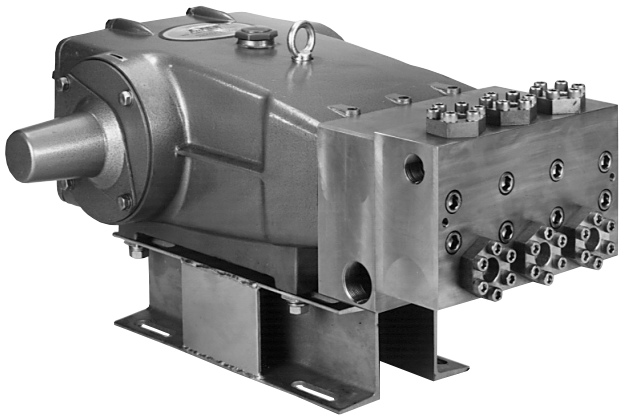


68 Frame Block-Style Stainless Steel Plunger Pump

Standard Model **6821**

Flushed Model **6821K**

FEATURES

- Triplex plunger design delivers high efficiency and low pulsation.
- Durable dual V-Packings are lubricated and cooled by pumped liquid.
- Pre-Set Lo-Pressure seals provide secondary protection against external leaks and require no packing adjustment.
- Special high-density, polished, concentric ceramic plungers provide a true wear surface and extended seal life.
- Specially formulated seals and V-Packings offer unmatched performance and seal life.
- Wet-end is easily serviced without entering crankcase.

SPECIFICATIONS

	U.S. Measure	Metric Measure
Flow	25.0 gpm	(95 l/m)
Pressure Range	100 to 3000 psi	(7 to 210 bar)
Inlet Pressure Range*	Flooded to 50 psi	(Flooded to 3.5 bar)
Max. RPM	615 rpm	(615 rpm)
Bore	1.260"	(32 mm)
Stroke	2.579"	(65.5 mm)
Crankcase Capacity	10 Qts.	(9.46 l)
Maximum Liquid Temperature	140°F	(60°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)
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)

* Flushed K Models: Special ported inlet manifold permits an external flush liquid providing cooling for Hi-temp liquids and lubrication for low lubricity liquids.

ELECTRIC HORSEPOWER REQUIREMENTS

FLOW		PRESSURE				RPM
		psi 1500	psi 2000	psi 2500	psi 3000	
U.S. gpm	l/m	bar 105	bar 140	bar 175	bar 210	
25	95	25.7	34.3	42.8	51.4	615
20	76	20.5	27.4	34.3	41.1	492
15	57	15.4	20.5	25.7	30.9	369

DETERMINING THE PUMP R.P.M. $\frac{\text{Rated gpm}}{\text{Rated rpm}} = \frac{\text{"Desired" gpm}}{\text{"Desired" rpm}}$

DETERMINING THE REQUIRED H.P. $\frac{\text{gpm x psi}}{1460} = \text{Electric Brake H. P. Required}$

DETERMINING MOTOR PULLEY SIZE $\frac{\text{Motor Pulley O.D.}}{\text{Pump rpm}} = \frac{\text{Pump Pulley O.D.}}{\text{Motor rpm}}$

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

⚠ CAUTIONS AND WARNINGS

All High Pressure Systems require a primary pressure regulating device (i.e. regulator, unloader) and a secondary pressure relief device (i.e. pop-off valve, relief valve). Failure to install such relief devices could result in personal injury or damage to pump or property. CAT PUMPS does not assume any liability or responsibility for the operation of a customer's high pressure system.

Read all CAUTIONS and WARNINGS before commencing service or operation of any high pressure system. The CAUTIONS and WARNINGS are included in each service manual and with each Accessory Data sheet. CAUTIONS and WARNINGS can also be viewed online at www.catpumps.com/cautions-warnings or can be requested directly from CAT PUMPS.

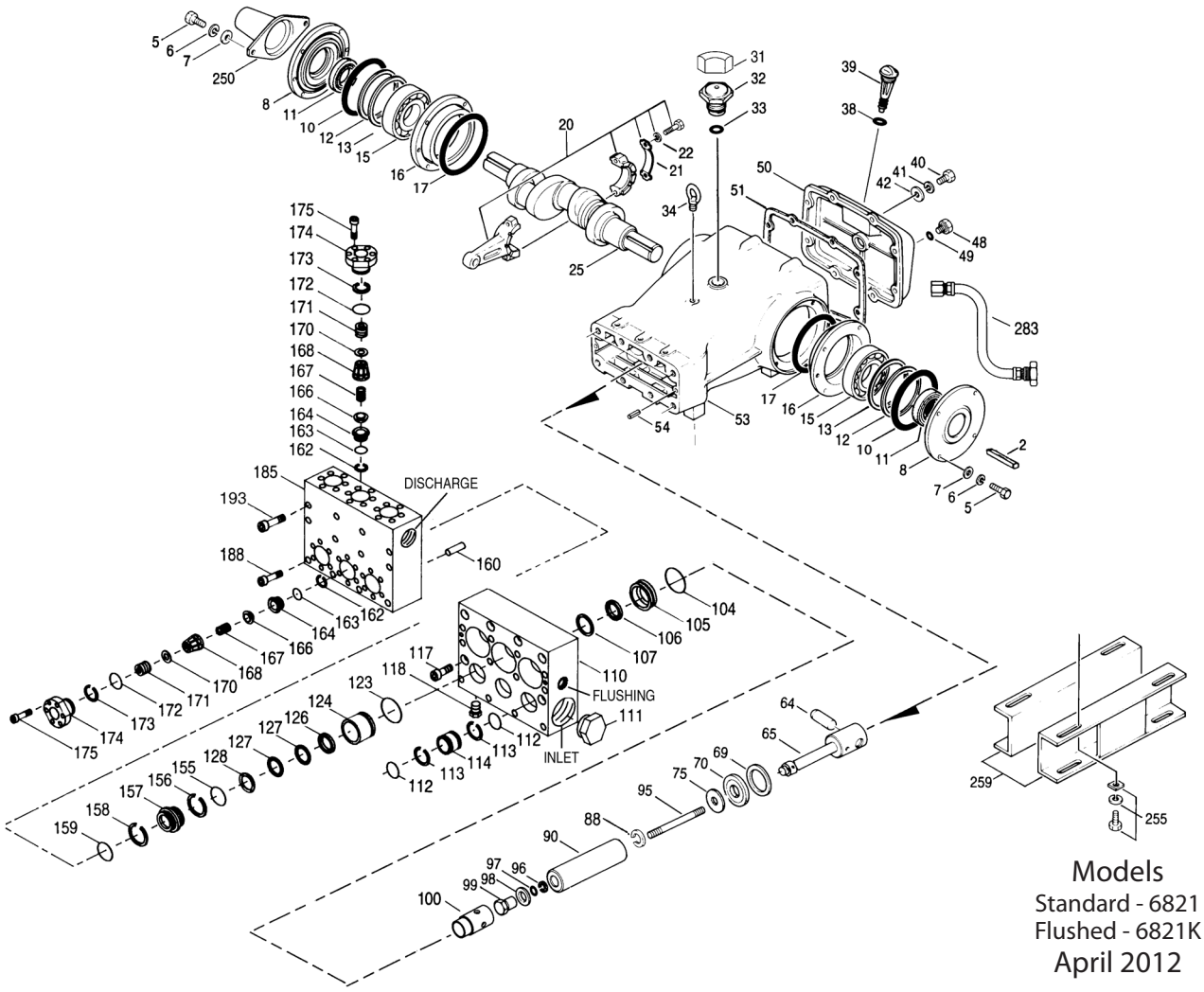
WARRANTY

View the Limited Warranty on-line at www.catpumps.com/warranty.

PARTS LIST

ITEM	PART NUMBER 6821	MATL	6821K	MATL	DESCRIPTION	QTY
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	S	19934	S	Washer, Flat (M10)	8
8	29443	AL	29443	AL	Cover, Bearing, Outer	2
10	29444	NBR	29444	NBR	O-Ring, Bearing Cover -70D	2
11	11443	NBR	11443	NBR	Seal, Oil, Crankshaft - 70D	2
12	43642	STZP	43642	STZP	Washer, Shim (M120x0.3)	0-2
	126594	*STCP R*	*126594*	*STCP R*	*Washer, Shim (M120x0.3)*	*0-2*
13	126595	STCP R	126595	STCP R	Washer, Shim (M120x0.5)	0-2
15	29441	STL	29441	STL	Bearing, Roller	2
16	29442	STL	29442	STL	Cover, Bearing, Inner	2
17	29444	NBR	29444	NBR	O-Ring, Bearing Cover - 70D	2
20	*126612*	*BBHS*	*126612*	*BBHS*	*Assembly, Connecting Rod (Inclds: 21, 22)*	*3*
21	126560	STCP R	126560	STCP R	Washer, Locking	3
22	126593	STCP R	126593	STCP R	Washer, Shim (M10.5x1.5)	6
25	29440	FCM	29440	FCM	Crankshaft, Dual Shaft	1
31	*828710*	—	*828710*	—	*Protector, Oil Cap w/Foam Gasket*	*1*
32	43211	ABS	43211	ABS	Cap, Oil Filler	1
33	14177	NBR	14177	NBR	O-Ring, Filler Cap - 70D	1
34	126743	STCP R	126743	STCP R	Bolt, Eye (M12) (For Lifting Pump Only)	1
38	129343	RBR	129343	RBR	Gasket, Flat Flex	1
39	27769	ABS	27769	ABS	Stick, Dip	1
40	89627	S	89627	S	Screw, HH (M10x30)	8
41	15847	S	15847	S	Lockwasher (M10)	8
42	19934	S	19934	S	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	129386	NBR	129386	NBR	Gasket, Rear Cover	1
53	45303	AL	45303	AL	Crankcase (Inclds: 34, 54)	1
54	43282	S	43282	S	Pin, Guide	2
64	29481	CM	29481	CM	Pin, Crosshead	3
65	48735	SSZZ	48735	SSZZ	Rod, Plunger	3
69	126588	STCP R	126588	STCP R	Washer, Oil Seal	3
70	29454	NBR	29454	NBR	Seal, Oil Crankcase - 80D	3
75	43865	S	43865	S	Slinger, Barrier	3
88	45676	S	45676	S	Washer, Keyhole (M16)	3
90	43957	CC	43957	CC	Plunger (M32x145)	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*	*3*
	◆ *701490*	*EPDM*	◆ *701490*	*EPDM*	*O-Ring, Plunger Retainer*	*3*
98	44085	SS	44085	SS	Gasket, Plunger Retainer	3
99	44084	SS	44084	SS	Retainer, Plunger (M10)	3
100	703084	D	703084	D	Retainer, Seal	3
104	43875	NBR	43875	NBR	O-Ring, Adapter, Inlet - 70D	3
	44826	*FPM*	*44826*	*FPM*	*O-Ring, Adapter, Inlet - 70D*	*3*
	◆ *701656*	*EPDM*	◆ *701656*	*EPDM*	*O-Ring, Adapter, Inlet - 70D*	*3*
105	45562	SS	45562	SS	Adapter, Inlet, LPS	3
106	44098	NBR	44098	NBR	Seal, LPS, w/SS-Spg	3
	44827	*FPM*	*44827*	*FPM*	*Seal, LPS, w/SS-Spg*	*3*
	◆ *48244*	*EPDM*	◆ *48244*	*EPDM*	*Seal, LPS, w/SS-Spg*	*3*
107	44101	SS	44101	SS	Washer, LPS	3
110	**701321**	**SS**	—	—	Manifold Inlet, Block-Style	1
	—	—	**701322**	**SS**	Manifold Inlet, Block-Style, Flushed	1
111	701116	SS	701116	SS	Plug, Inlet Manifold (1-1/2" NPTM)	1
112	701632	NBR	701632	NBR	O-Ring, Spacer	6
	701328	*FPM*	*701328*	*FPM*	*O-Ring, Spacer*	*6*
	◆ *701973*	*EPDM*	◆ *701973*	*EPDM*	*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" NPTM)	3
123	12391	NBR	12391	NBR	O-Ring, V-Packing Cylinder - 70D	3
	13266	*FPM*	*13266*	*FPM*	*O-Ring, V-Packing Cylinder - 70D*	*3*
	◆ *701657*	*EPDM*	◆ *701657*	*EPDM*	*O-Ring, V-Packing Cylinder - 70D*	*3*
124	701330	SS	701330	SS	Cylinder, V-Packing	3
126	45564	SS	45564	SS	Adapter, Female	3
	48390	*D*	*48390*	*D*	*Adapter, Female*	*3*
127	44608	STG*	44608	STG*	V-Packing	6
128	704477	SS	704477	SS	Adapter, Male	3
155	48861	NBR	48861	NBR	O-Ring, V-Packing Spacer, Inner - 90D	3
	11748	*FPM*	*11748*	*FPM*	*O-Ring, V-Packing Spacer, Inner - 70D*	*3*
	◆ *701749*	*EPDM*	◆ *701749*	*EPDM*	*O-Ring, V-Packing Spacer, Inner - 70D*	*3*
156	48371	D	48371	D	Back-up-Ring, Spacer, Inner	3
157	45674	SS	45674	SS	Spacer, V-Packing	3
158	48362	D	48362	D	Back-up-Ring, Spacer, Outer	3
159	48860	NBR	48860	NBR	O-Ring, V-Packing Spacer, Outer - 90D	3
	20137	*FPM*	*20137*	*FPM*	*O-Ring, V-Packing Spacer, Outer - 70D*	*3*
	◆ *701492*	*EPDM*	◆ *701492*	*EPDM*	*O-Ring, V-Packing Spacer, Outer*	*3*
160	44756	S	44756	S	Pin, Guide	2
162	21985	PTFE	21985	PTFE	Back-up-Ring, Seat	12/6
163	26089	NBR	26089	NBR	O-Ring, Seat - 80D	12/6
	11377	*FPM*	*11377*	*FPM*	*O-Ring, Seat - 80D*	*12/6*
	◆ *46647*	*EPDM*	◆ *46647*	*EPDM*	*O-Ring, Seat - 80D*	*12/6*
164	44080	SS	44080	SS	Seat	6
166	44081	SS	44081	SS	Valve	6
167	44082	SS	44082	SS	Spring	6
168	44735	PVDF	44735	PVDF	Retainer, Spring	6

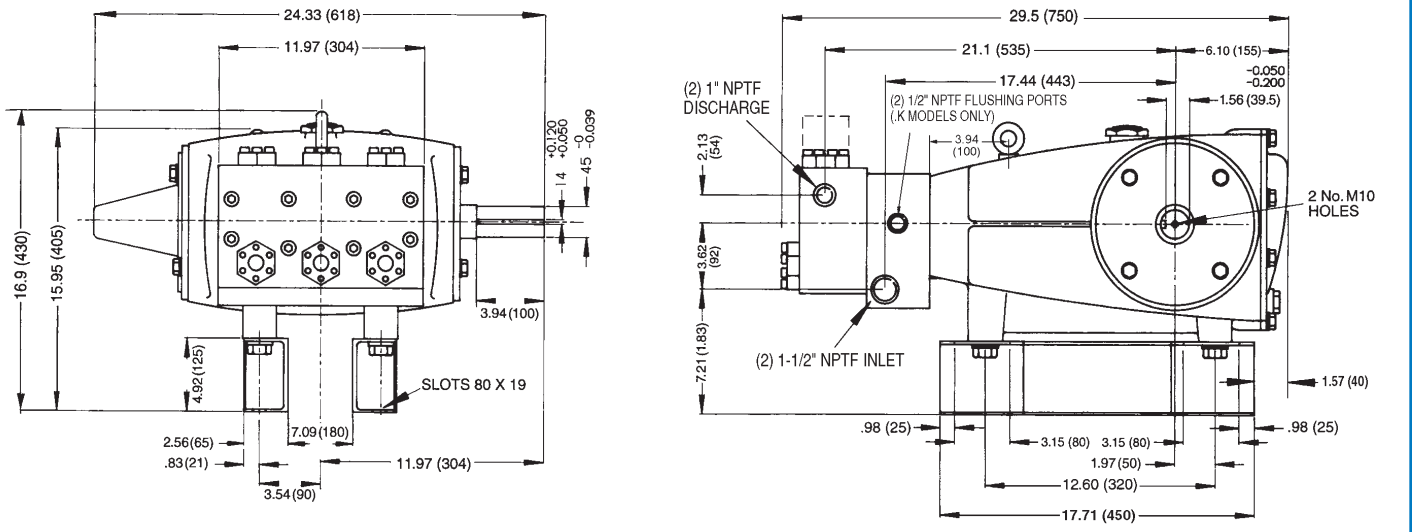
EXPLODED VIEW



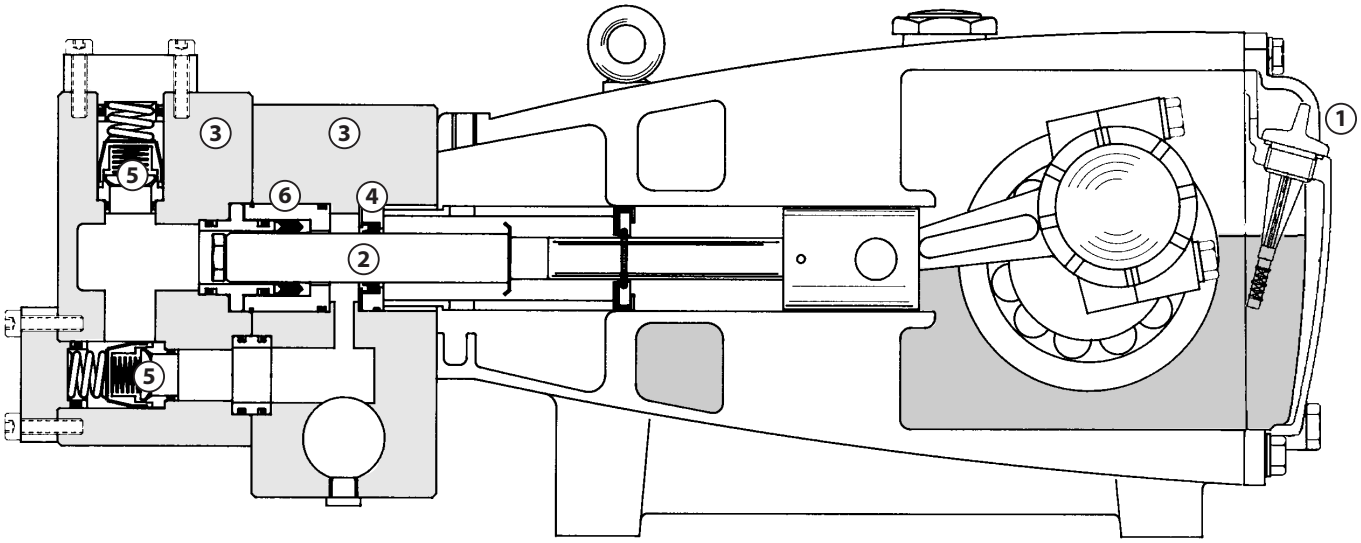
Models
Standard - 6821
Flushed - 6821K
April 2012

	6821	MATL	6821K	MATL		
170	44794	SS	44794	SS	Washer, Retainer	6
171	44793	SS	44793	SS	Spring, Coil	6
172	15853	NBR	15853	NBR	O-Ring, Valve Plug - 70D	6
	11720	*FPM*	*11720*	*FPM*	*O-Ring, Valve Plug - 70D*	*6*
	◆ *701481*	*EPDM*	◆ *701481*	*EPDM*	*O-Ring, Valve Plug - 70D*	*6*
173	20224	PTFE	20224	PTFE	Back-up-Ring, Valve Plug	6
174	701260	SS	701260	SS	Plug, Valve	6
175	87951	S	87951	S	Screw, HSH (M10x30)	36
185	701320	SS	701320	SS	Manifold, Discharge, Block-Style	1
188	701279	S	701279	S	Screw, HSH (M12x100), Lower	4
193	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 w/Keyway [See Tech Bulletin 003]*	*1*
283	*34314*	—	*34314*	—	*Kit, Oil Drain (3/8" x 48")*	*1*
290	*6124*	—	*6124*	—	*Gasket, Liquid (3 oz.)*	*1*
299	***910001***	***SS***	—	—	*Head, Complete, Block-Style*	*1*
	—	—	***910002***	***SS***	*Head, Complete, Block-Style, Flushed*	*1*
300	*701649*	*NBR**	*701649*	*NBR**	*Kit, Seal (Incldes: 97,104,106,112,113,123,127,155,156,158,159)*	1
	33720	*FPM**	*33720*	*FPM**	*Kit, Seal (Incldes: 97,104,106,112,113,123,127,155,156,158,159)*	1
	◆ *702352*	*EPDM*	◆ *702352*	*EPDM*	*Kit, Seal (Incldes: 97,104,106,112,113,123,127,155,156,158,159)*	*1*
310	*34151*	*NBR*	*34151*	*NBR*	*Kit, Valve (Incldes: 162,163,164,166,167,168,170,172,173)*	*2*
	701798	*FPM*	*701798*	*FPM*	*Kit, Valve (Incldes: 162,163,164,166,167,168,170,172,173)*	*2*
	◆ *701799*	*EPDM*	◆ *701799*	*EPDM*	*Kit, Valve (Incldes: 162,163,164,166,167,168,170,172,173)*	*2*
—	*819010*	*F*	*819010*	*F*	*Assy, Crankcase, Cast Iron Conversion*	*1*
370	—	—	***990663***	—	*Assembly, Flushing, 5 gal., 115V, 1.1 Amp, 1/2" NPT*	*1*
390	*714500*	*SS*	*714500*	*SS*	*C.A.T. (Inlet pressure stabilizer for RO and boosted inlet applications)*	1
391	*714506*	*SS*	*714506*	*SS*	*Adapter (2 per C.A.T.) (See Data Sheet for complete selection)*	2
392	*701828*	*SS*	*701828*	*SS*	*Elbow Assy used with adapter Assy 714506*	*1*
—	*6575*	—	*6575*	—	*Plunger Pump Service DVD*	*1*
—	*6105*	—	*6105*	—	*Oil, Twin Pack (Two-2.5 Gal) ISO-68 Hydraulic (Fill to specified crankcase capacity prior to start-up)*	*1*
—	*6119*	—	*6119*	—	*Lubricant, Antiseize (1 oz.)*	*1*

Bold print part numbers are unique to a particular pump model. *Italics are optional items.* ◆Silicone oil/grease required. R Components comply with RoHS Directive.
* Review material codes for individual items (STG generally may be used as alternate).
See Tech Bulletins 003, 024, 036, 074, 077, 083, 084, 087, 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 BBHS=Brass/High Strength CC=Ceramic CM=Chrome-Moly
D=Acetal EPDM=Ethylene Propylene Diene Monamer F=Cast Iron FCM=Forged Chrome-Moly FPM=Fluorocarbon NBR=Medium Nitrile (Buna-N)
PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS SS=316SS SSZZ=316SS/Zamak
STCP=Steel/Chrome Plated STG=Special Blend PTFE White STL=Steel STZP=Steel/Zinc Plated



Models 6821, 6821K



1 **Dipstick** offers top access for easy oil level check.

2 Special concentric, high density, polished, solid ceramic **plungers** provide a true wear surface and extended seal life.

3 **Manifolds** are 316 SS block-style for long-term, continuous-duty and corrosion resistance.

4 **Standard Models:** Lo-Pressure Seals and V-Packings are completely lubricated and cooled by the liquids being pumped.

Flushed Models: permits external flush for added cooling with high temperature liquids and lubrication with low lubricity liquids.

5 316 stainless steel **valves, seats and springs** provide corrosion-resistance, ultimate seating and extended life.

6 Specially formulated, Cat Pump exclusive, **V-Packings** offer unmatched performance and seal life.

CAT PUMPS®
The Pumps with Nine Lives

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