

DATA SHEET

68 FRAME BLOCK-STYLE PLUNGER PUMPS

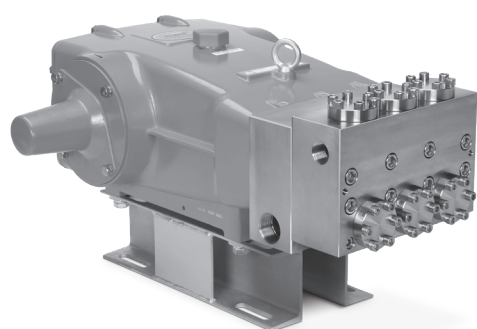


**Stainless Steel
Model:**

6831

**Stainless Steel
Flushed Model:**

6831K



Model 6831 Shown
(Box rails and shaft protector included)

FEATURES

- Triplex plunger design ensures high efficiency and low pulsation.
- V-Packings and low-pressure seals are completely lubricated and cooled, greatly increasing service life.
- Special high-density, polished, concentric ceramic plungers provide a true wear surface and extended seal life.
- Model 6831K provides an external flush for high-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	40 gpm	151 lpm
Pressure Range	100–2300 psi	6.9–159 bar
Pump RPM*	625 rpm	625 rpm
Inlet Pressure Range	Flooded to 50 psi	Flooded to 3.5 bar
Max. Liquid Temp. (NBR)	140° F	60° C
Alternate seals available for higher temperatures up to 200° F		
Bore	1.575"	40 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
Weight	413 lbs	187 kg
Dimensions	29.72 x 24.02 x 12.00"	755 x 610 x 305 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.

DETERMINING THE PUMP RPM

$$\frac{\text{Rated gpm}}{\text{Rated rpm}} = \frac{\text{Desired gpm}}{\text{Desired rpm}}$$

DETERMINING THE REQUIRED HP

$$\frac{\text{hp (Electric Brake)}}{1460} = \frac{\text{gpm} \times \text{psi}}{1460}$$

DETERMINING MOTOR PULLEY SIZE

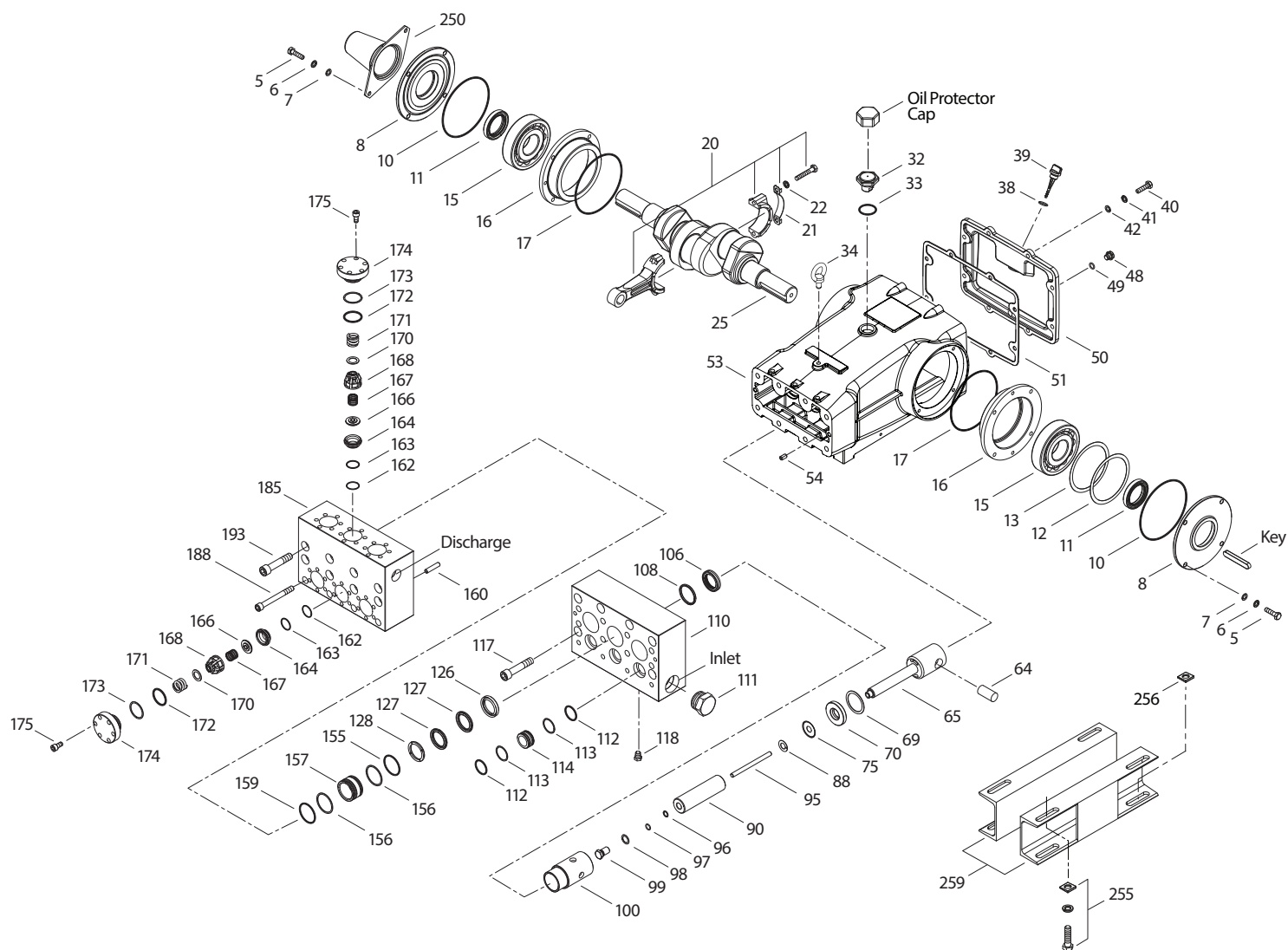
$$\frac{\text{Motor Pulley OD}}{\text{Pump rpm}} = \frac{\text{Pump Pulley OD}}{\text{Motor rpm}}$$

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

PARTS LIST

ITEM	PART NUMBER	MATL	PART NUMBER	MATL	DESCRIPTION	QTY
	6831		6831K			
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-70D	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: 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 End (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 118)	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" 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	133667	ALE	133667	ALE	Crankcase (Includes: 34, 54) (See Tech Bulletin 074)	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	43921	CC	43921	CC	Plunger (M40 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
106	44113	NBR	44113	NBR	Seal, Low-Pressure with SS-Spring	3
108	45381	SS	45381	SS	Spacer, Low-Pressure	3
110	701321	SS	—	—	Manifold Inlet, Block-Style	1
	—	—	701322	SS	Manifold Inlet, Block-Style, Flushed (Model 6831K)	1
111	701116	SS	701116	SS	Plug, Inlet Manifold (1 1/2" NPT[M])	1
112	701632	NBR	701632	NBR	O-Ring, Inlet 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)	6
118	701077	SS	—	—	Plug (1/4" NPT[M])	3
126	45367	SS	45367	SS	Adapter, Female	3
127	44609	STG	44609	STG	V-Packing	6
128	704480	SS	704480	SS	Adapter, Male	3
155	48860	NBR	48860	NBR	O-Ring, V-Packing Spacer, Inner -90D	3
156	48362	D	48362	D	Backup Ring, V-Packing Spacer	6
157	45369	SS	45369	SS	Spacer, V-Packing	3
159	48860	NBR	48860	NBR	O-Ring, V-Packing Spacer, Outer-90D	3
160	44756	S	44756	S	Pin, Guide	2
162	48363	D	48363	D	Backup Ring, Seat	6
163	26142	NBR	26142	NBR	O-Ring, Seat-80D	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
173	48364	D	48364	D	Backup Ring, Valve Plug	6
174	701432	SS	701432	SS	Plug, Valve	6
175	87951	S	87951	S	Screw, HSH (M10 x 30) (See Tech Bulletin 074)	36
185	701431	SS	701431	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 (See Tech Bulletin 118)	1
255	33243	STZP	33243	STZP	Kit, Mount	1
256	29649	STCP	29649	STCP	Washer, Slant (M16) (To Shim and Align Mounting Bolts [Not Included] Through the Box Rail and Mounting Base)	4
259	126604	STCP R	126604	STCP R	Rail, Box	2

EXPLODED VIEW



Models
Stainless Steel – 6831
Flushed – 6831K
May 2022

OPTIONAL PARTS AND ACCESSORIES

PART	DESCRIPTION	QTY
43048	Key (M14 x 9 x 90)	1
828710	Protector, Oil Cap with Foam Gasket	1
990014	Hub, "B", M45 with Keyway (Not Shown)	1
34314	Kit, Oil Drain (3/8" x 48") (Not Shown)	1
88902	Stud (M16 x 277) (For Removal of DM and IM) (Not Shown)	2
819010	Assembly, Crankcase, Cast Iron Conversion (Not Shown)	1
990663	Assembly, Flushing, 5 Gal, 115V, 1.1 Amp, 1/2" NPT (Model 6821K)	1

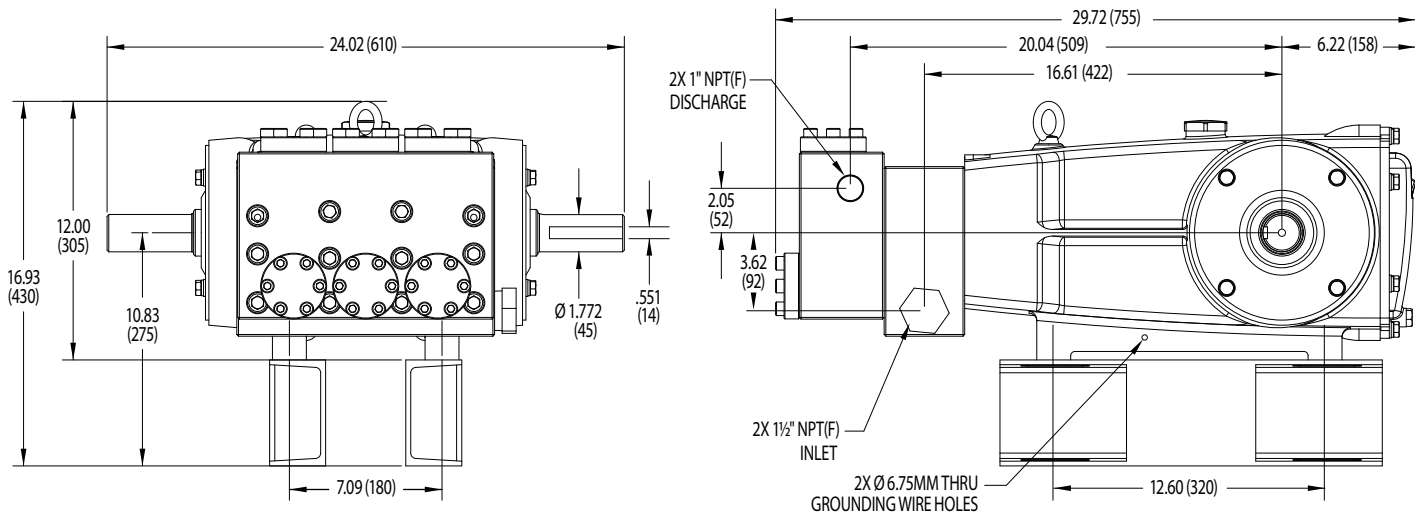
SERVICE PARTS

PART	DESCRIPTION	QTY
701647	Kit, Seal – Standard NBR	1
34017	Kit, Valve – Standard NBR	2
6102	Oil, Jug (2.5 gal) ISO-68 Hydraulic (Fill to Specified Crankcase Capacity Prior to Start-up)	1
6124	Gasket, Liquid (3 oz)	1
6139	Lubricant, Anti-seize (8 oz) (See Tech Bulletin 095)	1
910003	Head, Complete, Block-Style with NBR Seals and O-Rings (Model 6831)	1
910004	Head, Complete, Block-Style with NBR Seals and O-Rings (Model 6831K)	1

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

R Components comply with RoHS Directive. For additional technical information see www.catpumps.com/literature/tech-bulletins.

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic ALE=Aluminum Epoxy BBHS=Brass/High Strength CC=Ceramic CM=Chrome-Moly D=Acetal 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 SSZZ=316SS/Zamak SFG=Special Blend FPM STG=Special Blend PTFE White STL=Steel STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated



SEAL KITS One (1) seal kit required per pump

PUMP MODELS 6831, 6831K	NBR (STD) 701647 *	FPM (.0110) 33708	EPDM (.0220) ♦ 703476*	IPFE (.0770) 31192*		
ITEM (Included in Seal Kits)	PART NUMBER				DESCRIPTION	QTY
97	11345	11375	701490	702961	O-Ring, Plunger Retainer	3
106	44113	44740	46955	76398	Seal, Low-Pressure with SS-Spring	3
112	701632	701328	701973	703159	O-Ring, Inlet Spacer	6
113	701329	701329	701329	701329	Backup Ring, Inlet Spacer	6
127	44609	44741	44609	44609	V-Packing, Set (6 Piece)	3
155	48860	20137	701492	703291	O-Ring, V-Packing Spacer	3
156	48362	48362	48362	48362	Backup Ring, V-Packing Spacer	6
159	48860	20137	701492	703291	O-Ring, V-Packing Spacer	3

♦ Silicone oil/grease required

* Review material codes for individual items (STG, SFG or SFTK generally may be used as alternative)

VALVE KITS Two (2) valve kits required per pump

PUMP MODELS 6831, 6831K	NBR (STD) 34017	FPM (.0110) 31955	EPDM (.0220) ♦ 31952	IPFE (.0770) 76617		
ITEM (Included in Valve Kits)	PART NUMBER				DESCRIPTION	QTY
162	48363	48363	48363	48363	Backup Ring, Valve Seat	3
163	26142	14330	701493	702808	O-Ring, Valve Seat	3
164	44612	44612	44612	44612	Seat	3
166	44108	44108	44108	44108	Valve	3
167	44109	44109	44109	44109	Spring	3
168	44728	44728	44728	44728	Retainer, Spring	3
170	44729	44729	44729	44729	Washer, Spring Retainer	3
172	89827	11747	701494	701369	O-Ring, Valve Plug	3
173	48364	48364	48364	48364	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 or can be requested directly from Cat Pumps.

WARRANTY

View the Limited Warranty online at www.catpumps.com/literature/cat-pumps-limited-warranty