



## 25 Frame Plunger Pump

**Standard Brass Model**

**2530**

**Stainless Steel Model**

**2531**

**Nickel Aluminum Bronze Model**

**2537**

### FEATURES

#### Superior Design

- Triplex plunger design gives smoother liquid flow.
- Hi-Pressure Seals are completely lubricated and cooled by the liquid being pumped.
- Inlet and discharge valve assemblies interchange for easier maintenance.
- Lubricated Lo-Pressure Seals provide double protection against external leakage.
- Oil bath crankcase assures optimum lubrication.
- Close tolerance concentricity of the ceramic plunger maximizes seal life.

#### Quality Materials

- All stainless steel valves are heat treated and seats are roller burnished for a positive seal and extended valve life.
- Brass, 316 Stainless Steel or Nickel Aluminum Bronze manifolds are strong 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, Hi-Pressure Seal offers 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 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

#### MODELS 2530 AND 2531

Flow .....25 GPM (95 L/M)  
 Pressure Range .....100 to 1000 PSI (7 to 70 BAR)  
 RPM .....1025 RPM (1025 RPM)

#### MODEL 2537

Flow .....21 GPM (80 L/M)  
 Pressure Range .....100 to 1200 PSI (7 to 85 BAR)  
 RPM .....860 RPM (860 RPM)

#### COMMON SPECIFICATIONS

Inlet Pressure Range .....Flooded to 70 PSI (Flooded to 4.9 BAR)  
 Bore .....1.260" (32 mm)  
 Stroke .....1.516" (38.5 mm)  
 Crankcase Capacity .....84 oz. (2.5 L)  
 Maximum Liquid Temperature .....160°F (71°C)  
 Inlet Ports (2) .....1-1/4" NPTF (1-1/4" NPTF)  
 Discharge Ports (2) .....3/4" NPTF (3/4" NPTF)  
 Pulley Mounting .....Either Side (Either Side)  
 Shaft Diameter .....1.181" (30 mm)  
 Weight .....82 lbs. (37.1 kg)  
 Dimensions .....19.11 x 15.04 x 7.8" (485.44 x 382 x 198 mm)

### HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE			RPM
	U.S. GPM	L/M	PSI 800 BAR 55	PSI 1000 BAR 70	PSI 1200 BAR 85	
2530, 2531	25	95	13.7	17.2	N/A	1025
	21	80	11.5	14.4	17.3	860
2537	21	80	11.5	14.4	17.3	860
	18	68	9.9	12.3	14.8	738
	15	57	8.2	10.3	12.4	615

**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**

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

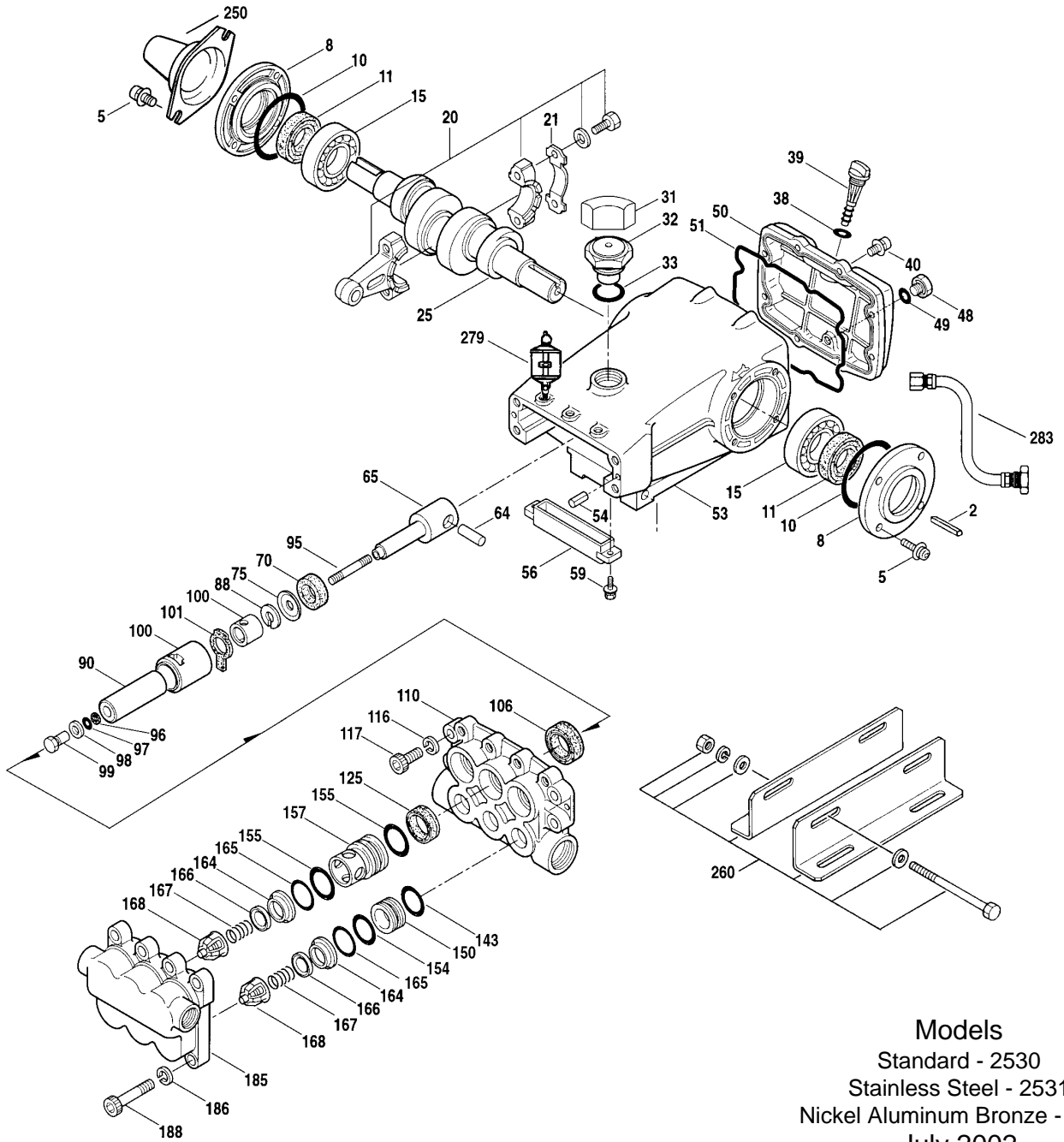
See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 003.  
 Refer to pump Service Manual for repair procedure and additional technical information.

*"Customer confidence is our greatest asset"*

# PARTS LIST

ITEM	2530		2531		2537		DESCRIPTION	QTY
	MATL	MATL	MATL	MATL	MATL	MATL		
● 2	990036	STL	990036	STL	990036	STL	Key (M8x7x40) [2/00]	1 ●
5	92508	STZP	118824	S	118824	S	Screw, Sems HHC (M8x25)	8
8	27773	AL	27773	AL	27773	AL	Cover, Bearing	2
10	27772	NBR	27772	NBR	27772	NBR	O-Ring, Oil Seal Case - 70D	2
11	27771	NBR	27771	NBR	27771	NBR	Seal, Oil, Crankshaft - 70D	2
15	26512	STL	26512	STL	26512	STL	Bearing, Ball	2
20	48613	TNM	48613	TNM	48613	TNM	Rod, Connecting	3
21	48533	STZP	48533	STZP	48533	STZP	Washer, Tab	3
25	48704	FCM	48704	FCM	48704	FCM	Crankshaft - Dual End [2/00]	1
31	828710		828710		828710		Protector, Oil Cap	1
32	43211	ABS	43211	ABS	43211	ABS	Cap, Oil Filler	1
33	14177	NBR	14177	NBR	14177	NBR	O-Ring, Oil Filler Cap -70D	1
38	11338	NBR	11338	NBR	11338	NBR	O-Ring, Dipstick - 70D	1
39	27769	ABS	27769	ABS	27769	ABS	Dipstick	1
40	92508	STZP	118824	S	118824	S	Screw, Sems HHC (M8x25)	8
48	25625	STCP	25625	STCP	25625	STCP	Plug, Drain (1/4"x19BSP)	1
49	23170	NBR	23170	NBR	23170	NBR	O-Ring, Drain Plug - 70D	1
50	27768	AL	27768	AL	27768	AL	Cover, Rear	1
51	27767	NBR	27767	NBR	27767	NBR	O-Ring, Rear Cover - 70D	1
● 53	27762	AL	27762	AL	27762	AL	Crankcase w/Guide Pins	1 ●
54	27488	S	27488	S	27488	S	Pin, Guide	2
56	27790	PE	27790	PE	27790	PE	Pan, Oil	1
59	92519	STZP	92538	S	92538	S	Screw, Sems HHC (M6x16)	2
64	27784	CM	27784	CM	27784	CM	Pin, Crosshead	3
65	† 48592	SSHS	† 48592	SSHS	† 48592	SSHS	Rod, Plunger	3
70	27785	NBR	27785	NBR	27785	NBR	Seal, Crankcase Oil -70D	3
75	110669	S	110669	S	110669	S	Slinger, Barrier	3
88	110670	S	110670	S	110670	S	Washer, Keyhole	3
90	45749	CC	45749	CC	45749	CC	Plunger (M32x93)	3
95	† 89835	SSL	† 89835	SSL	† 89835	SSL	Stud, Retainer (M7x71)	3
96	20184	PTFE	20184	PTFE	20184	PTFE	Back-up-Ring, Plunger Retainer	3
97	14190	NBR	14190	NBR	14190	NBR	O-Ring, Plunger Retainer - 70D	3
	14161	FPM	14161	FPM	14161	FPM	O-Ring, Plunger Retainer	3
	◆ 48239	EPDM	◆ 48239	EPDM	◆ 48239	EPDM	O-Ring, Plunger Retainer	3
98	44069	SSL	44069	SSL	44069	SSL	Gasket, Plunger Retainer	3
99	44068	SSL	44068	SSL	44068	SSL	Retainer, Plunger [7/02]	3
100	110672	NY	110672	NY	110672	NY	Retainer, LPS, Front	3
	111116	NY	111116	NY	111116	NY	Retainer, LPS, Rear	3
101	110796		110796		110796		Wick, Long Tab (M32)	3
106	† 44098	NBR	† 44098	NBR	† 44098	NBR	Seal, LPS w/SS-Spg	3
	44827	FPM	44827	FPM	44827	FPM	Seal, LPS w/SS-Spg	3
	◆ 48244	EPDM	◆ 48244	EPDM	◆ 48244	EPDM	Seal, LPS w/SS-Spg	3
● 110	45750	BB	48583	SSL	45830	NAB	Manifold, Inlet	1 ●
116	30908	STZP	19085	S	19085	S	Lockwasher, Split	4
117	89822	STZP	88398	S	88398	S	Screw, HSH (M12x40)	4
125	† 45832	SNG	† 45832	SNG	† 45832	SNG	Seal, HPS w/SS	3
	48220	STG*	48220	STG*	48220	STG*	Seal, HPS w/SS	3
143	14203	NBR	14203	NBR	14203	NBR	O-Ring, I.V. Adapter-Rear	3
	11731	FPM	11731	FPM	11731	FPM	O-Ring, I.V. Adapter-Rear	3
	◆ 48241	EPDM	◆ 48241	EPDM	◆ 48241	EPDM	O-Ring, I.V. Adapter-Rear	3
150	45752	BB	45835	SSL	45835	SSL	Adapter, Inlet Valve	3
154	18690	NBR	18690	NBR	18690	NBR	O-Ring, I.V. Adapter-Front	3
	11744	FPM	11744	FPM	11744	FPM	O-Ring, I.V. Adapter-Front	3
	◆ 48242	EPDM	◆ 48242	EPDM	◆ 48242	EPDM	O-Ring, I.V. Adapter-Front	3
155	14520	NBR	14520	NBR	14520	NBR	O-Ring, D.V. Spacer	6
	11745	FPM	11745	FPM	11745	FPM	O-Ring, D.V. Spacer	6
	◆ 28240	EPDM	◆ 28240	EPDM	◆ 28240	EPDM	O-Ring, D.V. Spacer	6
157	45751	BB	45834	SS	45834	SS	Spacer, Discharge Valve	3
164	† 46857	SSL	† 46857	SSL	† 46857	SSL	Seat [1/96]	6
165	14014	NBR	14014	NBR	14014	NBR	O-Ring, Seat	6
	48238	FPM	48238	FPM	48238	FPM	O-Ring, Seat	6
	◆ 48243	EPDM	◆ 48243	EPDM	◆ 48243	EPDM	O-Ring, Seat	6
166	45839	SSL	45839	SSL	45839	SSL	Valve	6
167	† 45840	SS	† 45840	SS	† 45840	SS	Spring	6
168	110682	PVDF	110682	PVDF	110682	PVDF	Retainer, Spring	6
● 185	45753	BBCP	48585	SSL	45836	NAB	Manifold, Discharge	1 ●
186	30908	STZP	19085	S	19085	S	Lockwasher, Split	8
188	89573	STCP	89628	S	89628	S	Screw, HSH (M12x65)	8
250	26516	STCP	26516	STCP	26516	STCP	Protector, Shaft	1
260	30614	STZP	30614	STZP	30614	STZP	Rail, Angle Assy (Incls: 27808, 30902, 30930, 30908, 30911)	1
● 269	30206	F	30206	F	30206	F	Pulley (10") [See Drive Packages, Tech Bulletin 003]	1 ●
● 270	30059	STL	30059	STL	30059	STL	Hub, "H", M30 (Keyway M8) [See Drive Packages, Tech Bulletin 003] [2/00]	1 ●
● 279	30278	STZP	30278	STZP	30278	STZP	Oilers (1 oz.)	3 ●
281	30967		30967		30967		Glass, Oiler	3
282	10069	NBR	10069	NBR	10069	NBR	Gasket, Oiler	3
● 283	34334		34334		34334		Kit, Oil Drain	1 ●

# EXPLODED VIEW



Models  
 Standard - 2530  
 Stainless Steel - 2531  
 Nickel Aluminum Bronze - 2537  
 July 2002

	2530	MATL	2531	MATL	2537	MATL		
●	290	6104	6104	6104	6104	NAB	Gasket, Liquid (1 oz.)	1 ●
●	299	814838	BB	816735	SS	816538	Head, Complete	1 ●
	300	30952	NBR	30952	NBR	30952	Kit, Seal (Incls: 97, 106, 125, 143, 154, 155)	1
		33607	FPM*	33607	FPM*	33607	Kit, Seal (Incls: 97, 106, 125, 143, 154, 155)	1
		◆ 33608	EPDM*	◆ 33608	EPDM*	◆ 33608	Kit, Seal (Incls: 97, 106, 125, 143, 154, 155)	1
	310	33952	NBR	33952	NBR	33952	Kit, Valve (Incls: 143, 154, 155, 164, 166, 167, 168, 165) [Prior to 11/95 6 Req.] [1/96]	2
		31267	FPM	31267	FPM	31267	Kit, Valve (Incls: 143, 154, 155, 164, 166, 167, 168, 165) [Prior to 11/95 6 Req.] [1/96]	2
		◆ 31268	EPDM	◆ 31268	EPDM	◆ 31268	Kit, Valve (Incls: 143, 154, 155, 164, 166, 167, 168, 165) [Prior to 11/95 6 Req.] [1/96]	2
●	—	714500	SS	714500	SS	714500	C.A.T. (For R.O. or Industrial Applications)	1 ●
●	—	714505	SS	714505	SS	714505	Adapter (2 per C.A.T.) (See Data Sheet for complete selection)	2 ●
—	—	6565.2		6565.2		6565.2	Plunger Pump Service Video	1
—	—	6100		6100		6100	Oil, Case (12 Bottles) ISO 68 Multi-viscosity Hydraulic (Fill to specified crankcase capacity prior to start-up)	1

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

[ ] Date of latest production change. \*Review material codes for individual items (STG generally may be used as alternate).

See Tech Bulletins 002, 003, 024, 036, 043, 053, 074, 076, 077, 083 and 085 for additional information. † Production parts are different than service parts.

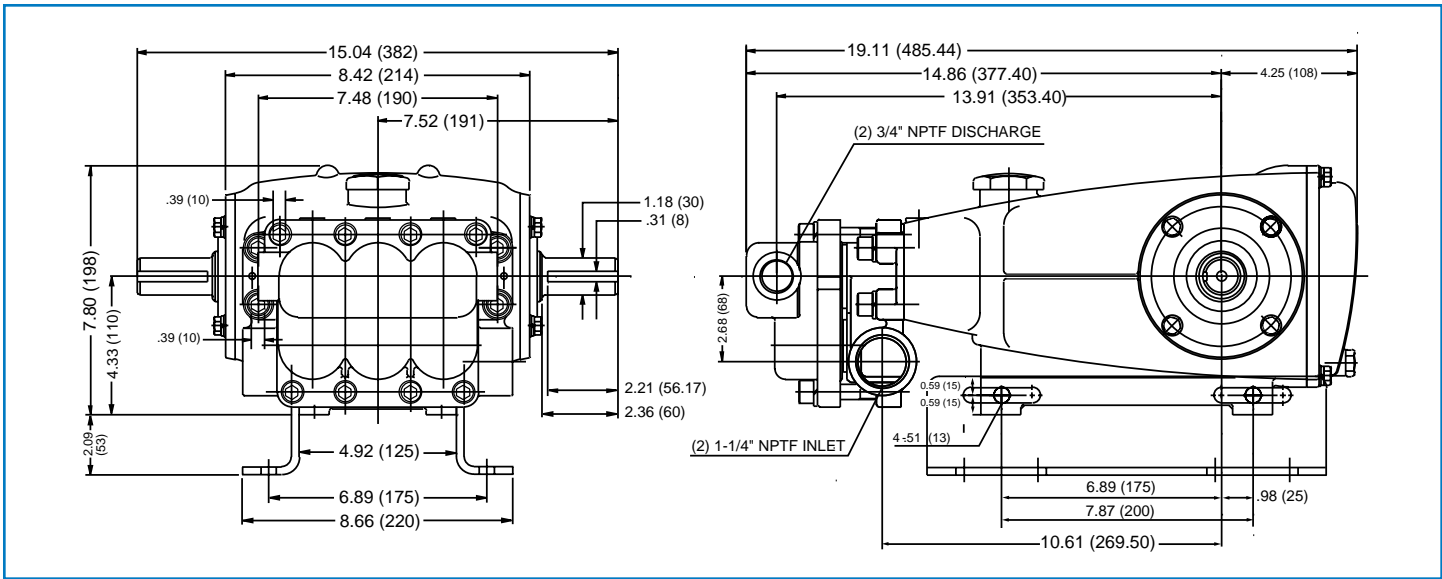
MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum BB=Brass BCCP=Brass/Chrome Plated CM=Chrome-moly

EPDM=Ethylene Propylene Diene Monomer F=Cast Iron FCM=Forged Chrome-moly FPM=Fluorocarbon (Viton®) HS=High Strength

NAB=Nickel Aluminum Bronze NBR=Medium Nitrile (Buna-N) NY=Nylon PE=Polyethylene PTFE=Pure Teflon® PVDF=Fluoroplastic (High Strength)

S=304SS SS=316SS SNG=Special Blend (Buna) Black SSL=316SS/Low Carbon STG=Special Blend (Teflon®) White STL=Steel SSHS=316SS/High Strength

STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated TNM=Special High Strength



Models 2530, 2531, 2537



- 1 Die cast aluminum **crankcase** means high strength, light weight, 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 strength and bearing quality.
- 6 Special stainless steel **plunger rods** with high tensile strength crossheads for long life.
- 7 The stainless steel **slinger** provides back-up protection for the crankcase seal, keeping pumped liquids out of the crankcase.
- 8 Special concentric, high density, polished, graphite impregnated, solid ceramic **plungers** are abrasion resistant and result in extended seal life.
- 9 **Manifolds** are a high tensile strength brass, 316 stainless steel or nickel aluminum bronze for long term, continuous duty.
- 10 100% wet **seal** design adds to service life by allowing pumped liquids to cool and lubricate on both sides.
- 11 Stainless steel **valves, seats and springs** provide corrosion-resistance, positive seating and long life.
- 12 Specially formulated, CAT PUMP exclusive, **Hi-Pressure Seals** offer unmatched performance and seal life.
- 13 **Crosshead** is 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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