

38 Frame Block-Style Stainless Steel Plunger Pump

Standard Models 3821, 3831

Flushed Models 3821K, 3831K

FEATURES

Superior Design

- Triplex plunger design gives smoother liquid flow.
- Inlet and discharge valve assemblies interchangeable 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 liquid being pumped.
- **Flushed Models:** Special ported inlet manifold permits liquid to cool or flush between V-Packings and Lo-Pressure Seals providing protection against high temperatures or contaminating pumped liquids.

Quality Materials

- All 316 stainless steel valves are heat treated and seats are roller burnished for a positive seal and extended valve life.
- 316 SSL block-style manifolds for strength and corrosion resistance.
- Special concentric, high density, polished, graphite impregnated, solid ceramic plungers are abrasion resistant and result in 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.
- Chrome-moly crankshaft gives unmatched strength and surface hardness.
- Oversized crankshaft bearings with greater loading capacity means 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.

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 $\frac{\text{Motor Pulley O.D.}}{\text{Pump R.P.M.}} = \frac{\text{Pump Pulley O.D.}}{\text{Motor R.P.M.}}$

Note: Consult engine manufacturer when using gas or diesel engine. Refer to pump Service Manual for important Inlet Condition Check-List, Start-up Procedure, Tech Bulletins and Pump Maintenance information.

SPECIFICATIONS

	U.S. Measure	Metric Measure
MODEL 3821, 3821K		
Flow.....	23 GPM	(87 L/M)
Pressure Range.....	100 to 2000 PSI	(7 to 140 BAR)
Bore.....	1.260"	(32 mm)
MODEL 3831, 3831K		
Flow.....	36 GPM	(136 L/M)
Pressure Range.....	100 to 1200 PSI	(7 to 85 BAR)
Bore.....	1.575"	(40 mm)

COMMON SPECIFICATIONS

Inlet Pressure	Flooded to 70 PSI*	(Flooded to 4.9 BAR)
RPM	800 RPM	(800 RPM)
Stroke.....	1.890"	(48 mm)
Crankcase Capacity.....	4.2 Qts.	(4 L)
Maximum Liquid Temperature	160°F	(71°C)
Inlet Ports (2).....	1-1/2" NPTF	(1-1/2" NPTF)
Flushing Ports (2).....	1/2" NPTF	(1/2" NPTF)
Discharge Ports (2).....	1" NPT	(1" NPT)
Pulley Mounting	Either Side	(Either Side)
Shaft Diameter	1.378"	(35 mm)
Weight.....	167 lbs.	(75 kg)
Dimensions.....	24.4 x 18.11 x 9.37"	(620 x 460 x 238 mm)

* "K" Models have special inlet ports for flushing and cooling and are suitable for high inlet pressure liquids. Call for clarification.

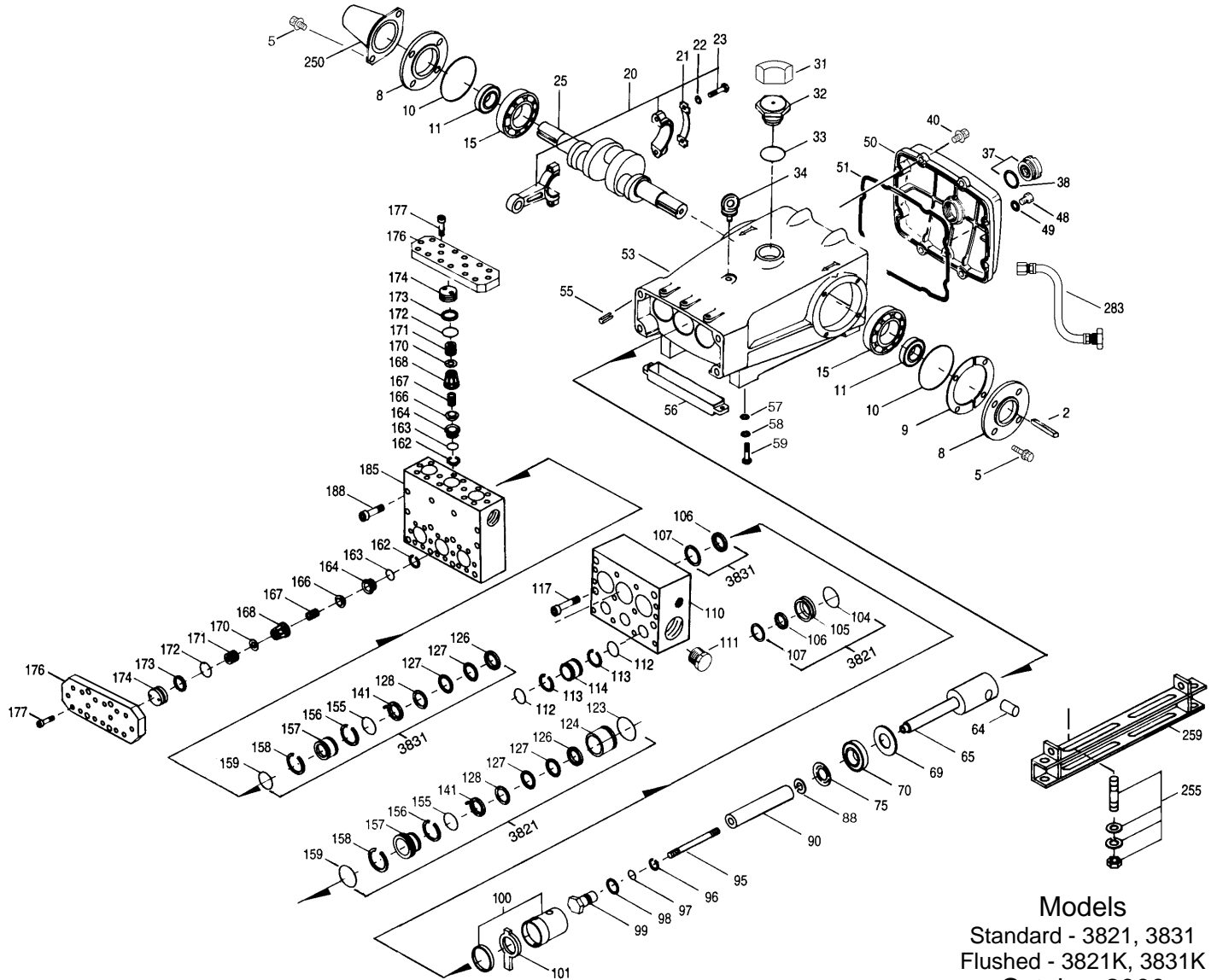
HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE						RPM
			PSI 800	PSI 1000	PSI 1200	PSI 1500	PSI 1800	PSI 2000	
	U.S. GPM	L/M	BAR 55	BAR 70	BAR 85	BAR 105	BAR 125	BAR 140	
3821	23	87	N/A	N/A	N/A	23.7	28.4	31.6	800
3821K	20	76	N/A	N/A	N/A	20.6	24.7	27.4	696
	18	68	N/A	N/A	N/A	18.5	22.2	24.7	626
3831	36	136	19.8	24.7	29.7	N/A	N/A	N/A	800
3831K	30	114	16.5	20.6	24.7	N/A	N/A	N/A	667
	25	95	13.7	17.2	20.6	N/A	N/A	N/A	556

See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 03.

"Customer confidence is our greatest asset"

EXPLODED VIEW



Models
 Standard - 3821, 3831
 Flushed - 3821K, 3831K
 October 2000

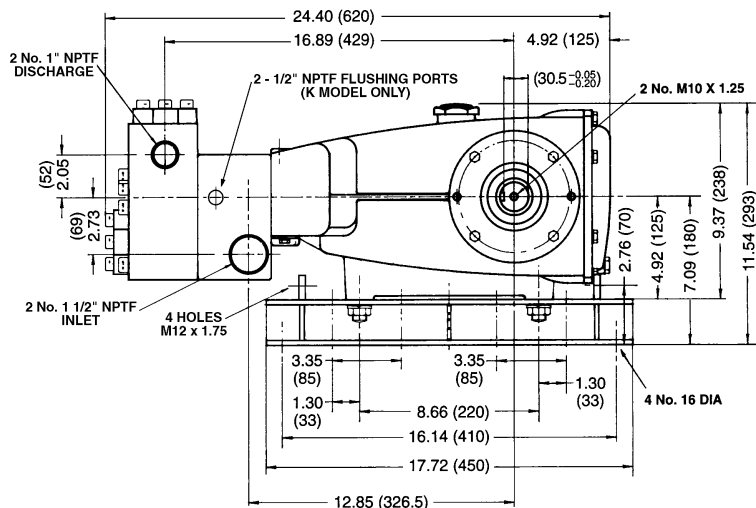
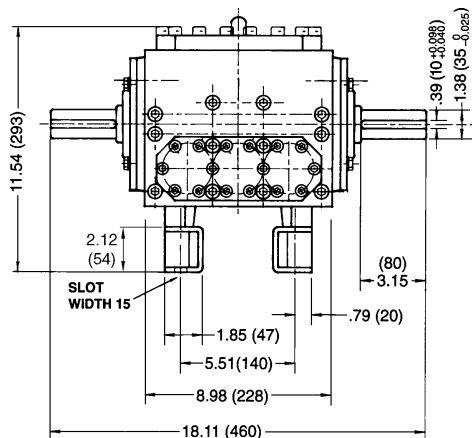
	3821	MATL	3821K	MATL	3831	MATL	3831K	MATL		
173	48364	D	48364	D	48364	D	48364	D	Back-up-Ring, Valve Plug	6
174	701278	SS	701278	SS	701278	SS	701278	SS	Plug, Valve	6
● 176	701316	SS	701316	SS	701316	SS	701316	SS	Cover, Valve	2 ●
177	87951	S	87951	S	87951	S	87951	S	Screw, HSH (M10x30)	32
● 185	701315	SSL	701315	SSL	701315	SSL	701315	SSL	Manifold, Discharge, Block-Style	1 ●
188	701279	S	701279	S	701279	S	701279	S	Screw, HSH (M12x100)	12
● 250	44516	NY	44516	NY	44516	NY	44516	NY	Protector, Shaft w/2 89283 screws	1 ●
● 255	701140	F	701140	F	701140	F	701140	F	Protector, Shaft (Use w/701138, 139, 145, 147, 428)	1 ●
● 255	34039	SS	34039	SS	34039	SS	34039	SS	Kit, Stud Mount	1 ●
● 260	92674	STZP	92674	STZP	92674	STZP	92674	STZP	Mount, Rail, Assy (Incls: 43888, 34018)	1 ●
● 275	990013	STL	990013	STL	990013	STL	990013	STL	Hub, "B", (Keyway M10x8x70) [See Drive Packages Tech 03]	1 ●
● 279	30278	STZP	—	—	30278	STZP	—	—	Oiler (1 oz.)	3 ●
281	30967	—	—	—	30967	—	—	—	Glass, Oiler	3
282	10069	—	—	—	10069	—	—	—	Gasket, Oiler	3
● 283	34334	—	34334	—	34334	—	34334	—	Kit, Oil Drain	1 ●
● 290	6104	—	6104	—	6104	—	6104	—	Gasket, Liquid (1 oz.)	1 ●
● 299	901401	SSL	—	—	901400	SSL	—	—	Head, Complete, Block-Style	1 ●
●	—	—	901405	SSL	—	—	901404	SSL	Head, Complete, Block-Style, Flushed	1 ●
300	701699	NBR	701699	NBR	701698	NBR	701698	NBR	Kit, Seal (Incls: 97, 104, 106, 112, 113, 123, 127, 155, 156, 158, 159)	1
	33269	FPM	33269	FPM	33268	FPM	33268	FPM	Kit, Seal (Incls: 97, 104, 106, 112, 113, 123, 127, 155, 156, 158, 159)	1
	◆ 701714	EPDM	◆ 701714	EPDM	◆ 701797	EPDM	◆ 701797	EPDM	Kit, Seal (Incls: 97, 104, 106, 112, 113, 123, 127, 155, 156, 158, 159)	1
310	34017	NBR	34017	NBR	34017	NBR	34017	NBR	Kit, Valve (Incls: 162, 163, 164, 166, 167, 168, 170, 172, 173)	2
	31255	FPM	31255	FPM	31255	FPM	31255	FPM	Kit, Valve (Incls: 162, 163, 164, 166, 167, 168, 170, 172, 173)	2
	◆ 31252	EPDM	◆ 31252	EPDM	◆ 31252	EPDM	◆ 31252	EPDM	Kit, Valve (Incls: 162, 163, 164, 166, 167, 168, 170, 172, 173)	2
● —	819000	F	819000	F	819000	F	819000	F	Crankcase Assembly, CAST IRON Conversion	1 ●
● 370	—	—	990663	—	—	—	990663	—	Assembly, Flushing, 5 gal., 115V, 1.1 Amp, 1/2"NPT	1 ●
● —	714500	SS	714500	SS	714500	SS	714500	SS	C.A.T. (For R.O. or Industrial Applications)	1 ●
● —	711506	SS	711506	SS	711506	SS	711506	SS	Adapter (2 per C.A.T.) (See Data Sheet for complete selection)	2 ●
● —	6565.7	—	6565.7	—	6565.7	—	6565.7	—	Plunger Pump Service Video	1

● Industrial discount. **Bold print part numbers are unique to a particular pump model.** *Italics are optional items.* ◆ Silicon oil/grease required.

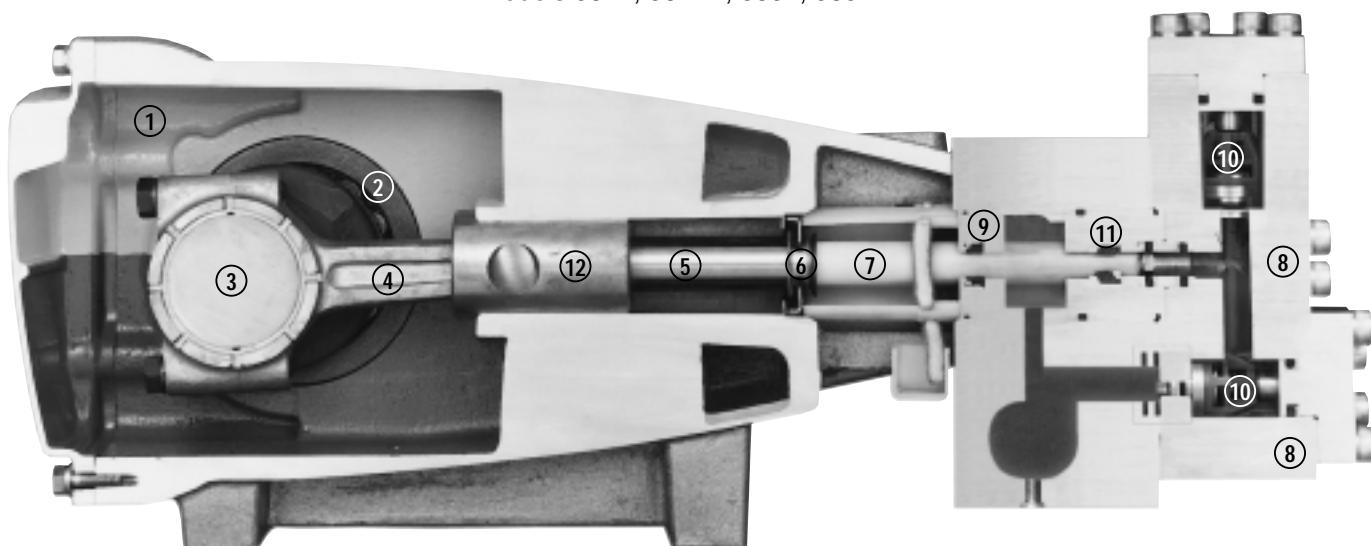
Pressurized Inlet and C.A.T. highly recommended for Hi-Temp, R.O. and industrial applications. See Tech Bulletins 02, 03, 24, 35, 36, 53, 74, 77 and 83 for additional information.

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum CC=Ceramic D=Delrin® EPDM=Ethylene Propylene Diene Monomer F=Cast Iron FBR=Fiber FCM=Forged Chrome-moly FPM=Fluorocarbon (Viton®) HT=Hi-Temp (EPDM Alternative) NBR=Medium Nitrile (Buna-N) NBRs=Buna, Silicone Free NY=Nylon PE=Polyethylene PTFE=Pure Teflon® PVDF=Fluoroplastic (High Strength) S=304SS SF=Special Blend (Viton®) SNG=Special Blend (Buna) SS=316SS SSL=316SS/Low Carbon SSZ=316SS/Zamak STCP=Steel/Chrome Plated STG=Special Blend (Teflon®) White STL=Steel STZP=Steel/Zinc Plated

ORDER CODES: Add to Model Number .0110 for FPM (Viton®), .0220 for EPDM. Consult factory for pricing.



Models 3821, 3821K, 3831, 3831K



- 1 Die cast aluminum **crankcase** means high strength, lightweight, and excellent tolerance control.
- 2 Oversized crankshaft **bearings** provide extended bearing life and pump performance.
- 3 Chrome-moly **crankshaft** provides unmatched strength and surface hardness for long life.
- 4 Matched oversized high strength **connecting rods** are noted for superior strength and bearing quality.
- 5 Special stainless steel **plunger rods** with high strength crossheads for longevity and corrosion resistance.

- 6 The stainless steel **slinger** provides back-up protection for the crankcase seal, keeping pumped liquids out of the crankcase.
- 7 Special concentric, high density, polished, graphite impregnated, solid ceramic **plungers** are abrasion resistant and result in extended seal life.
- 8 **Manifolds** are 316 block-style for long-term, continuous-duty and corrosion resistance.
- 9 **Standard Models:** Lo-Pressure Seals and V-Packings are completely lubricated and cooled by the liquid being pumped.

- 9 **Flushed Models:** Special ported inlet manifold permits liquid to cool or flush between V-Packings and Lo-Pressure Seals providing protection against high temperatures or contaminating pumped liquids.
- 10 Stainless steel **valves, seats and springs** provide corrosion-resistance, positive seating and long life.
- 11 Specially formulated, CAT PUMP exclusive, **V-Packings** offer unmatched performance and seal life.
- 12 **Crossheads** are 360° supported for uncompromising alignment.

Products described hereon are covered by one or more of the following U.S. patents 3558244, 3652188, 3809508, 3920356, 3930756 and 5035580

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