

# DATA SHEET

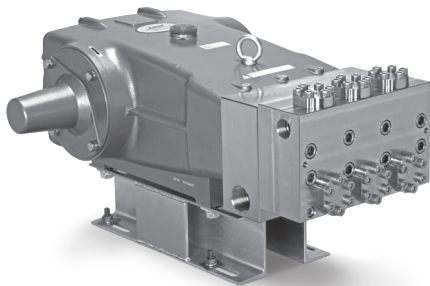
## 68 FRAME BLOCK-STYLE PLUNGER PUMPS



*The Pumps with Nine Lives*

**Stainless Steel Model:**      **6821**

**Flushed Model:**      **6821K**



Model 6821 Shown  
(Shaft protector and rails included)

### FEATURES

- Triplex plunger design ensures high efficiency and low pulsation.
- V-packings and low-pressure seals are completely lubricated and cooled by pumped liquid.
- Special high-density, polished, concentric ceramic plungers provide a true wear surface and extended seal life.
- Model 6821K provides an external flush for higher temperature or low-lubricity liquids.
- Pump comes standard with NBR seals. Alternative seal materials are available for higher temperature or chemical compatibility.

SPECIFICATIONS	U.S. Measure	Metric Measure
Flow	25 gpm	95 lpm
Pressure Range	100–3000 psi	6.9–207 bar
Pump RPM*	615 rpm	615 rpm
Inlet Pressure Range	Flooded to 50 psi	Flooded to 3.5 bar
Max. Liquid Temp. (NBR)	140° F	60° C
<b>Alternate seals available for higher temperatures up to 200° F</b>		
Bore	1.260"	32 mm
Stroke	2.579"	65.5 mm
Crankcase Capacity	10 qts	9.46 l
Inlet Ports (2)	1½" NPT(F)	1½" NPT(F)
Flush Ports (2)	½" NPT(F)	½" NPT(F)
Discharge Ports (2)	1" NPT(F)	1" NPT(F)
Shaft Diameter	1.772"	45 mm
Pulley Mounting	Either Side	Either Side
Weight	355 lbs	161 kg
Dimensions	29.68 x 23.98 x 11.97"	754 x 609 x 304 mm

\*Pump minimum is 100 RPM.

### ALTERNATIVE SEAL CONFIGURATION

MATERIAL	SUFFIX CODE	MAXIMUM TEMPERATURE
NBR	—	140° F (60° C)
FPM	.0110	180° F (82° C)
EPDM	.0220	160° F (71° C)
IPFE	.0770	200° F (93° C)

See **Tech Bulletin 002** for inlet conditions and RPM at high-temperature.

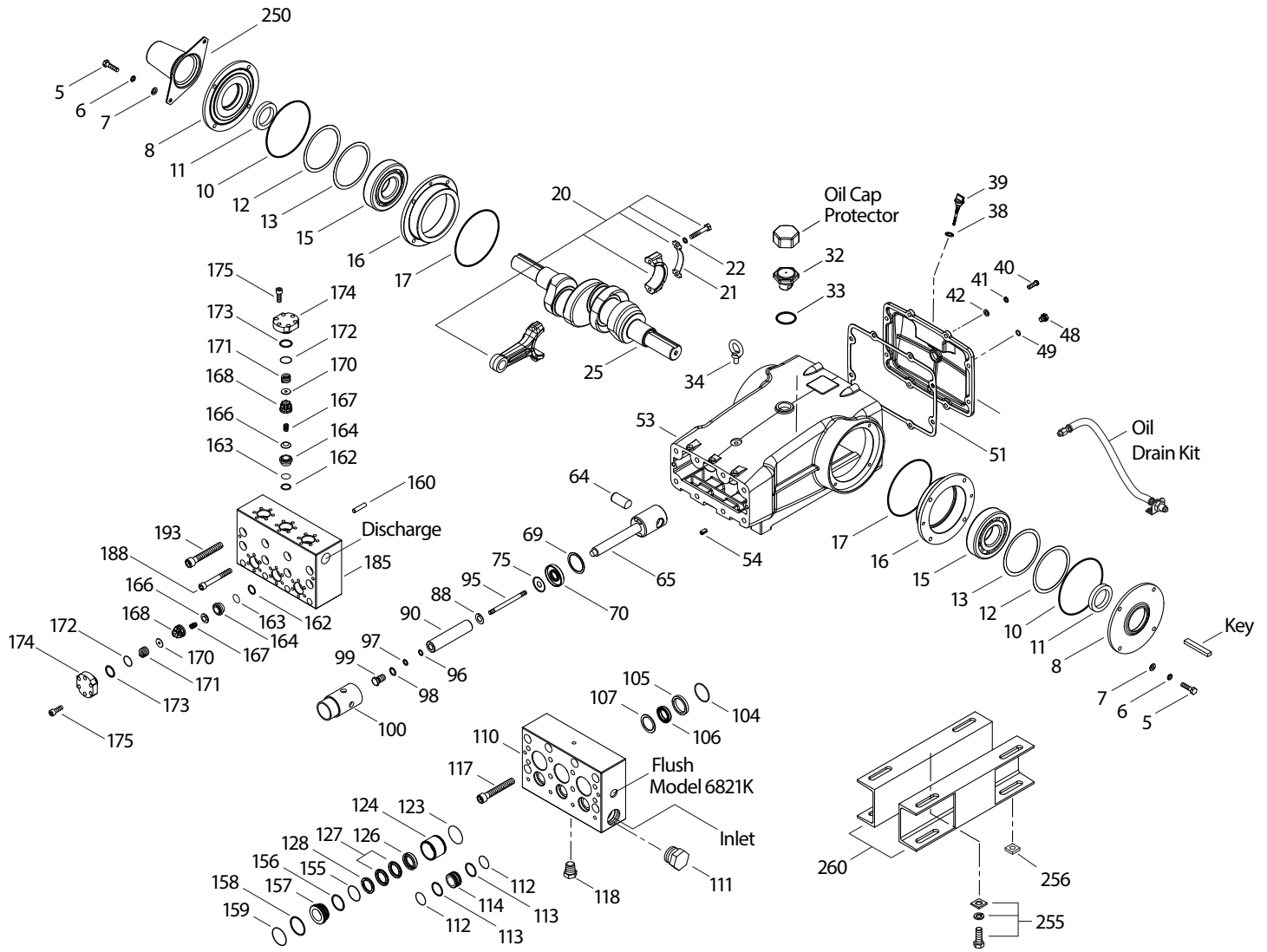
<b>DETERMINING THE PUMP RPM</b>	$\frac{\text{Rated gpm}}{\text{Rated rpm}} = \frac{\text{Desired gpm}}{\text{Desired rpm}}$
<b>DETERMINING THE REQUIRED HP</b>	$\text{hp (Electric Brake)} = \frac{\text{gpm} \times \text{psi}}{1460}$
<b>DETERMINING MOTOR PULLEY SIZE</b>	$\frac{\text{Motor Pulley OD}}{\text{Pump rpm}} = \frac{\text{Pump Pulley OD}}{\text{Motor rpm}}$

Refer to pump **Service Manual** for repair procedure and additional technical information.

# PARTS LIST

ITEM	PART NUMBER		DESCRIPTION		QTY	
	6821	MATL	6821K	MATL		
5	89728	S	89728	S	Screw, HH (M10 x 40) (See Tech Bulletin 074)	8
6	15847	S	15847	S	Lockwasher (M10)	8
7	19934	S	19934	S	Washer, Flat (M10)	8
8	29443	ALE	29443	ALE	Cover, Bearing – Outer (See Tech Bulletin 118)	2
10	29444	NBR	29444	NBR	O-Ring, Bearing Cover–70D	2
11	11443	NBR	11443	NBR	Seal, Oil, Crankshaft	2
12	126594	STCP R	126594	STCP R	Washer, Shim (M120 x 0.3)	0–2
13	126595	STCP R	126595	STCP R	Washer, Shim (M120 x 0.5)	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 (Includes Items: 21, 22) (See Tech Bulletin 074)	3
21	126560	STCP R	126560	STCP R	Washer, Locking	3
22	126593	STCP R	126593	STCP R	Washer, Shim (M10.5 x 1.5)	6
25	29440	FCM	29440	FCM	Crankshaft, Dual Shaft (M65.5)	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 (M10 x 30) (See Tech Bulletin 074)	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 (¼" x 19 BSP)	1
49	23170	NBR	23170	NBR	O-Ring, Drain Plug–70D	1
50	29438	ALE	29438	ALE	Cover, Rear (See Tech Bulletin 118)	1
51	129386	NBR	129386	NBR	Gasket, Rear Cover	1
53	45303	ALE	45303	ALE	Crankcase (Includes Items: 34, 54) (See Tech Bulletin 118)	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	3
75	43865	S	43865	S	Slinger Barrier	3
88	45676	S	45676	S	Washer, Keyhole (M16)	3
90	43957	CC	43957	CC	Plunger (M25 x 145)	3
95	89778	SS	89778	SS	Stud, Plunger Retainer (M10 x 135)	3
96	20189	PTFE	20189	PTFE	Backup Ring, Plunger Retainer	3
97	11345	NBR	11345	NBR	O-Ring, Plunger Retainer–70D	3
98	44085	SS	44085	SS	Gasket, Plunger Retainer	3
99	44084	SS	44084	SS	Retainer, Plunger (M10) (See Tech Bulletin 074)	3
100	703084	D	703084	D	Retainer, Seal	3
104	43875	NBR	43875	NBR	O-Ring, Adapter, Inlet–70D	3
105	45562	SS	45562	SS	Adapter, Inlet, LPS	3
106	44098	NBR	44098	NBR	Seal, LPS, with SS-Spring	3
107	44101	SS	44101	SS	Washer, LPS	3
110	<b>701321</b>	SS	—	—	Manifold Inlet, Block-Style	1
—	—	<b>701322</b>	SS	—	Manifold Inlet, Block-Style, Flushed (Model 6821K)	1
111	701116	SS	701116	SS	Plug, Inlet Manifold [1½" NPT(M)]	1
112	701632	NBR	701632	NBR	O-Ring, Spacer	6
113	701329	PTFE	701329	PTFE	Backup Ring, Spacer	6
114	701327	SS	701327	SS	Spacer, Inlet	3
117	89694	S	89694	S	Screw, HSH (M16 x 110) (See Tech Bulletin 074)	8
118	<b>701077</b>	SS	—	—	Plug [¼" NPT(M)]	3
123	12391	NBR	12391	NBR	O-Ring, V-Packing Cylinder–70D	3
124	701330	SS	701330	SS	Cylinder, V-Packing	3
126	45564	SS	45564	SS	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
156	48371	D	48371	D	Backup Ring, V-Packing, Spacer, Inner	3
157	45674	SS	45674	SS	Spacer, V-Packing	3
158	48362	D	48362	D	Backup Ring, V-Packing, Spacer, Outer	3
159	48860	NBR	48860	NBR	O-Ring, V-Packing Spacer, Outer–90D	3
160	44756	S	44756	S	Pin, Guide IMDM	2
162	21985	PTFE	21985	PTFE	Backup Ring, Seat	6
163	26089	NBR	26089	NBR	O-Ring, Seat–80D	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
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
173	20224	PTFE	20224	PTFE	Backup Ring, Valve Plug	6
174	701260	SS	701260	SS	Plug, Valve	6
175	87951	S	87951	S	Screw, HSH (M10 x 30) (See Tech Bulletin 074)	36
185	701320	SS	701320	SS	Manifold, Discharge, Block-Style	1
188	701279	S	701279	S	Screw, HSH (M12 x 100), Lower (See Tech Bulletin 074)	4
193	89694	S	89694	S	Screw, HSH (M16 x 110), Upper (See Tech Bulletin 074)	8
250	29445	ALE	29445	ALE	Protector, Shaft (Included with Pump) (See Tech Bulletin 118)	1
255	33243	STZP	33243	STZP	Kit, Mount (Included with Pump)	1
256	29649	STCP	29649	STCP	Washer, Slant (M16) Use for Adjustment Between Rail and Mounting Base	4
260	126604	STCP R	126604	STCP R	Rail, Box (Included with Pump)	2

# EXPLODED VIEW



Models  
Standard – 6821  
Flushed – 6821K  
November 2021

## OPTIONAL PARTS AND ACCESSORIES

PART	DESCRIPTION	QTY
43048	Key (M14 x 9 x 90)	1
828710	Protector, Oil Cap with Foam Gasket	1
34314	Kit, Oil Drain	1
990014	Hub, "B", M45 with Keyway	1
819010	Assembly, Crankcase, Cast Iron Conversion	1
990663	Assembly, Flushing, 5 Gal, 115V, 1.1 Amp, 1/2" NPT (Model 6821K)	1

## SERVICE PARTS

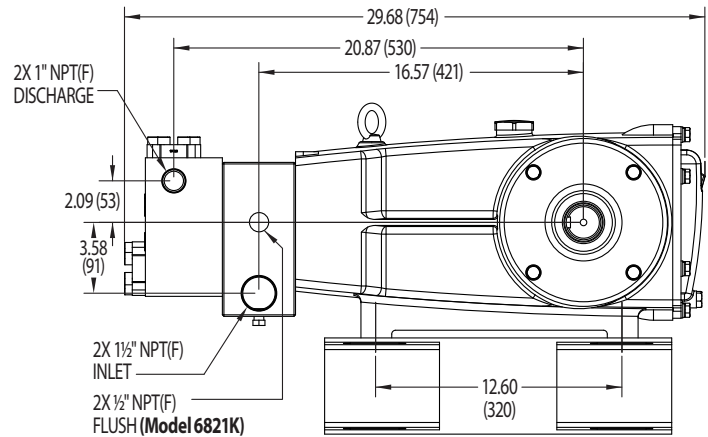
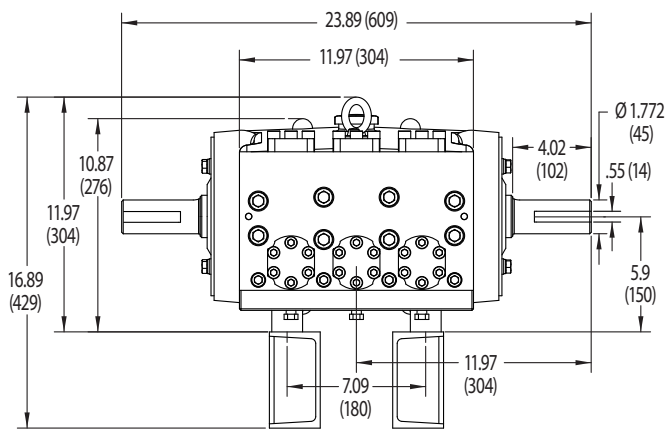
PART	DESCRIPTION	QTY
<b>701649</b>	Kit, Seal – Standard NBR	1
<b>34151</b>	Kit, Valve – Standard NBR	2
6124	Gasket, Liquid (3 oz)	1
6139	Lubricant, Anti-seize (8 oz)	1
6105	Oil, Twin Pack (Two 2.5 Gal) ISO-68 Hydraulic	1
<b>910001</b>	Head, Complete, Block-Style with NBR Seals and O-Rings (Model 6821)	1
<b>910002</b>	Head, Complete, Block-Style with NBR Seals and O-Rings (Model 6821K)	1

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

R Components comply with RoHS Directive. For additional technical information see [www.catpumps.com/literature/tech-bulletins](http://www.catpumps.com/literature/tech-bulletins).

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum ALE=Aluminum Epoxy 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) PE=Polyethylene PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride RBR=Rubber S=304SS SS=316SS SSD=316SS/Duplex SSZZ=316SS/Zamak STCP=Steel/Chrome Plated STG=Special Blend PTFE White STL=Steel STZP=Steel/Zinc Plated

Kits – NBR, FPM (.0110), EPDM (.0220), IPFE (.0770), listed on Page 4.



## SEAL KITS One (1) seal kit required per pump

PUMP MODELS 6821, 6821K	NBR (STD) 701649*	FPM (0.0110) 33720*	EPDM (0.0220) ♦ 702352*	IPFE (0.0770) 76864*		
ITEM (Included in Seal Kits)	PART NUMBER				DESCRIPTION	QTY
97	11345	11375	701490	702961	O-Ring, Plunger Retainer	3
104	43875	44826	701656	702977	O-Ring, Inlet Adapter	3
106	44098	44827	48244	76298	Seal, LPS, with SS-Spring	3
112	701632	701328	701973	703291	O-Ring, Inlet Spacer	6
113	701329	701329	701329	701329	Backup Ring, Spacer	6
123	12391	13266	701657	703481	O-Ring, V-Packing Cylinder	3
127	44608	44608	44608	44608	V-Packing	6
155	48861	11748	701749	703486	O-Ring, V-Packing Spacer, Inner	3
156	48371	48371	48371	28242	Backup Ring, Spacer, Inner	3
158	48362	48362	48362	20464	Backup Ring, Spacer, Outer	3
159	48860	20137	701492	703159	O-Ring, V-Packing Spacer, Outer	3

\* Review material codes for individual items (STG generally may be used as alternate) ♦ Silicone oil/grease required

## VALVE KITS Two (2) valve kits required per pump

PUMP MODELS 6821, 6821K	NBR (STD) 34151	FPM (0.0110) 701798	EPDM (0.0220) ♦ 701799	IPFE (0.0770) 76171		
ITEM (Included in Valve Kits)	PART NUMBER				DESCRIPTION	QTY
162	21985	21985	21985	21985	Backup Ring, Seat	3
163	26089	11377	46647	703244	O-Ring, Seat	3
164	44080	44080	44080	44080	Seat	3
166	44081	44081	44081	44081	Valve	3
167	44082	44082	44082	44082	Spring	3
168	44735	44735	44735	44735	Retainer, Spring	3
170	44794	44794	44794	44794	Washer, Retainer	3
172	15853	11720	701481	702974	O-Ring, Valve Plug	3
173	20224	20224	20224	20224	Backup Ring, Valve Plug	3

♦ Silicone oil/grease required

### ⚠ 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/dynamic-literature/cautions-and-warnings](http://www.catpumps.com/dynamic-literature/cautions-and-warnings) or can be requested directly from Cat Pumps.

### WARRANTY

View the Limited Warranty online at [www.catpumps.com/literature/cat-pumps-limited-warranty](http://www.catpumps.com/literature/cat-pumps-limited-warranty)