



## 68 Frame Block-Style Stainless Steel Plunger Pump

**Standard Models**      6841, 6861  
**Flushed Models**     6841K, 6861K

### FEATURES

#### Superior Design

- Triplex plunger design provides smoother liquid flow.
- Inlet and discharge valve assemblies interchange for easier maintenance.
- 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 pumped liquid.
- **Flushed Models:** Special ported inlet manifold permits an external flush liquid providing cooling for hi-temp liquids and lubrication for low lubricity liquids.

#### Quality Materials

- Precision design 316 stainless steel valves and seats are hardened and polished for ultimate seating and extended seal 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 offer 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 mean longer bearing life.

#### Easy Maintenance

- Wet-end is easily serviced without entering crankcase, requiring less time and effort.
- 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 6841, 6841K

Flow ..... 48 GPM (182 L/M)  
 Pressure Range ..... 100 to 2000 PSI (7 to 140 BAR)  
 RPM ..... 615 RPM (615 RPM)  
 Bore ..... 1.772" (45 mm)

#### MODEL 6861, 6861K

Flow ..... 60 GPM (227 L/M)  
 Pressure Range ..... 100 to 1200 PSI (7 to 85 BAR)  
 RPM ..... 520 RPM (520 RPM)  
 Bore ..... 2.165" (55 mm)

#### COMMON SPECIFICATIONS

Inlet Pressure Range\* ..... Flooded to 50 PSI (Flooded to 3.5 BAR)  
 Stroke ..... 2.579" (65.5 mm)  
 Crankcase Capacity ..... 10 Qts. (9.46 L)  
 Max. Liquid Temperature ..... 140°F (60°C)  
 Above 130°F call CAT PUMPS for inlet conditions and elastomer recommendations.  
 Inlet Ports (2) ..... 2-1/2" NPTF (2-1/2" NPTF)  
 Flushing Ports (2)\* ..... 1/2" NPTF (1/2" NPTF)  
 Discharge Ports (2) ..... 1-1/4" NPTF (1-1/4" NPTF)  
 Shaft Diameter ..... 1.772" (45 mm)  
 Weight ..... 460 lbs. (206 kg)  
 Dimensions ..... 28.86 x 24.33 x 12.64" (733 x 618 x 321 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

MODEL	FLOW		PRESSURE					RPM
			PSI 900	PSI 1000	PSI 1200	PSI 1500	PSI 2000	
	U.S. GPM	L/M	BAR 60	BAR 70	BAR 85	BAR 105	BAR 140	
<b>6841</b>	48.0	182	N/A	N/A	39.5	49.3	65.8	615
<b>6841K</b>	40.0	151	N/A	N/A	32.9	41.1	54.8	518
<b>6861</b>	60	227	37.0	41.1	49.3	N/A	N/A	520
<b>6861K</b>	50	189	30.8	34.2	41.1	N/A	N/A	433

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

**DETERMINING MOTOR PULLEY SIZE**       $\frac{\text{Motor Pulley O.D.}}{\text{Pump R.P.M.}} = \frac{\text{Pump Pulley O.D.}}{\text{Motor R.P.M.}}$

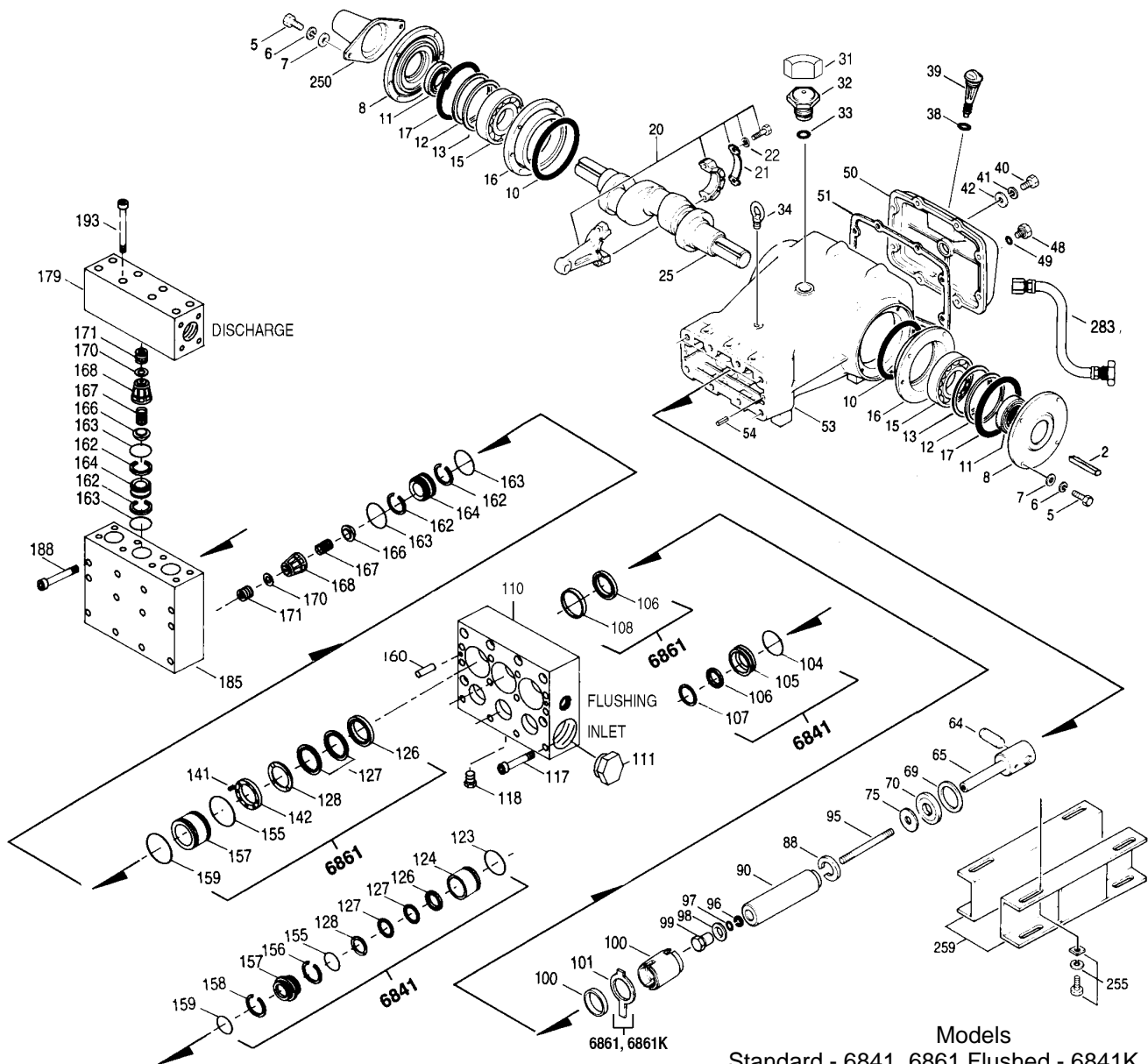
See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 003.  
 Refer to pump **Service Manual** for repair procedure, additional technical information and **pump warranty**.

*"Customer confidence is our greatest asset"*

# PARTS LIST

ITEM	PART NUMBER								DESCRIPTION	QTY
	6841	MATL	6841K	MATL	6861	MATL	6861K	MATL		
2	43048	STL	43048	STL	43048	STL	43048	STL	Key (M14x9x90)	1
5	89728	S	89728	S	89728	S	89728	S	Screw, HH (M10x40)	8
6	15847	S	15847	S	15847	S	15847	S	Lockwasher (M10)	8
7	19934	S	19934	S	19934	S	19934	S	Washer, Flat (M10)	8
8	29443	AL	29443	AL	29443	AL	29443	AL	Cover, Bearing, Outer	2
10	29444	NBR	29444	NBR	29444	NBR	29444	NBR	O-Ring, Bearing Cover - 70D	2
11	11443	NBR	11443	NBR	11443	NBR	11443	NBR	Seal, Oil, Crankshaft - 70D	2
12	43642	STZP	43642	STZP	43642	STZP	43642	STZP	Washer, Shim (M120x0.3)	0-2
	126594	STCP R	126594	STCP R	126594	STCP R	126594	STCP R	Washer, Shim (M120x0.3)	0-2
13	126595	STCP R	126595	STCP R	126595	STCP R	126595	STCP R	Washer, Shim (M120x0.5)	0-2
15	29441	STL	29441	STL	29441	STL	29441	STL	Bearing, Roller	2
16	29442	STL	29442	STL	29442	STL	29442	STL	Cover, Bearing, Inner	2
17	29444	NBR	29444	NBR	29444	NBR	29444	NBR	O-Ring, Bearing Cover - 70D	2
20	126612	BBHS	126612	BBHS	126612	BBHS	126612	BBHS	Rod, Connecting Assembly (Incls: 21, 22)	3
21	126560	STCP R	126560	STCP R	126560	STCP R	126560	STCP R	Washer, Locking	6
22	126593	STCP R	126593	STCP R	126593	STCP R	126593	STCP R	Washer, Shim (M10.5x1.5)	3
25	29440	FCM	29440	FCM	29440	FCM	29440	FCM	Crankshaft, Dual Shaft	1
31	828710	—	828710	—	828710	—	828710	—	Protector, Oil Cap w/Foam Gasket	1
32	43211	ABS	43211	ABS	43211	ABS	43211	ABS	Cap, Oil Filler	1
33	14177	NBR	14177	NBR	14177	NBR	14177	NBR	O-Ring, Filler Cap - 70D	1
34	126743	STCP R	126743	STCP R	126743	STCP R	126743	STCP R	Bolt, Eye (M12) (For Lifting Pump Only)	1
38	11338	NBR	11338	NBR	11338	NBR	11338	NBR	O-Ring, Dip Stick - 70D	1
39	27769	ABS	27769	ABS	27769	ABS	27769	ABS	Dipstick	1
40	89627	S	89627	S	89627	S	89627	S	Screw, HH (M10x30)	8
41	15847	S	15847	S	15847	S	15847	S	Lockwasher (M10)	8
42	19934	S	19934	S	19934	S	19934	S	Washer, Flat (M10)	8
48	25625	STCP	25625	STCP	25625	STCP	25625	STCP	Plug, Drain (1/4"x19BSP)	1
49	23170	NBR	23170	NBR	23170	NBR	23170	NBR	O-Ring, Drain Plug - 70D	1
50	29438	AL	29438	AL	29438	AL	29438	AL	Cover, Rear	1
51	29439	NBR	29439	NBR	29439	NBR	29439	NBR	Gasket, Rear Cover	1
53	45303	AL	45303	AL	45303	AL	45303	AL	Crankcase (Incls:34, 54)	1
54	43282	S	43282	S	43282	S	43282	S	Pin, Guide	2
64	29481	CM	29481	CM	29481	CM	29481	CM	Pin, Crosshead	3
65	45384	SSZZ	45384	SSZZ	45384	SSZZ	45384	SSZZ	Rod, Plunger	3
69	126588	STCP R	126588	STCP R	126588	STCP R	126588	STCP R	Washer, Oil Seal	3
70	29454	NBR	29454	NBR	29454	NBR	29454	NBR	Seal, Oil, Crankcase - 80D	3
75	44752	NBR	44752	NBR	44752	NBR	44752	NBR	Slinger, Barrier - 85D	3
88	45677	SS	45677	SS	45677	SS	45677	SS	Washer, Keyhole (M14)	3
90	45672	CC	45672	CC	44749	CC	44749	CC	Plunger (M45x185) (M55x185)	3
95	44748	SS	44748	SS	44748	SS	44748	SS	Stud, Plunger Retainer (M14x147)	3
96	20214	PTFE	20214	PTFE	20214	PTFE	20214	PTFE	Back-up-Ring, Plunger Retainer	3
97	17616	NBR	17616	NBR	17616	NBR	17616	NBR	O-Ring, Plunger Retainer - 80D	3
	11686	FPM	11686	FPM	11686	FPM	11686	FPM	O-Ring, Plunger Retainer - 80D	3
98	44751	SS	44751	SS	44751	SS	44751	SS	Gasket, Plunger Retainer	3
99	44750	SS	44750	SS	44750	SS	44750	SS	Retainer, Plunger (M14)	3
100	855000	PVDF	855000	PVDF	855000	PVDF	855000	PVDF	Retainer, Seal, 2-Piece	3
101	—	—	—	—	44762	—	44762	—	Wick, Long Tab	3
104	18178	NBR	18178	NBR	—	—	—	—	O-Ring, Inlet, Adapter - 80D	3
	13338	FPM	13338	FPM	—	—	—	—	O-Ring, Inlet, Adapter - 70D	3
105	701355	SS	701355	SS	—	—	—	—	Adapter, LPS	3
106	106147	NBR	106147	NBR	44757	NBR	44757	NBR	Seal, LPS, w/SS-Spg	3
	701752	SFTA*	701752	SFTA*	45882	FPM	45882	FPM	Seal, LPS, w/SS-Spg	3
107	701356	SS	701356	SS	—	—	—	—	Washer, LPS	3
108	—	—	—	—	46167	SS	46167	SS	Spacer, LPS	3
110	46166	SSL	—	—	46166	SSL	—	—	Manifold Inlet, Block-Style	1
	—	—	701343	SSL	—	—	701343	SSL	Manifold Inlet, Block-Style, Flushed	1
111	701353	SS	701353	SS	701353	SS	701353	SS	Plug, Inlet Manifold (2-1/2" NPTM)	1
117	89694	S	89694	S	89694	S	89694	S	Screw, HSH (M16x110)	6
118	701077	SS	—	—	701077	SS	—	—	Plug (1/4" NPTM)	3
123	18178	NBR	18178	NBR	—	—	—	—	O-Ring, V-Packing Cylinder - 80D	3
	13338	FPM	13338	FPM	—	—	—	—	O-Ring, V-Packing Cylinder - 70D	3
124	701357	SSL	701357	SSL	—	—	—	—	Cylinder, V-Packing	3
126	701358	SS	701358	SS	45771	SS	45771	SS	Adapter, Female	3
	—	—	—	—	48392	D	48392	D	Adapter, Female	3
127	104450	STG*	104450	STG*	44764	STG*	44764	STG*	V-Packing	6
128	701359	SS	701359	SS	45772	SS	45772	SS	Adapter, Male	3
141	—	—	—	—	44943	SS	44943	SS	Spring, Coil	18/24
142	—	—	—	—	45383	SS	45383	SS	Spacer w/Coil Springs	3
155	701978	NBR	701978	NBR	18178	NBR	18178	NBR	O-Ring, V-Packing Spacer, Inner	3
	701360	FPM	701360	FPM	13338	FPM	13338	FPM	O-Ring, V-Packing Spacer, Inner	3
156	701361	PTFE	701361	PTFE	—	—	—	—	Back-up-Ring, Spacer, Inner	3
157	701362	SS	701362	SS	—	—	—	—	Spacer, V-Packing w/Coil Springs	3
	—	—	—	—	45321	SS	45321	SS	Spacer, V-Packing	3
158	701363	PTFE	701363	PTFE	—	—	—	—	Back-up-Ring, Spacer, Outer	3
159	18178	NBR	18178	NBR	18178	NBR	18178	NBR	O-Ring, V-Packing Spacer, Outer - 80D	3
	13338	FPM	13338	FPM	13338	FPM	13338	FPM	O-Ring, Spacer, Outer - 70D	3
160	44756	S	44756	S	44756	S	44756	S	Pin, Guide	2
162	23116	PTFE	23116	PTFE	23116	PTFE	23116	PTFE	Back-up-Ring, Seat	12
163	12392	NBR	12392	NBR	12392	NBR	12392	NBR	O-Ring, Seat - 70D	12
	13279	FPM	13279	FPM	13279	FPM	13279	FPM	O-Ring, Seat - 70D	12
164	46173	SS	46173	SS	46173	SS	46173	SS	Seat	6
166	44774	SS	44774	SS	44774	SS	44774	SS	Valve	6
167	44773	SS	44773	SS	44773	SS	44773	SS	Spring	6
168	44775	PVDF	44775	PVDF	44775	PVDF	44775	PVDF	Retainer, Spring	6
170	44776	SS	44776	SS	44776	SS	44776	SS	Washer, Retainer	6
171	701354	SS	701354	SS	701354	SS	701354	SS	Spring, Coil, Retainer	6
179	46176	SSL	46176	SSL	46176	SSL	46176	SSL	Manifold, Discharge - Block-Style	1
185	46171	SSL	46171	SSL	46171	SSL	46171	SSL	Manifold, Valve - Block-Style	1
188	89694	S	89694	S	89694	S	89694	S	Screw, HSH (M16x110), Lower	12
193	89694	S	89694	S	89694	S	89694	S	Screw, HSH (M16x110), Upper	8

# EXPLODED VIEW



Models  
Standard - 6841, 6861 Flushed - 6841K, 6861K  
September 2008

	<b>6841</b>	<b>MATL</b>	<b>6841K</b>	<b>MATL</b>	<b>6861</b>	<b>MATL</b>	<b>6861K</b>	<b>MATL</b>		
250	29445	AL	29445	AL	29445	AL	29445	AL	Protector, Shaft	1
255	33243	STZP	33243	STZP	33243	STZP	33243	STZP	Kit, Mount (Included w/Pump)	2
259	29477	STZP	29477	STZP	29477	STZP	29477	STZP	Rail, Box (Included w/Pump)	2
275	990014	STL	990014	STL	990014	STL	990014	STL	Hub, "B", (M45) (Keyway M14x9x90) [See Drive Packages, Tech Bulletin 003]	1
283	34314	—	34314	—	34314	—	34314	—	Kit, Oil Drain	1
290	6124	—	6124	—	6124	—	6124	—	Gasket, Liquid (3 oz.)	1
299	<b>910201</b>	<b>SSL</b>	—	—	<b>910200</b>	<b>SSL</b>	—	—	Head, Complete, Block-Style	1
	—	—	<b>910203</b>	<b>SSL</b>	—	—	<b>910202</b>	<b>SSL</b>	Head, Complete, Block-Style, Flushed	1
300	—	—	—	—	<b>34106</b>	<b>NBR*</b>	<b>34106</b>	<b>NBR*</b>	Kit, Seal (Incls: 97,106,127,155,159, 163)	1
	<b>34098</b>	<b>NBR*</b>	<b>34098</b>	<b>NBR*</b>	—	—	—	—	Kit, Seal (Incls: 97,104,106,123,127,155,156,158,159, 163)	1
	<b>701365</b>	<b>FPM*</b>	<b>701365</b>	<b>FPM*</b>	<b>33406</b>	<b>FPM*</b>	<b>33406</b>	<b>FPM*</b>	Kit, Seal (Incls: 97,106,127,155,159, 163)	1
310	34105	NBR	34105	NBR	34105	NBR	34105	NBR	Kit, Seal (Incls: 97,104,106,123,127,155,156,158,159, 163)	1
	701801	FPM	701801	FPM	701801	FPM	701801	FPM	Kit, Valve (Incls: 159,162,163,164,166,167,168,170)	2
370	—	—	<b>990663</b>	—	—	—	<b>990663</b>	—	Kit, Valve (Incls: 159,162,163,164,166,167,168,170)	2
—	717500	SS	717500	SS	717500	SS	717500	SS	Assembly, Flushing, 5 gal., 115V, 1.1 Amp, 1/2" NPT	1
—	717510	SS	717510	SS	717510	SS	717510	SS	C.A.T. (Inlet pressure stabilizer for RO and boosted inlet applications)	1
—	6575	—	6575	—	6575	—	6575	—	Adapter (2 per C.A.T.) (See Data Sheet for complete selection)	2
—	819010	F	819010	F	819010	F	819010	F	Plunger Pump Service DVD	1
—	6105	—	6105	—	6105	—	6105	—	Assy, Crankcase, CAST IRON Conversion	1
—	6119	—	6119	—	6119	—	6119	—	Oil, Twin Pack (Two 2.5 Gal) ISO 68 Multi-viscosity Hydraulic (Fill to specified crankcase capacity prior to start-up)	1
—	—	—	—	—	—	—	—	—	Lubricant, Antiseize (1 oz.)	1

**Bold print part numbers are unique to a particular pump model. Italics are optional items. R Complies with RoHS Directive.**

\* Review material codes for individual items (STG and SFTA generally may be used as alternate).

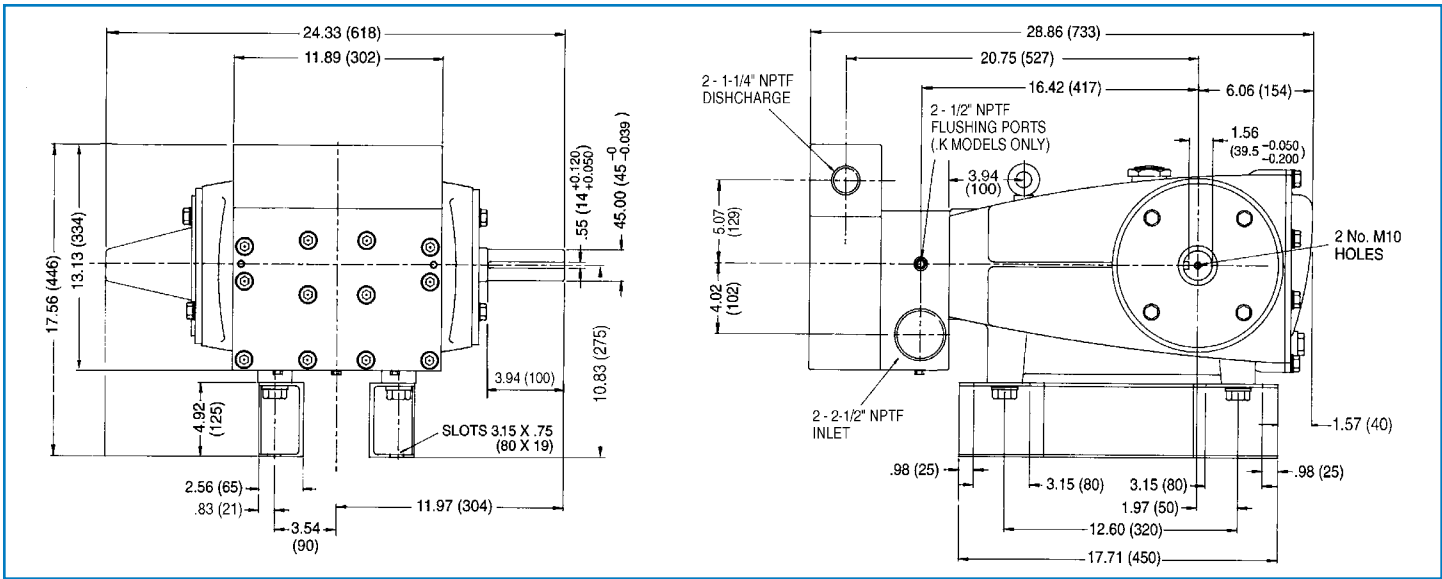
See Tech Bulletin 003, 024, 036, 043, 074, 077, 083, 084, 095 and 105 or additional information. **C.A.T. highly recommended for Hi-Temp, R.O. and industrial applications.**

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

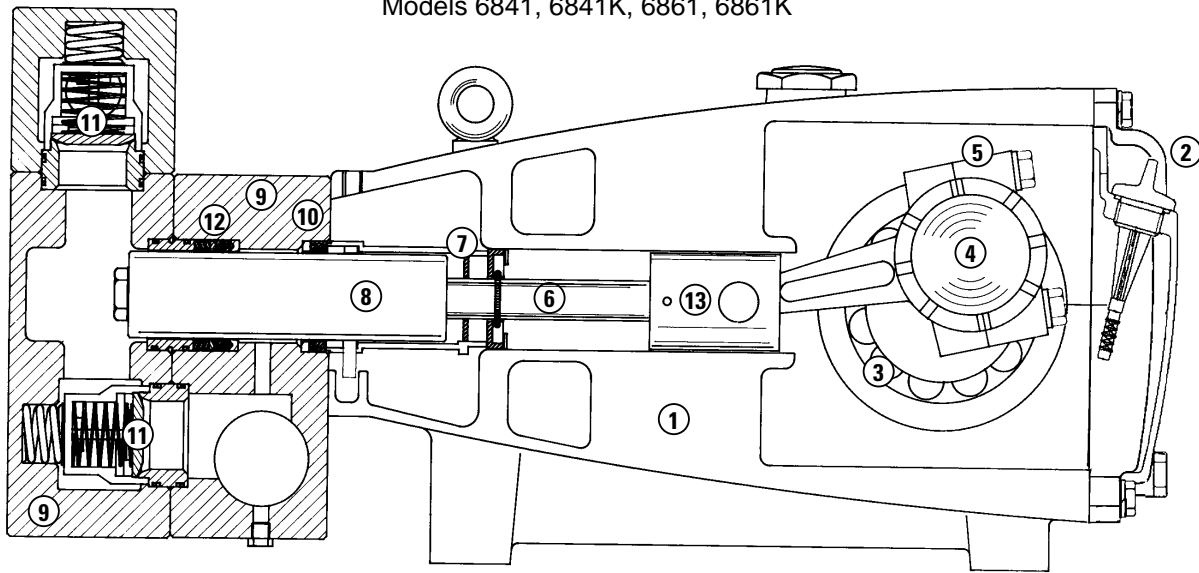
D=Acetal F=Cast Iron FCM=Forged Chrome-moly FPM=Fluorocarbon HS=High Strength NBR=Medium Nitrile (Buna-N)

PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS SS=316SS SSL=316SS/Low Carbon STL=Steel SFTA=Special Blend PTFE Tan

STG=Special Blend PTFE White SSZZ=316SS/Zamak STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated



Models 6841, 6841K, 6861, 6861K



- 1 Die cast aluminum **crankcase** means high strength, lightweight, and excellent tolerance control.
- 2 **Dipstick** offers top access for easy oil level check.
- 3 Oversized crankshaft **bearings** provide extended bearing life and pump performance.
- 4 Chrome-moly **crankshaft** provides unmatched strength and surface hardness for long life.
- 5 Matched oversized high strength **connecting rods** are noted for superior tensile strength and bearing quality.
- 6 Special stainless steel **plunger rods** with high strength crossheads for longevity and corrosion resistance.
- 7 The Buna-N **barrier slinger** provides back-up protection for the crankcase seal, keeping pumped liquids out of the crankcase.
- 8 Special concentric, high-density, polished, solid ceramic **plungers** provide a true wear surface and extended seal life.
- 9 **Manifolds** are 316 SSL block-style for long-term, continuous-duty and corrosion resistance.
- 10 **Standard Models:** Lo-Pressure Seals and V-Packings are completely lubricated and cooled by the liquid being pumped.
- 10 Optional special ported **Flushed Inlet Manifold** permits external flush for lubricating and cooling seals when pumping liquids such as DI water, Hi-Temp or low lubricity.
- 11 316 stainless steel **valves, seats and springs** provide corrosion-resistance, ultimate seating and extended life.
- 12 Specially formulated, CAT PUMP exclusive, **V-Packings** offer unmatched performance and seal life.
- 13 **Crossheads** are 360° supported for uncompromising alignment.

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