

25 Frame Plunger Pump

Standard Brass Model

Stainless Steel Model

2510

2511

FEATURES

Superior Design

- Triplex plunger design gives smoother liquid flow.
- V-Packings 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

- Precision design 316SSL valves and seats are hardened and polished for ultimate seating and extended valve life.
- Forged brass or Stainless Steel 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, 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 mean longer bearing life.

Easy Maintenance

- Wet-end is easily serviced without entering crankcase, requiring less time and effort.
- Valve assemblies are accessible without disturbing piping, for quick service.
- 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 2510

Flow20 GPM (76 L/M)
Pressure Range100 to 2000 PSI (7 to 140 BAR)

MODEL 2511

Flow20 GPM (76 L/M)
Pressure Range100 to 1500 PSI (7 to 105 BAR)

COMMON SPECIFICATIONS

RPM1450 RPM (1450 RPM)
Inlet Pressure RangeFlooded to 70 PSI (Flooded to 4.9 BAR)
Bore0.984" (25 mm)
Stroke1.516" (38.5 mm)
Crankcase Capacity84 oz. (2.5 L)
Maximum Liquid Temperature140°F (60°C)

Above 130°F call CAT PUMPS for inlet conditions and elastomer recommendations.

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 (2510).....79 lbs. (36 kg)
(2511)75 lbs. (34 kg)
Dimensions20.16 x 15.04 x 8.7" (512 x 382 x 220 mm)

HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE					RPM
			PSI 1000	PSI 1200	PSI 1500	PSI 1800	PSI 2000	
	U.S. GPM	L/M	BAR 70	BAR 85	BAR 105	BAR 125	BAR 140	
2510	20	76	13.7	16.5	20.6	24.7	27.5	1450
	18	68	12.3	14.8	18.5	22.2	24.7	1305
	15	57	10.3	12.4	15.4	18.5	20.6	1088
2511	20	76	13.7	16.5	20.6	N/A	N/A	1450
	18	68	12.3	14.8	18.5	N/A	N/A	1305
	15	57	10.3	12.4	15.4	N/A	N/A	1088

DETERMINING THE PUMP R.P.M. $\frac{\text{Rated G.P.M.}}{\text{Rated R.P.M.}}$ = "Desired" G.P.M. / "Desired" R.P.M.

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

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

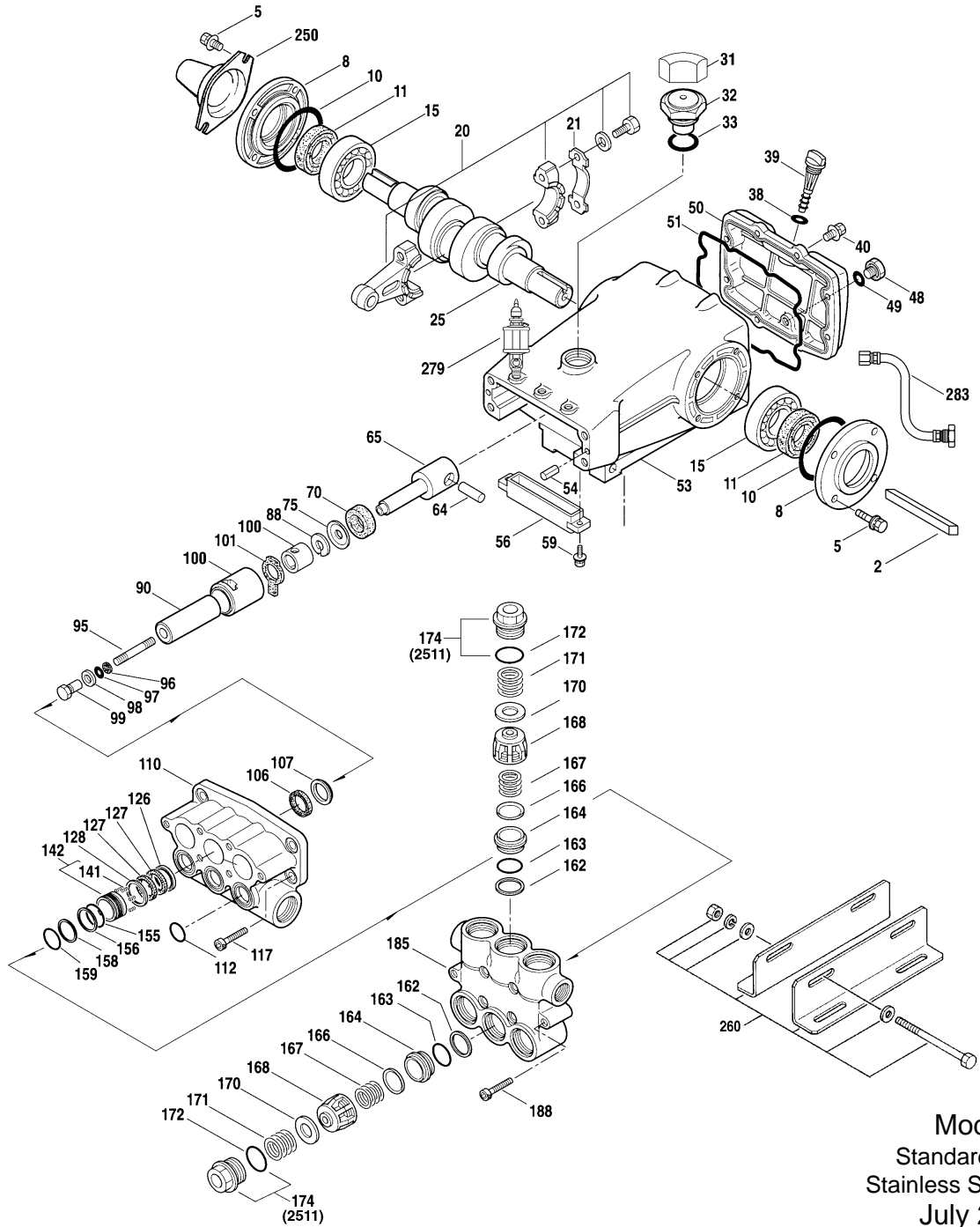
See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 003.
Refer to pump **Service Manual** for repair procedure, additional technical information and **pump warranty**.

"Customer confidence is our greatest asset"

PARTS LIST

ITEM	PART NUMBER		DESCRIPTION	QTY
2	2510	2511	Key (M8x7x40)	1
5	990036 MATL STL	990036 MATL STL	Screw, HHC Sems (M8x25)	8
8	92508 STZP AL	118824 S AL	Cover, Bearing	2
10	27773 NBR	27772 NBR	O-Ring, Bearing Cover - 70D	2
11	27771 NBR	27771 NBR	Seal, Oil, Crankshaft - 70D	2
15	26512 STL	26512 STL	Bearing, Ball	2
20	48613 TNM	48613 TNM	Rod, Connecting Assembly	3
21	48533 STZP	48533 STZP	Washer, Locking	3
25	48704 FCM	48704 FCM	Crankshaft, Dual-End	1
31	828710 —	828710 —	Protector, Oil Cap	1
32	43211 ABS	43211 ABS	Cap, Oil Filler	1
33	14177 NBR	14177 NBR	O-Ring, Oil Filler Cap - 70D	1
38	11338 NBR	11338 NBR	O-Ring, Dip Stick - 70D	1
39	27769 ABS	27769 ABS	Dip Stick	1
40	92508 STZP	118824 S	Screw, HHC Sems (M8x25)	8
48	25625 STCP	25625 STCP	Plug, Drain (1/4"x19BSP)	1
49	23170 NBR	23170 NBR	O-Ring, Drain Plug - 70D	1
50	27768 AL	27768 AL	Cover, Rear	1
51	27767 NBR	27767 NBR	O-Ring, Rear Cover - 70D	1
53	27762 AL	27762 AL	Crankcase w/Guide Pins	1
54	27488 S	27488 S	Pin, Guide	2
56	27790 PE	27790 PE	Pan, Oil	1
59	92519 STZP	92538 S	Screw, HHC Sems (M6x16)	2
64	27784 CM	27784 CM	Pin, Crosshead	3
65	‡ 48592 SSHS	‡ 48592 SSHS	Rod, Plunger	3
70	27785 NBR	27785 NBR	Seal, Crankcase Oil - 70D	3
75	110669 S	110669 S	Slinger, Barrier	3
88	110670 S	110670 S	Washer, Keyhole	3
90	48535 CC	48535 CC	Plunger, Ceramic (M25x110)	3
95	48534 STZP	48679 SS	Stud, Plunger Retainer (M7x88 and M7x87)	3
96	20184 PTFE	20184 PTFE	Back-up-Ring, Plunger Retainer	3
97	14190 NBR	14190 NBR	O-Ring, Plunger Retainer - 70D	3
	14161 <i>FPM</i>	14161 <i>FPM</i>	O-Ring, Plunger Retainer - 70D	3
98	44069 SSL	44069 SSL	Gasket, Plunger Retainer	3
99	44068 SSL	44068 SSL	Retainer, Plunger (M7)	3
100	110672 NY	110672 NY	Retainer, LPS, Front	3
	111116 NY	111116 NY	Retainer, LPS, Rear	3
101	48487 —	48487 —	Wick, Long Tab	3
106	44086 NBR	44086 NBR	Seal, LPS w/SS-Spg	3
	45846 <i>FPM</i>	45846 <i>FPM</i>	Seal, LPS w/SS-Spg	3
107	48537 BB	48668 SS	Washer, LPS	3
110	48536 BBCP	48667 SS	Manifold, Inlet	1
112	11379 NBR	11379 NBR	O-Ring, Inlet Manifold - 70D	3
	14183 <i>FPM</i>	14183 <i>FPM</i>	O-Ring, Inlet Manifold - 70D	3
117	48542 STZP	88398 S	Screw, HSH (M12x35 and M12x40)	4
126	48538 BB	48669 SS	Adapter, Female	3
127	44610 STG*	44610 STG*	V-Packing	6
128	48539 BB	113025 SS	Adapter, Male	3
141	48672 SS	48672 SS	Spring, Coil [12/02]	18
142	48550 BB	48670 SS	Spacer w/Coil Springs	3
155	17629 NBR	17629 NBR	O-Ring, Spacer-Rear - 80D	3
	14183 <i>FPM</i>	14183 <i>FPM</i>	O-Ring, Spacer-Rear - 70D	3
156	28243 PTFE	28243 PTFE	Back-up-Ring, Spacer-Rear	3
158	28243 PTFE	28243 PTFE	Back-up-Ring, Spacer-Front	3
159	17629 NBR	17629 NBR	O-Ring, Spacer-Front - 80D	3
	14183 <i>FPM</i>	14183 <i>FPM</i>	O-Ring, Spacer-Front - 70D	3
162	48363 D	48363 D	Back-up-Ring, Seat	6
163	26142 NBR	26142 NBR	O-Ring, Seat	6
	14330 <i>FPM</i>	14330 <i>FPM</i>	O-Ring, Seat - 70D	6
164	48544 SS	48676 SSL	Seat	6
166	45839 SSL	45839 SSL	Valve	6
167	45840 SS	45840 SS	Spring	6
168	110682 PVDF	110682 PVDF	Retainer, Spring	6
170	44794 SS	44794 SS	Washer, Spring Retainer	6
171	48689 SS	48689 SS	Spring, Coil [12/02]	6
172	17667 NBR	17667 NBR	O-Ring, Valve Plug - 80D	6
	11745 <i>FPM</i>	11745 <i>FPM</i>	O-Ring, Valve Plug - 70D	6
174	120693 BBCP	811452 SS	Plug, Valve w/O-Ring	6
185	48543 BBCP	48674 SS	Manifold, Discharge	1
188	48548 STZP	88399 S	Screw, HSH (M12x80)	6
250	26516 STCP	26516 STCP	Protector, Shaft	1
260	30614 STZP	30614 STZP	Rail, Angle Assy (Incls: 27808, 30902, 30908, 30911, 30930)	1
269	30206 F	30206 F	Pulley (10") [See Drive Packages, Tech Bulletin 003]	1
270	30059 STL	30059 STL	Hub, "H", M30 (Keyway M8) [See Drive Packages, Tech Bulletin 003]	1
279	30278 STZP	30278 STZP	Oilers (1 oz.)	3
281	30967 —	30967 —	Glass, Oiler	3
282	10069 NBR	10069 NBR	Gasket, Oiler	3

EXPLODED VIEW



Models
Standard - 2510
Stainless Steel - 2511
July 2004

	2510	MATL	2511	MATL		
283	34334	—	34334	—	Kit, Oil Drain	1
290	6104	—	6104	—	Gasket, Liquid (1 oz.)	1
299	816747	BBCP	816785	SS	Head, Complete	1
300	31280	<i>NBR*</i>	31280	<i>NBR*</i>	Kit, Seal (Incls: 97, 106, 112, 127, 155, 156, 158, 159)	1
	31380	<i>FPM*</i>	31380	<i>FPM*</i>	Kit, Seal (Incls: 97, 106, 112, 127, 155, 156, 158, 159)	1
310	31285	NBR	31270	NBR	Kit, Valve (Incls: 162, 163, 164, 166, 167, 168, 170, 172)	2
	31385	FPM	31275	FPM	Kit, Valve (Incls: 162, 163, 164, 166, 167, 168, 170, 172)	2
—	714500	<i>SS</i>	714500	<i>SS</i>	C.A.T. (For R.O. or Industrial Applications)	1
—	714505	<i>SS</i>	714500	<i>SS</i>	Adapter (2 per C.A.T.) (See Data Sheet for complete selection)	2
—	6100	—	6100	—	Oil, Case (12 Bottles) ISO 68 Multi-viscosity Hydraulic (Fill to specified crankcase capacity prior to start-up)	1
—	—	—	6119	—	Lubricant, Anti-Seize (1 oz.)	1

Bold print part numbers are unique to a particular pump model. Italics are optional items. [] Date of latest production change.

*Review material codes for individual items (STG generally may be used as alternate). **C. A.T. highly recommended for pressurized inlet, R.O. and Industrial applications.**

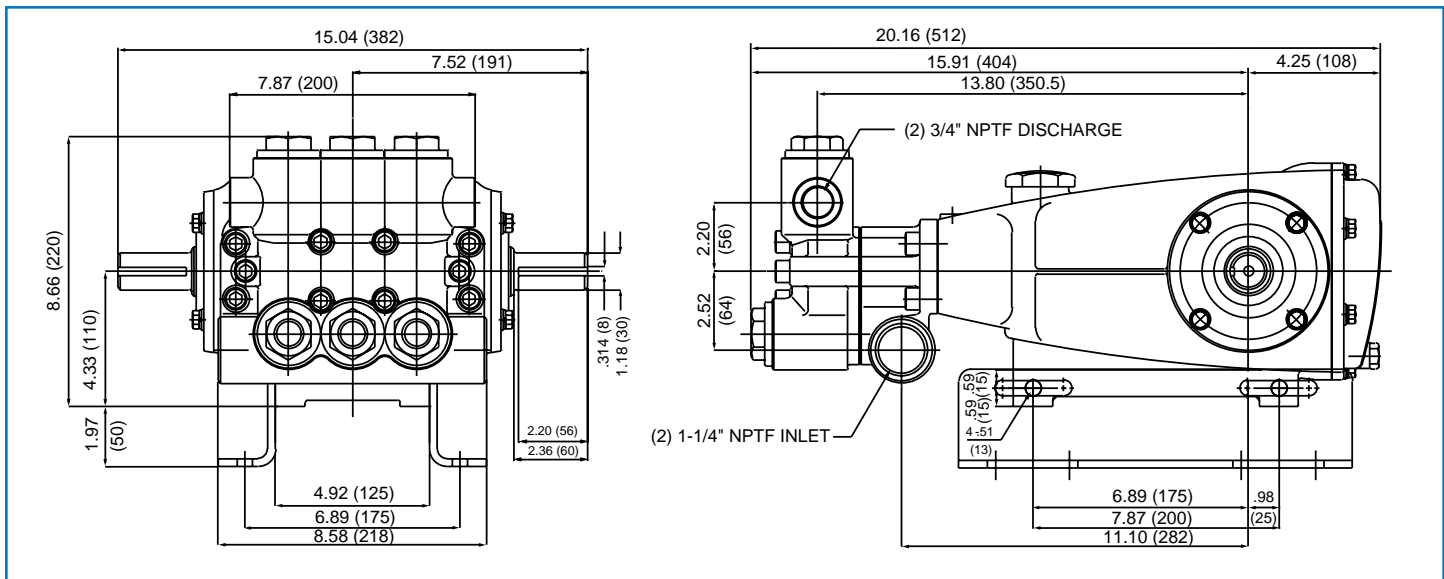
See Tech Bulletins 003, 024, 035, 036, 043, 074, 077, 083 and 085 for additional information. † Production parts 304SS, replacement parts are 316SS.

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum BB=Brass BBCP=Brass/Chrome Plated CC=Ceramic CM=Chrome-moly D=Acetal

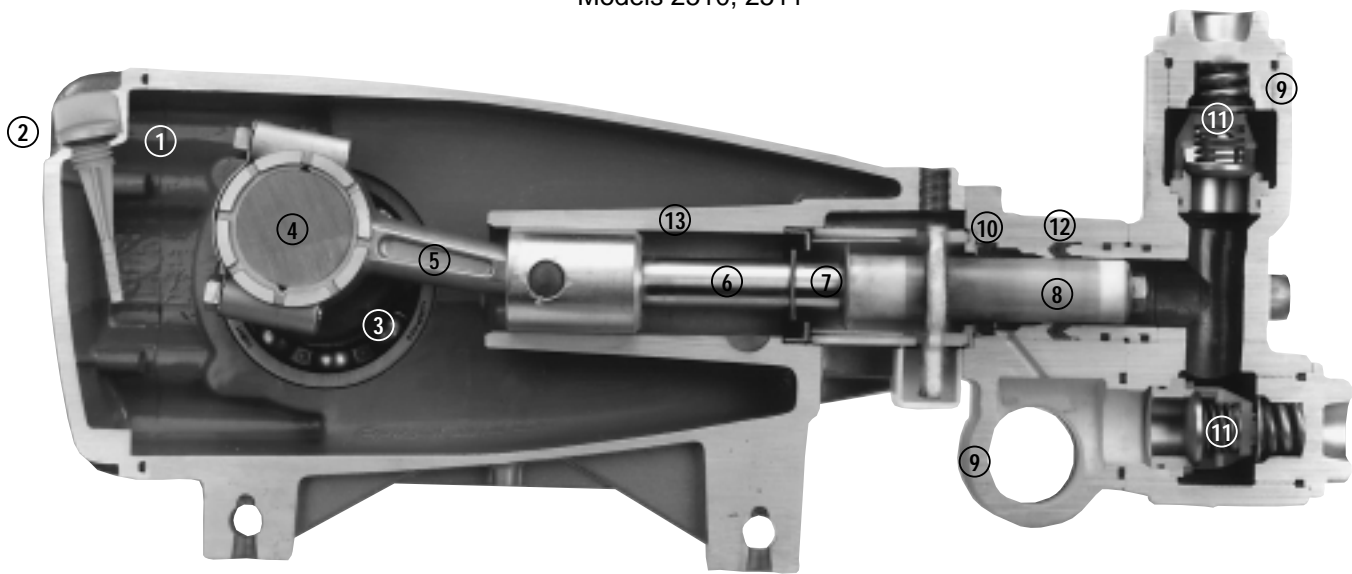
F=Cast Iron FCM=Forged Chrome-moly FPM=Fluorocarbon NBR=Medium Nitrile (Buna-N) NY=Nylon PE=Polyethylene PTFE=Pure Polytetrafluoroethylene

PVDF=Polyvinylidene Fluoride S=304SS SS=316SS SSL=316SS/Low Carbon SSHS=316SS/High Strength STCP=Steel/Chrome Plated

STG=Special Blend PTFE White STL=Steel STZP=Steel/Zinc Plated TNM=Special High Strength



Models 2510, 2511



- 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 TNM **connecting rods** 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 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 strength forged brass or stainless steel 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 of seals.
- 11 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.

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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