

## 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

#### ⚠ 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](http://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](http://www.catpumps.com/warranty).

**DETERMINING  
THE PUMP R.P.M.**

Rated gpm = "Desired" gpm  
Rated rpm "Desired" rpm

**DETERMINING  
THE REQUIRED H.P.**

gpm x psi = Electric Brake  
1460 H. P. Required

**DETERMINING  
MOTOR PULLEY SIZE**

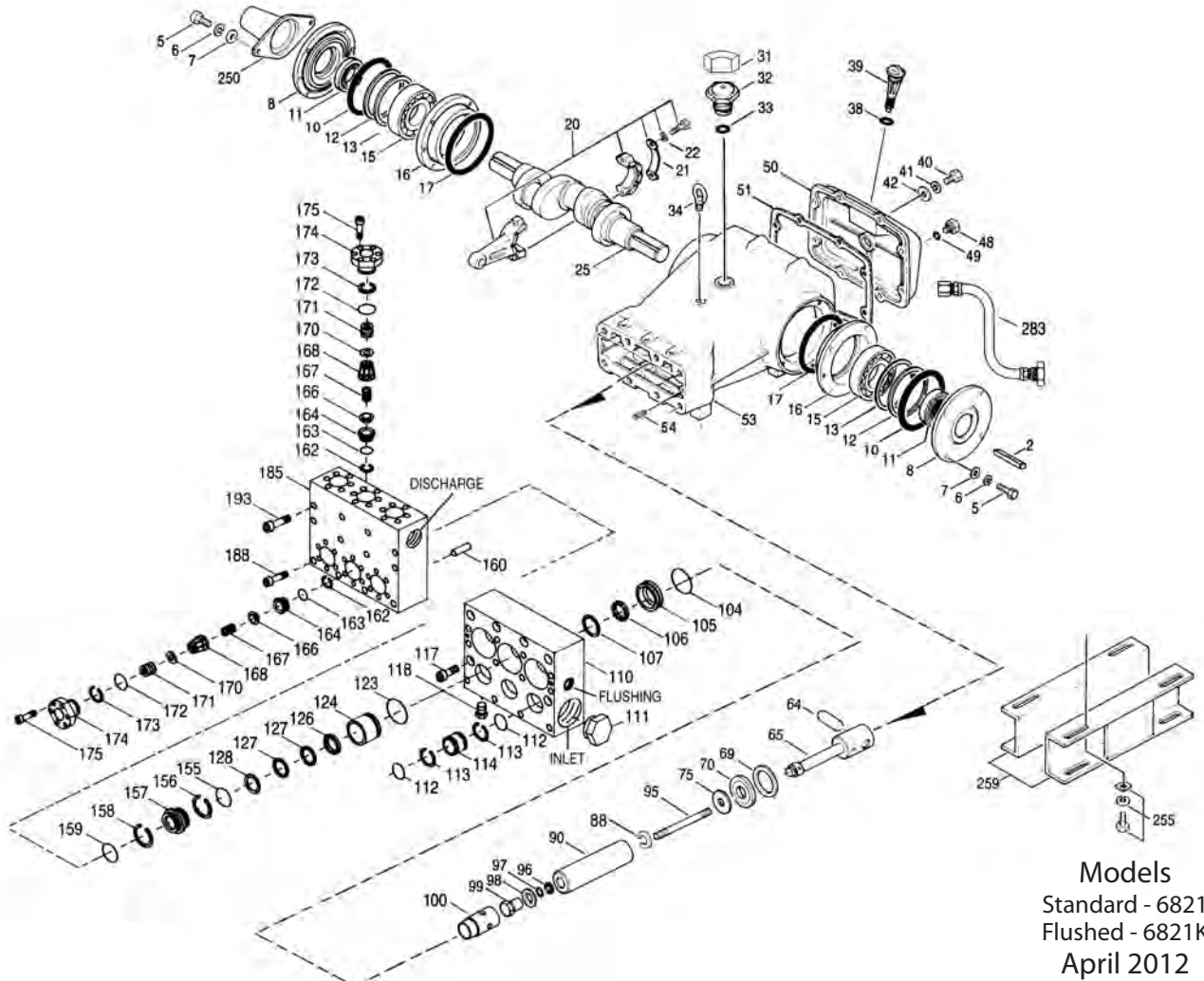
Motor Pulley O.D. = Pump Pulley O.D.  
Pump rpm Motor rpm

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

# PARTS LIST

ITEM	PART NUMBER		DESCRIPTION	QTY
	6821	6821K		
	MATL	MATL		
2	43048	43048	Key (M14x9x90)	1
5	89728	89728	Screw, HH (M10x40)	8
6	15847	15847	Lockwasher (M10)	8
7	19934	19934	Washer, Flat (M10)	8
8	29443	29443	Cover, Bearing, Outer	2
10	29444	29444	O-Ring, Bearing Cover -70D	2
11	11443	11443	Seal, Oil, Crankshaft - 70D	2
12	43642	43642	Washer, Shim (M120x0.3)	0-2
	126594	126594	Washer, Shim (M120x0.3)	0-2
13	126595	126595	Washer, Shim (M120x0.5)	0-2
15	29441	29441	Bearing, Roller	2
16	29442	29442	Cover, Bearing, Inner	2
17	29444	29444	O-Ring, Bearing Cover - 70D	2
20	126612	126612	Assembly, Connecting Rod (Incls: 21, 22)	3
21	126560	126560	Washer, Locking	3
22	126593	126593	Washer, Shim (M10.5x1.5)	6
25	29440	29440	Crankshaft, Dual Shaft	1
31	828710	828710	Protector, Oil Cap w/Foam Gasket	1
32	43211	43211	Cap, Oil Filler	1
33	14177	14177	O-Ring, Filler Cap - 70D	1
34	126743	126743	Bolt, Eye (M12) (For Lifting Pump Only)	1
38	129343	129343	Gasket, Flat Flex	1
39	27769	27769	Stick, Dip	1
40	89627	89627	Screw, HH (M10x30)	8
41	15847	15847	Lockwasher (M10)	8
42	19934	19934	Washer, Flat (M10)	8
48	25625	25625	Plug, Drain (1/4"x19BSP)	1
49	23170	23170	O-Ring, Drain Plug - 70D	1
50	29438	29438	Cover, Rear	1
51	129386	129386	Gasket, Rear Cover	1
53	45303	45303	Crankcase (Incls: 34, 54)	1
54	43282	43282	Pin, Guide	2
64	29481	29481	Pin, Crosshead	3
65	48735	48735	Rod, Plunger	3
69	126588	126588	Washer, Oil Seal	3
70	29454	29454	Seal, Oil Crankcase - 80D	3
75	43865	43865	Slinger, Barrier	3
88	45676	45676	Washer, Keyhole (M16)	3
90	43957	43957	Plunger (M32x145)	3
95	89778	89778	Stud, Plunger Retainer (M10x135)	3
96	20189	20189	Back-up-Ring, Plunger Retainer	3
97	11345	11345	O-Ring, Plunger Retainer - 70D	3
	11375	11375	O-Ring, Plunger Retainer	3
	◆ 701490	◆ 701490	O-Ring, Plunger Retainer	3
98	44085	44085	Gasket, Plunger Retainer	3
99	44084	44084	Retainer, Plunger (M10)	3
100	703084	703084	Retainer, Seal	3
104	43875	43875	O-Ring, Adapter, Inlet - 70D	3
	44826	44826	O-Ring, Adapter, Inlet - 70D	3
	◆ 701656	◆ 701656	O-Ring, Adapter, Inlet - 70D	3
105	45562	45562	Adapter, Inlet, LPS	3
106	44098	44098	Seal, LPS, w/SS-Spg	3
	44827	44827	Seal, LPS, w/SS-Spg	3
	◆ 48244	◆ 48244	Seal, LPS, w/SS-Spg	3
107	44101	44101	Washer, LPS	3
110	701321	701321	Manifold Inlet, Block-Style	1
	—	701322	Manifold Inlet, Block-Style, Flushed	1
111	701116	701116	Plug, Inlet Manifold (1-1/2" NPTM)	1
112	701632	701632	O-Ring, Spacer	6
	701328	701328	O-Ring, Spacer	6
	◆ 701973	◆ 701973	O-Ring, Spacer	6
113	701329	701329	Back-up-Ring, Spacer	6
114	701327	701327	Spacer, Inlet	3
117	89694	89694	Screw, HSH (M16x110)	6
118	701077	—	Plug (1/4" NPTM)	3
123	12391	12391	O-Ring, V-Packing Cylinder - 70D	3
	13266	13266	O-Ring, V-Packing Cylinder - 70D	3
	◆ 701657	◆ 701657	O-Ring, V-Packing Cylinder - 70D	3
124	701330	701330	Cylinder, V-Packing	3
126	45564	45564	Adapter, Female	3
	48390	48390	Adapter, Female	3
127	44608	44608	V-Packing	6
128	704477	704477	Adapter, Male	3
155	48861	48861	O-Ring, V-Packing Spacer, Inner - 90D	3
	11748	11748	O-Ring, V-Packing Spacer, Inner - 70D	3
	◆ 701749	◆ 701749	O-Ring, V-Packing Spacer, Inner - 70D	3
156	48371	48371	Back-up-Ring, Spacer, Inner	3
157	45674	45674	Spacer, V-Packing	3
158	48362	48362	Back-up-Ring, Spacer, Outer	3
159	48860	48860	O-Ring, V-Packing Spacer, Outer - 90D	3
	20137	20137	O-Ring, V-Packing Spacer, Outer - 70D	3
	◆ 701492	◆ 701492	O-Ring, V-Packing Spacer, Outer	3
160	44756	44756	Pin, Guide	2
162	21985	21985	Back-up-Ring, Seat	12/6
163	26089	26089	O-Ring, Seat - 80D	12/6
	11377	11377	O-Ring, Seat - 80D	12/6
	◆ 46647	◆ 46647	O-Ring, Seat - 80D	12/6
164	44080	44080	Seat	6
166	44081	44081	Valve	6
167	44082	44082	Spring	6
168	44735	44735	Retainer, Spring	6

# EXPLODED VIEW



Models  
Standard - 6821  
Flushed - 6821K  
April 2012

	<b>6821</b>	<b>MATL</b>	<b>6821K</b>	<b>MATL</b>		
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	<b>910001</b>	<b>SS</b>	—	—	Head, Complete, Block-Style	1
	—	—	<b>910002</b>	<b>SS</b>	Head, Complete, Block-Style, Flushed	1
300	701649	NBR*	701649	NBR*	Kit, Seal (Incls: 97,104,106,112,113,123,127,155,156,158,159)	1
	33720	FPM*	33720	FPM*	Kit, Seal (Incls: 97,104,106,112,113,123,127,155,156,158,159)	1
	◆ 702352	EPDM	◆ 702352	EPDM	Kit, Seal (Incls: 97,104,106,112,113,123,127,155,156,158,159)	1
310	34151	NBR	34151	NBR	Kit, Valve (Incls: 162,163,164,166,167,168,170,172,173)	2
	701798	FPM	701798	FPM	Kit, Valve (Incls: 162,163,164,166,167,168,170,172,173)	2
	◆ 701799	EPDM	◆ 701799	EPDM	Kit, Valve (Incls: 162,163,164,166,167,168,170,172,173)	2
—	819010	F	819010	F	Assy, Crankcase, Cast Iron Conversion	1
370	—	—	<b>990663</b>	—	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	1
—	—	—	—	—	(Fill to specified crankcase capacity prior to start-up)	
—	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).

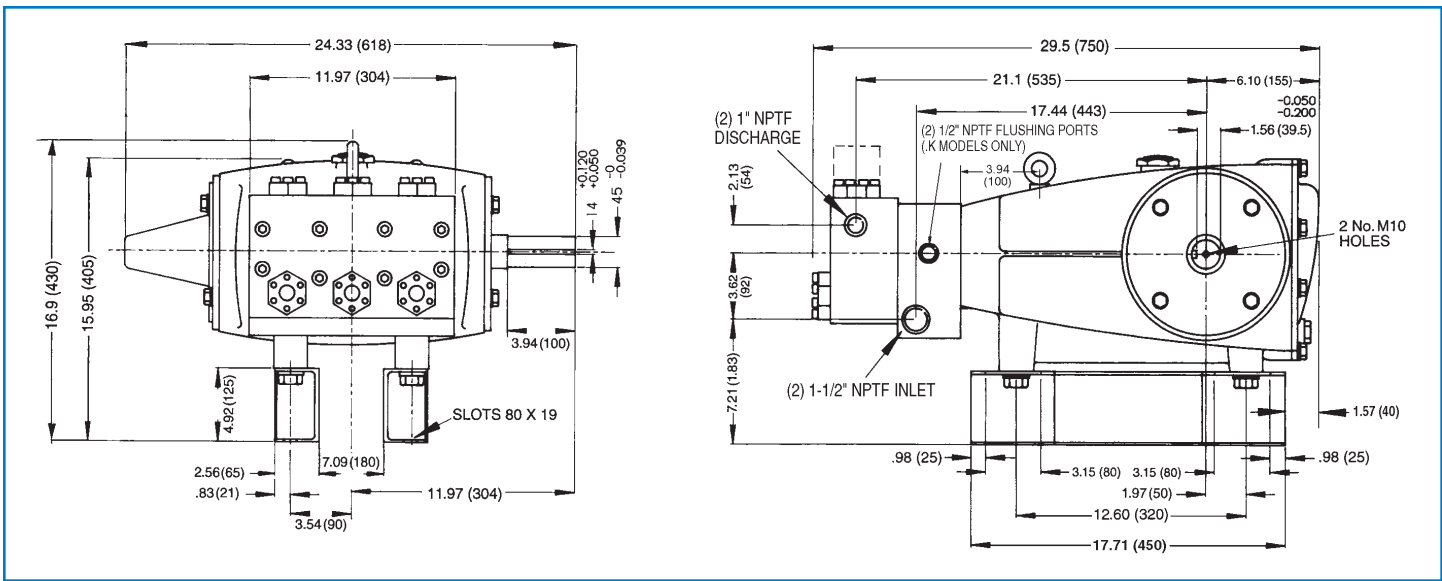
See Tech Bulletins 003, 024, 036, 074, 077, 083, 084, 087, 095 and 105 for additional information. C.A.T. highly recommended for pressurized inlet, R.O. and Industrial applications.

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum BBHS=Brass/High Strength CC=Ceramic CM=Chrome-Moly

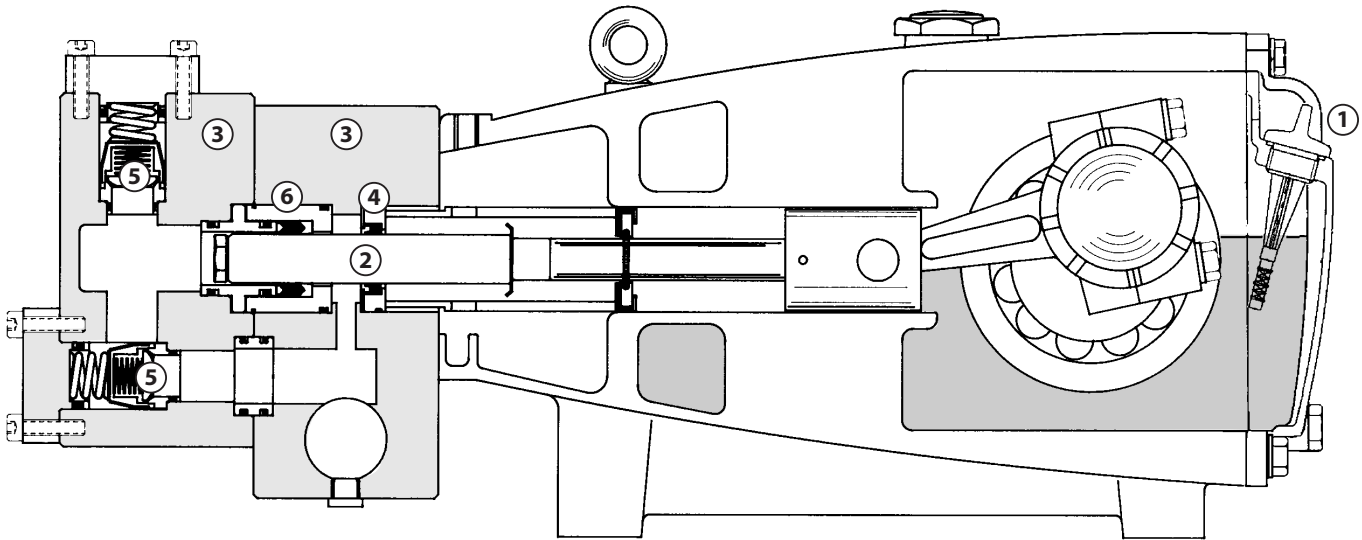
D=Acetal EPDM=Ethylene Propylene Diene Monomer F=Cast Iron FCM=Forged Chrome-Moly FPM=Fluorocarbon NBR=Medium Nitrile (Buna-N)

PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS SS=316SS SSZZ=316SS/Zamark

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**

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