PSI 2500	PSI 3000	PSI 3500	PSI 4000	PSI 4500	PSI 5000	
	U.S. GPM	L/M	BAR 140	BAR 175	BAR 210	BAR 245	BAR 275	BAR 310	BAR 345	
3801	9	34	N/A	N/A	N/A	21.6	24.7	27.8	30.9	824
3801K	8	30	N/A	N/A	N/A	19.2	22.0	24.7	27.5	732
	7	27	N/A	N/A	N/A	16.8	19.2	21.6	24.0	640
3811	14	53	19.2	24.0	28.8	N/A	N/A	N/A	N/A	800
3811K	12	45	16.5	20.6	24.7	N/A	N/A	N/A	N/A	685
	10	38	13.7	17.2	20.6	N/A	N/A	N/A	N/A	571

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

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

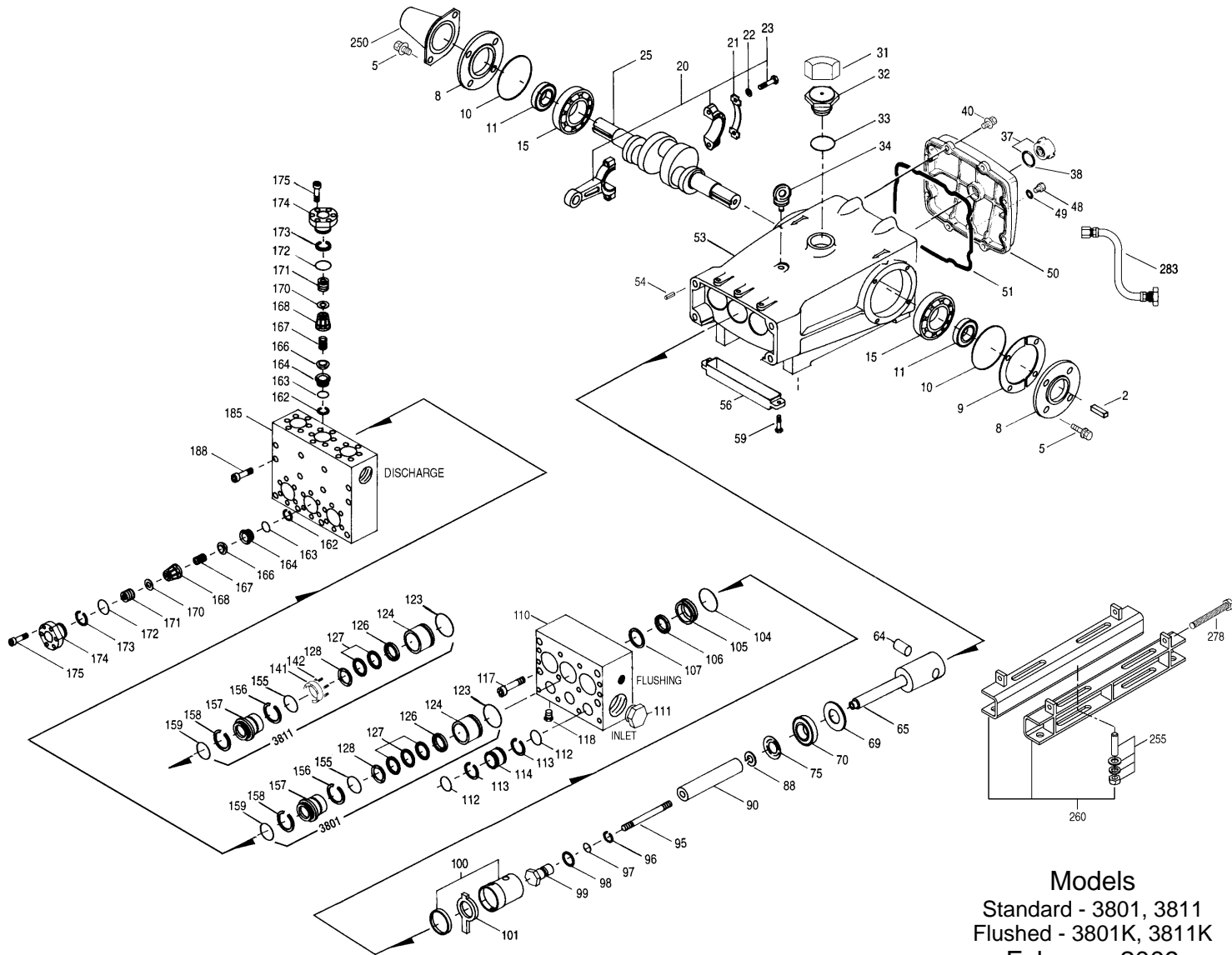
"Customer confidence is our greatest asset"

PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY
2	3801 MATL 34021 STL	Key (M10x8x70)	1
5	125753 S	Screw, HH Sems (M8x25)	8
8	44542 AL	Cover, Bearing	2
9	815279 FBR	Shim, Split 2-Pc	0-2
10	12398 NBR	O-Ring, Bearing Cover - 70D	2
11	13296 NBR	Seal, Oil, Crankshaft	2
15	29326 STL	Bearing, Roller	2
20	121467 TNM	Rod, Connecting Assy (Incls: 21, 22, 23) [10/00]	3
21	126749 STCP R	Washer, Locking (M10)	3
22	126574 STCP R	Washer, Flat (M10)	6
23	122045 STZP	Screw, HH (M10x55)	6
25	29325 FCM	Crankshaft, Dual End (M48)	1
31	828710 —	Protector, Oil Cap w/Foam Gasket	1
32	43211 ABS	Cap, Oil Filler	1
33	14177 NBR	O-Ring, Oil Filler Cap - 70D	1
34	126743 STCP R	Bolt, Eye (M12x1.75) (For Lifting Pump Only)	1
37	92241 —	Gauge, Oil, Bubble w/Gasket - 80D	1
38	44428 NBR	Gasket, Flat, Oil Gauge - 80D	1
40	125753 S	Screw, HH Sems (M8x25)	8
48	25625 STCP	Plug, Drain (1/4"x19BSP)	1
49	23170 NBR	O-Ring, Drain Plug - 70D	1
50	45936 AL	Cover, Rear	1
51	16612 NBR	O-Ring, Cover - 70D	1
53	44487 AL	Crankcase Assy (Incls: 34, 54)	1
54	27488 S	Pin, Guide	2
56	27790 POP	Pan, Oil	1
59	92538 S	Screw, HHC Sems (M6x16)	2
64	43864 CM	Pin, Crosshead	3
65	45118 SSZZ	Rod, Plunger	3
69	126587 STCP R	Washer, Oil Seal	3
70	100488 NBR	Seal, Oil, Crankcase	3
	44739 FPM	Seal, Oil, Crankcase	3
75	43506 S	Slinger, Barrier	3
88	45675 S	Washer, Keyhole	3
90	43945 CC	Plunger (M20x145) (M25x145)	3
95	89779 S	Stud, Plunger Retainer (M7x123) (M10x135)	3
96	20184 PTFE	Back-up-Ring, Plunger Retainer	3
97	14190 NBR	O-Ring, Plunger Retainer - 70D	3
	14161 FPM	O-Ring, Plunger Retainer	3
	48239 EPDM	O-Ring, Plunger Retainer	3
98	44069 SSL	Gasket, Plunger Retainer	3
99	44068 SSL	Retainer, Plunger (M7) (M10)	3
100	814279 PVDF	Retainer, Seal, 2-Pc	3
101	44095 S	Wick	3
104	43875 NBR	O-Ring, Inlet Adapter - 70D	3
	44826 FPM	O-Ring, Inlet Adapter - 70D	3
	701656 EPDM	O-Ring, Inlet Adapter - 70D	3
105	701344 SS	Adapter, Inlet	3
106	44071 NBR	Seal, LPS w/SS-Spg	3
	44381 FPM	Seal, LPS w/SS-Spg	3
	701974 SFTB*	Seal, LPS w/SS-Spg	3
107	44074 SS	Washer, LPS	3
110	701286 SSL	Manifold, Inlet, Block-Style	1
	701408 SSL	Manifold, Inlet, Block-Style, Flushed	1
111	701116 SS	Plug, Inlet (1-1/2" NPT)	1
112	701794 NBR	O-Ring, Inlet Spacer - 70D	6
	701318 FPM	O-Ring, Inlet Spacer - 75D	6
	701495 EPDM	O-Ring, Inlet Spacer - 70D	6
113	701319 PTFE	Back-up-Ring, Inlet Spacer	6
114	701317 SS	Spacer, Inlet	3
117	701252 SS	Screw, HSH (M14x100)	4
118	701077 SS	Plug (1/4" NPT)	3
123	12391 NBR	O-Ring, V-Packing Cylinder - 70D	3
	13266 FPM	O-Ring, V-Packing Cylinder - 70D	3
	701657 EPDM	O-Ring, V-Packing Cylinder - 70D	3
124	701336 SSL	Cylinder, V-Packing	3
126	44164 SS	Adapter, Female	3
127	44607 STG*	V-Packing	9-6
128	44165 SS	Adapter, Male	3
141	—	Spring, Coil	15
142	—	Spacer w/Coil Springs	3
155	17622 NBR	O-Ring, V-Packing Spacer	3
	11719 FPM	O-Ring, V-Packing Spacer	3
	701654 EPDM	O-Ring, V-Packing Spacer	3
156	28675 PTFE	Back-up-Ring, V-Packing Spacer	3
157	701352 SS	Spacer, V-Packing	3
158	28675 PTFE	Back-up-Ring, V-Packing Spacer	3
159	17622 NBR	O-Ring, V-Packing Spacer	3
	11719 FPM	O-Ring, V-Packing Spacer	3
	701654 EPDM	O-Ring, V-Packing Spacer	3
162	21985 PTFE	Back-up-Ring, Seat	6
163	26089 NBR	O-Ring, Seat - 80D	6
	11377 FPM	O-Ring, Seat - 80D	6
	46647 EPDM	O-Ring, Seat - 80D	6
164	44080 SS	Seat	6
166	44081 SS	Valve	6
167	44082 SS	Spring	6
168	44735 PVDF	Retainer, Spring	6
170	44794 SS	Washer, Spring Retainer	6
171	44793 SS	Spring, Coil, Valve Plug	6
172	15853 NBR	O-Ring, Valve Plug - 70D	6
	11720 FPM	O-Ring, Valve Plug - 70D	6
	701481 EPDM	O-Ring, Valve Plug - 70D	6
173	20224 PTFE	Back-up-Ring, Valve Plug	6
174	701260 SS	Plug, Valve	6

Replace as a set

EXPLODED VIEW



Models
 Standard - 3801, 3811
 Flushed - 3801K, 3811K
 February 2009

	3801	MATL	3801K	MATL	3811	MATL	3811K	MATL		
175	87951	S	87951	S	87951	S	87951	S	Screw, HSH, Valve Plug (M10x30)	36
185	701314	SSL	701314	SSL	701785	SSL	701785	SSL	Manifold, Discharge, Block-Style	1
188	701279	S	701279	S	701279	S	701279	S	Screw, HSH, (M12x100)	12
196	701342	SS	701342	SS	701342	SS	701342	SS	Plug, Discharge (1" NPT) Not Shown	1
250	44516	NY	44516	NY	44516	NY	44516	NY	Protector, Shaft w/2 Screws, Lockwashers and Washers (Incl w/Pump)	1
255	34039	S	34039	S	34039	S	34039	S	Assy, Direct Mount	1
260	92674	STZP	92674	STZP	92674	STZP	92674	STZP	Mount, Rail, Assy (Incls: 34018)	1
275	990013	STL	990013	STL	990013	STL	990013	STL	Hub, "B" (35mm w/Keyway) [See Drive Packages Tech 003]	1
278	80540	ZP	80540	ZP	80540	ZP	80540	ZP	Screw, HH (M12x100) (Rail Adjusting Screw)	1
279	30278	STZP	30278	STZP	30278	STZP	30278	STZP	Oiler (1 oz.) Not Shown	3
281	30967	—	30967	—	30967	—	30967	—	Glass, Oiler Not Shown	3
282	10069	NBR	10069	NBR	10069	NBR	10069	NBR	Gasket, Oiler Not Shown	3
283	34314	—	34314	—	34314	—	34314	—	Kit, Oil Drain (3/8" x 48")	1
290	6124	—	6124	—	6124	—	6124	—	Gasket, Liquid (3 oz.)	1
299	901388	SSL	901389	SSL	901370	SSL	901371	SSL	Head, Complete, Block-Style	1
300	701786	NBR*	701786	NBR*	701793	NBR*	701793	NBR*	Kit, Seal (Incls: 97, 104, 106, 112, 113, 123, 127, 155, 156, 158, 159)	1
	33251	FPM*	33251	FPM*	701802	FPM*	701802	FPM*	Kit, Seal (Incls: 97, 104, 106, 112, 113, 123, 127, 155, 156, 158, 159)	1
	33141	EPDM*	33141	EPDM*	701803	EPDM*	701803	EPDM*	Kit, Seal (Incls: 97, 104, 106, 112, 113, 123, 127, 155, 156, 158, 159)	1
310	34151	NBR	34151	NBR	34151	NBR	34151	NBR	Kit, Valve, Preassembled (Incls: 162, 163, 164, 166, 167, 168, 170, 172, 173)	2
	701798	FPM	701798	FPM	701798	FPM	701798	FPM	Kit, Valve, Preassembled (Incls: 162, 163, 164, 166, 167, 168, 170, 172, 173)	2
	701799	EPDM	701799	EPDM	701799	EPDM	701799	EPDM	Kit, Valve, Preassembled (Incls: 162, 163, 164, 166, 167, 168, 170, 172, 173)	2
	819000	F	819000	F	819000	F	819000	F	Assembly, Crankcase, Cast Iron Conversion	1
370	—	—	990663	—	—	—	990663	—	Assembly, Flushing, 5 gal, 115V, 1.1 Amp, 1/2"NPT	1
390	711500	SS	711500	SS	711500	SS	711500	SS	C.A.T. (Inlet pressure stabilizer for RO and boosted inlet applications)	1
391	711506	SS	711506	SS	711506	SS	711506	SS	Adapter (2 per C.A.T.) (See Data Sheet for complete selection)	1
392	701818	SS	701818	SS	701818	SS	701818	SS	Elbow Assy used with Adapter Assy 711506	1
—	6100	—	6100	—	6100	—	6100	—	Oil, Case (12-21 oz. Bottles) ISO-68 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. [] Date of latest production change. ♦ Silicone oil/grease required.

R Components comply with RoHS Directive. * Review individual parts in each kit for material identification.

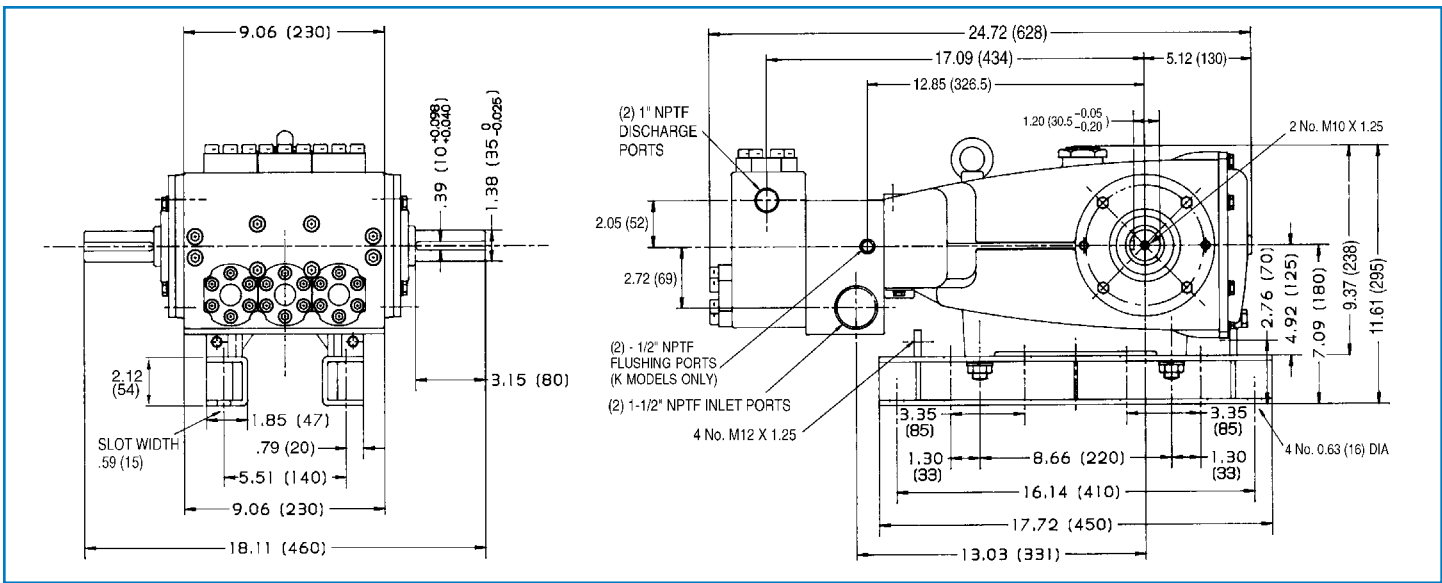
See Tech Bulletins 002, 003, 024, 035, 036, 041, 043, 053, 074, 077, 083, 095 and 105 for additional information. **C.A.T. highly recommended for pressurized inlet, R.O. and industrial applications.**

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=Filter

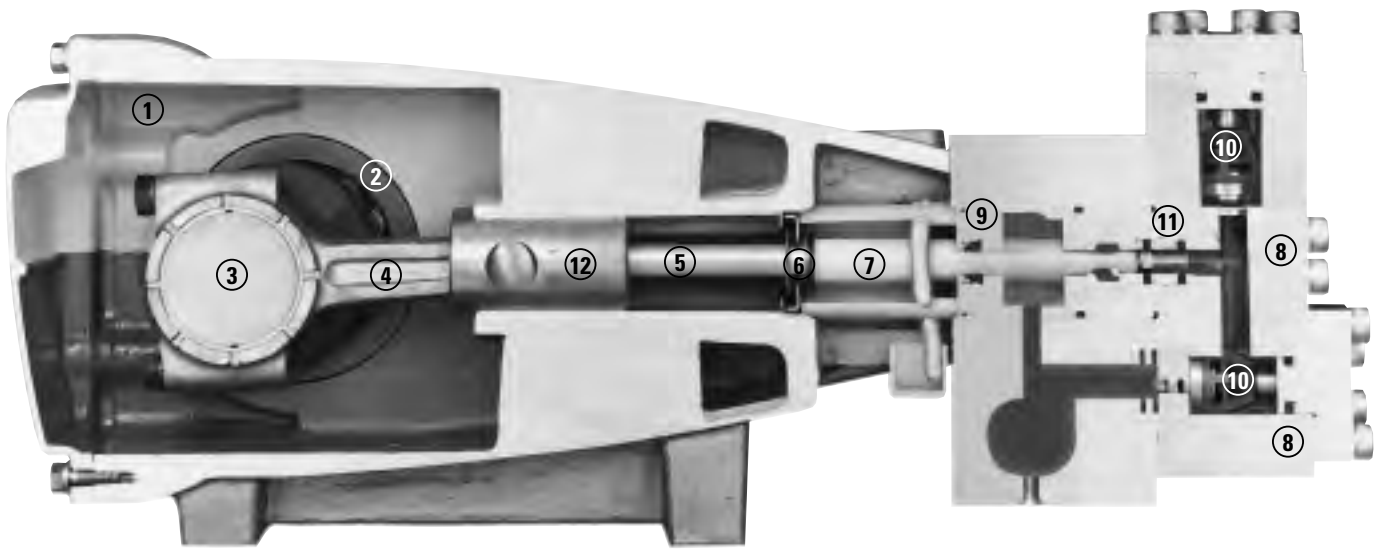
FCM=Forged Chrome-moly FPM=Fluorocarbon NBR=Medium Nitrile (Buna-N) NBRs=Buna, Silicone Free NY=Nylon POP=Polypropylene PTFE=Pure Polytetrafluoroethylene

PVDF=Polyvinylidene Fluoride S=304SS SFTA=Special Blend PTFE Tan SFTB=Special Blend PTFE Black SS=316SS SSL=316SS/Low Carbon SSZZ=316SS/Zamak

STCP=Steel/Chrome Plated STG=Special Blend PTFE White STL=Steel STZP=Steel/Zinc Plated TNM=Special High Strength ZP=Zinc Plated



Models 3801, 3801K, 3811, 3811K



- 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 TNM **connecting rods** 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, solid ceramic **plungers** provide a true wear surface and 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 Special **Flushed Inlet Manifold** permits external flush for added cooling with high temperature liquids and lubrication with low lubricity liquids.
- 10 Stainless steel **valves, seats and springs** provide corrosion-resistance, ultimate seating and extended life.
- 11 Specially formulated, CAT PUMP exclusive, **V-Packings** offer unmatched performance and seal life.
- 12 **Crossheads** are 360° supported for uncompromising alignment.

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



The Pumps with Nine Lives

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 www.catpumps.co.uk

N.V. CAT PUMPS INTERNATIONAL S.A.

Heiveldekens 6A, B-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