

35 Frame Plunger Pumps

Stainless Steel Model

3511

SS Flushed Model

3511C

FEATURES

Superior Design

- Triplex plunger design gives smoother liquid flow.
- V-Packings are completely lubricated and cooled by the liquid being pumped.
- Special flushed inlet manifold permits external flush for added cooling with high temperature liquids and lubrication with low lubricity liquids.
- 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 316 stainless steel valves and seats are hardened and polished for ultimate seating and extended valve life.
- 316 stainless steel manifolds are durable, corrosion resistant.
- 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.
- 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.
- Valve assemblies are accessible without disturbing piping, for quick service.
- Inlet and discharge valve assemblies interchange for easier maintenance.
- 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
Flow.....	14 GPM	(53 L/M)
Pressure Range.....	100 to 3000 PSI	(7 to 210 BAR)
Inlet Pressure Range.....	Flooded to 70 PSI	(Flooded to 4.9 BAR)
RPM	800 RPM	(800 RPM)
Bore.....	0.984"	(25 mm)
Stroke.....	1.890"	(48 mm)
Crankcase Capacity.....	4.2 Qts.	(4 L)
Maximum Liquid Temperature	160°F	(71°C)
Above 130°F call CAT PUMPS for inlet conditions and elastomer recommendations.		
Inlet Ports (2)	1-1/2" NPTF	(1-1/2" NPTF)
Flushing Ports (2) (3511C)	1/4" NPTF	(1/4" NPTF)
Discharge Ports (2).....	1" NPTF	(1" NPTF)
Pulley Mounting	Either Side	(Either Side)
Shaft Diameter	1.378"	(35 mm)
Weight.....	130.6 lbs.	(59 kg)
Dimensions.....	24.51 x 18.11 x 9.72"	(623 x 460 x 247 mm)

ELECTRIC HORSEPOWER REQUIREMENTS

FLOW		PRESSURE			RPM
		PSI 2000	PSI 2500	PSI 3000	
U.S. GPM	L/M	BAR 140	BAR 175	BAR 210	
14	53	19.2	24.0	28.8	800
12	45	16.5	20.6	24.7	685
10	38	13.7	17.2	20.6	571

DETERMINING THE PUMP R.P.M.	<u>Rated G.P.M.</u>	=	<u>"Desired" G.P.M.</u>
	Rated R.P.M.		"Desired" R.P.M.
DETERMINING THE REQUIRED H.P.	<u>GPM x PSI</u>	=	Electric Brake
	1460		H. P. Required
DETERMINING MOTOR PULLEY SIZE	<u>Motor Pulley O.D.</u>	=	<u>Pump Pulley O.D.</u>
	Pump R.P.M.		Motor R.P.M.

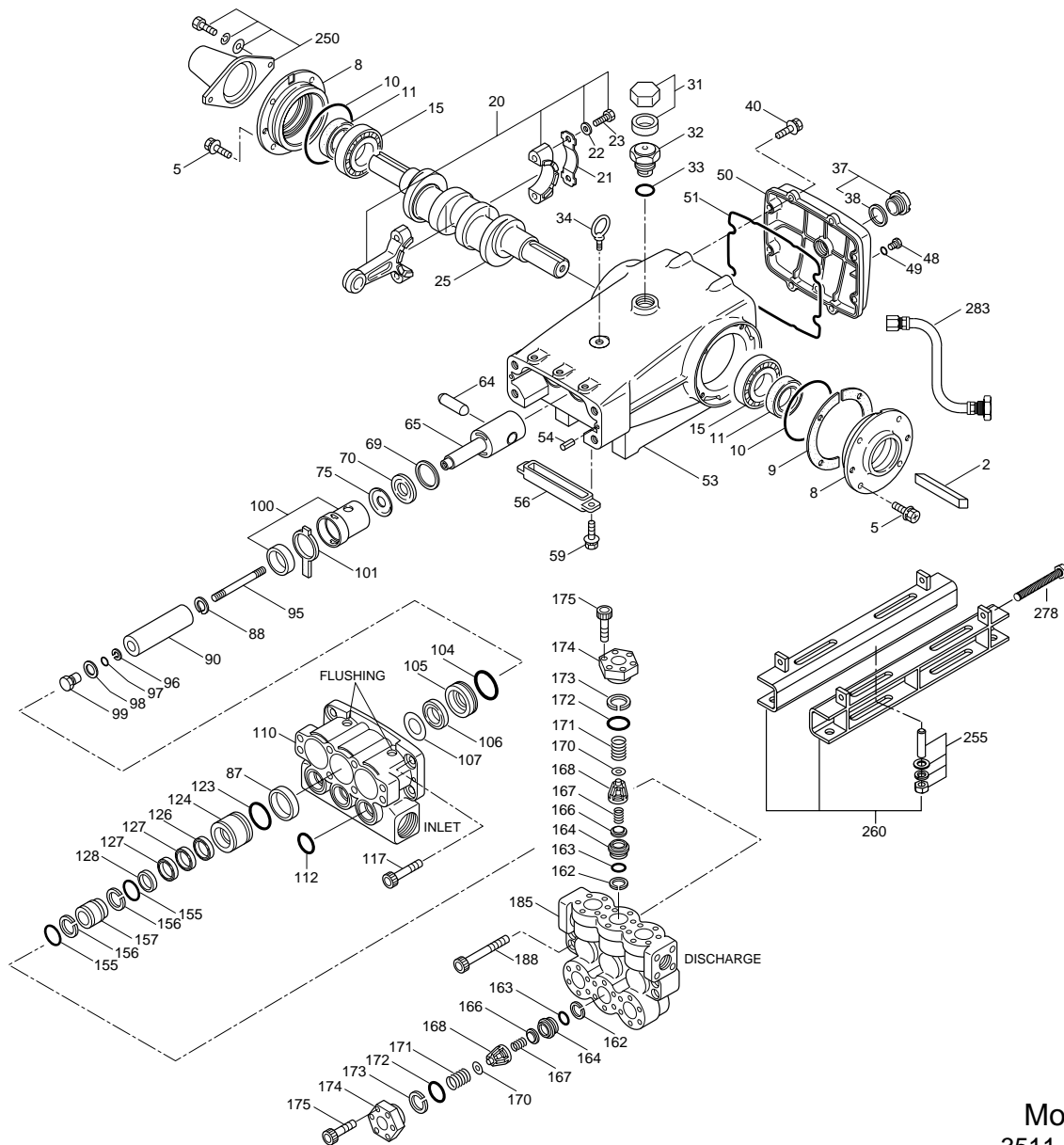
See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 003.
Refer to pump **Service Manual** for repair procedure, additional technical information and **pump warranty**.

"Customer confidence is our greatest asset"

PARTS LIST

ITEM	P/N	MATL	DESCRIPTION	QTY
2	34021	STL	Key (M10x8x70)	1
5	125753	S	Screw, HH Sems (M8x25)	8
8	44542	AL	Cover, Bearing	2
9	815279	FBR	Shim, Split, 2 pc	2
10	12398	NBR	O-Ring, Bearing Cover - 70D	2
11	13296	NBR	Seal, Oil, Crankshaft	2
15	29326	STL	Bearing, Roller	2
20	126725	BZ	Rod, Connecting Assy (Incls: 21, 22, 23)	3
21	126749	STCP R	Washer, Locking (M10)	3
22	126574	STCP R	Washer, Flat (M10)	6
23	122045	STZP	Screw, HH (M10x55)	6
25	29325	FCM	Crankshaft, Dual End (M48)	1
31	828710	—	Protector, Oil Cap w/Foam Gasket	1
32	43211	ABS	Cap, Oil Filler	1
33	14177	NBR	O-Ring, Oil Filler Cap - 70D	1
34	126743	STCP R	Bolt, Eye (M12x1.75) (For Lifting Pump Only)	1
37	92241	—	Gauge, Bubble Oil w/Gasket - 80D	1
38	44428	NBR	Gasket, Flat Oil Gauge - 80D	1
40	125753	S	Screw, HH Sems (M8x25)	8
48	25625	STCP	Plug, Drain (1/4"x19BSP)	1
49	23170	NBR	O-Ring, Drain Plug - 70D	1
50	45936	AL	Cover, Rear	1
51	16612	NBR	O-Ring, Cover - 70D	1
53	44487	AL	Crankcase Assy (Incls: 34, 54)	1
54	27488	S	Pin, Guide	2
56	27790	POP	Pan, Oil	1
59	92538	S	Screw, HHC Sems (M6x16)	2
64	43864	CM	Pin, Crosshead	3
65	45116	SSZZ	Rod, Plunger	3
69	126587	STCP R	Washer, Oil Seal	3
70	100488	NBR S	Seal, Oil, Crankcase	3
	44739	FPM	Seal, Oil, Crankcase	3
75	43865	S	Slinger, Barrier	3
87	109608	SS	Collar, Inlet Manifold	3
88	45676	S	Washer, Keyhole	3
90	43866	CC	Plunger (M25x145)	3
95	89778	SS	Stud, Retainer (M10x135)	3
96	20189	PTFE	Back-up-Ring, Plunger Retainer	3
97	11345	NBR	O-Ring, Plunger Retainer - 70D	3
	11375	FPM	O-Ring, Plunger Retainer	3
98	44085	SS	Gasket, Plunger Retainer (M10)	3
99	44084	SS	Retainer, Plunger (M10)	3
100	814279	PVDF	Retainer, Seal, 2 Pc.	3
101	44096	—	Wick	3
104	43875	NBR	O-Ring, Adapter - 70D	3
	44826	FPM	O-Ring, Adapter - 70D	3
105	113022	SS	Adapter, LPS	3
106	44086	NBR	Seal, LPS w/SS-Spg	3
	45846	FPM	Seal, LPS w/SS-Spg	3
107	44089	SS	Washer, LPS	3
110	45365	SS	Manifold, Inlet	1
	125397	SS	Manifold, Inlet, Flushed (1/4" Flush Port)	1
112	11379	NBR	O-Ring, Inlet Manifold - 70D	3
	14183	FPM	O-Ring, Inlet Manifold	3
117	44585	S	Screw, HSH (M14x40)	4
123	12391	NBR	O-Ring, V-Packing Cylinder - 70D	3
	13266	FPM	O-Ring, V-Packing Cylinder - 70D	3
124	113023	SS	Cylinder, V-Packing	3
126	113024	SS	Adapter, Female	3
127	44610	STG*	V-Packing	6
128	113025	SS	Adapter, Male	3
155	11379	NBR	O-Ring, V-Packing Spacer - 70D	6
	14183	FPM	O-Ring, V-Packing Spacer	6
156	28243	PTFE	Back-up-Ring, V-Packing Spacer	6
157	113026	SS	Spacer, V-Packing	3
162	21985	PTFE	Back-up-Ring, Seat	6
163	26089	NBR	O-Ring, Seat - 80D	6
	11377	FPM	O-Ring, Seat - 80D	6
164	44080	SS	Seat	6
166	44081	SS	Valve	6
167	44082	SS	Spring	6
168	44735	PVDF	Retainer, Spring	6
170	44794	SS	Washer, Spring Retainer	6
171	44793	SS	Spring, Coil, Valve Plug	6
172	15853	NBR	O-Ring, Valve Plug - 70D	6
	11720	FPM	O-Ring, Valve Plug - 70D	6
173	20224	PTFE	Back-up-Ring, Valve Plug	6
174	113040	SS	Plug, Valve	6
175	87951	S	Screw, HSH (M10x30)	36
185	113028	SSD	Manifold, Discharge	1
188	89981	S	Screw, HSH (M12x70)	8
250	44516	NY	Protector, Shaft, w/2 Screws, Washers, Lockwashers	1
255	34018	STZP R	Assy, Direct Mount	1
	34039	S	Assy, Direct Mount	1
260	92674	STZP R	Mounting, Rail, Assy (Incls: 34018)	1

EXPLODED VIEW



Models
3511, 3511C

ITEM	P/N	MATL	DESCRIPTION	QTY
275	990013	STL	Hub, 'B' 35mm w/Keyway [See Drive Packages, Tech Bulletin 003]	1
278	80540	ZP	Screw, HH (M12x100) (Rail Adjusting Screw)	1
279	30278	STZP	Oiler (1 oz.)	3
281	30967	—	Glass, Oiler	3
282	10069	NBR	Gasket, Oiler	3
283	34314	—	Kit, Oil Drain (3/8" x 48")	1
290	6124	—	Gasket, Liquid (3 oz.)	1
299	818438	SS	Head, Complete	1
300	31038	NBR*	Kit, Seal (Incls: 97,104,106,112,123,127,155,156)	1
	31266	FPM*	Kit, Seal (Incls: 97,104,106,112,123,127,155,156)	1
310	34151	NBR	Kit, Valve (Incls: 162,163,164,166,167,168,170,172,173)	2
	701798	FPM	Kit, Valve (Incls: 162,163,164,166,167,168,170,172,173)	2
390	711500	SS	C.A.T. (Inlet pressure stabilizer for RO and boosted inlet applications)	1
391	711506	SS	Adapter (2 per C.A.T.) (See Data Sheet for complete selection)	2
392	701818	SS	Elbow Assy used with Adapter Assy 711506	1
—	819000	F	Assy, Crankcase, Cast Iron Conversion	1
—	6119	—	Lubricate, Antisieze (1 oz.)	1
—	6575	—	Plunger Pump Service DVD	1
—	6100	—	Oil, Case (12 Bottles) ISO-68 Hydraulic (Fill to specified crankcase capacity prior to start-up)	1

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

R Components comply with RoHS Directive. *Review individual parts in each kit for material code identification.

See Tech Bulletins 002, 003, 024, 035, 036, 041, 043, 052, 053, 068, 069, 074, 077, 080 and 083 for additional information.

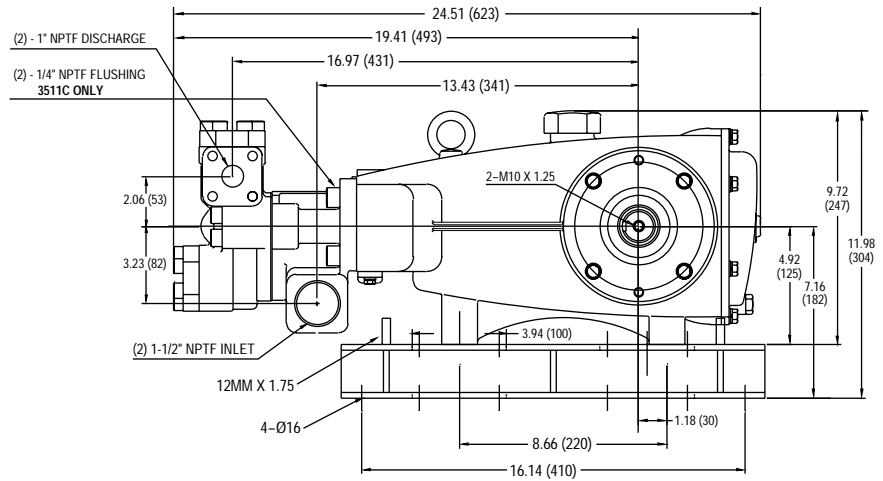
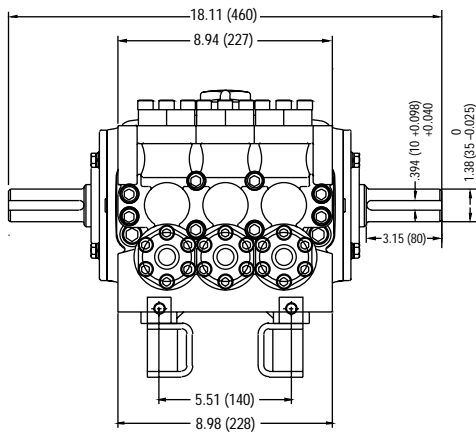
C.A.T. highly recommended for pressurized inlet, R.O. and Industrial applications.

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

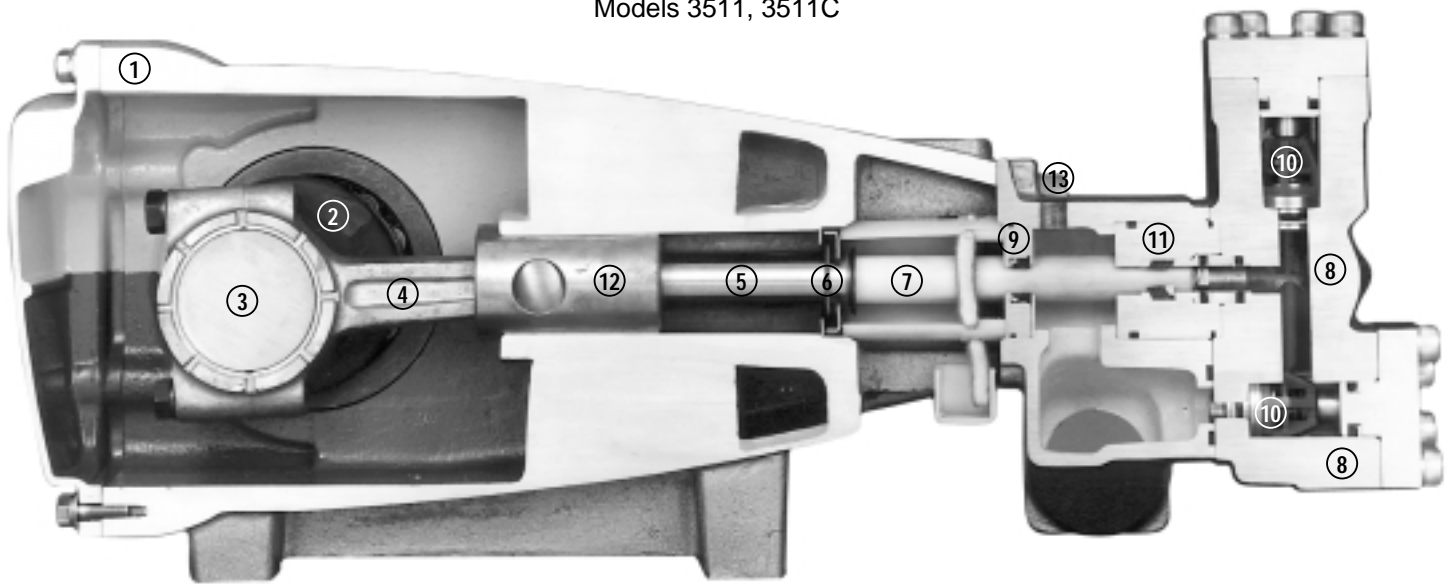
CC=Ceramic CM=Chrome-Moly F=Cast Iron FBR=Fiber FCM=Forged Chrome-moly FPM=Fluorocarbon NAB=Nickel Aluminum Bronze NBR=Medium Nitrile (Buna-N)

NBRs=Buna, Silicone Free NY=Nylon POP=Polypropylene PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride

S=304SS SS=316SS STG=Special Blend PTFE White SSZZ=316SS/Zamak STL=Steel STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated ZP=Zinc Plated



Models 3511, 3511C



- 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 tensile strength and bearing quality.
- 5 Special stainless steel high strength **plunger rods** for high load bearing and longevity.
- 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, solid ceramic **plungers** provide a true wear surface and extended seal life.
- 8 **Manifolds** are high tensile strength 316 stainless steel for long term, continuous duty.
- 9 100% wet **seal** design adds to service life by allowing pumped liquids to cool and lubricate on both sides.
- 10 Stainless steel **valves, seats and springs** provide corrosion-resistance, ultimate seating and extended life.
- 11 Specially formulated, CAT PUMP exclusive, **V-Packings** offer unmatched performance and seal life.
- 12 **Crossheads** are 360° supported for uncompromising alignment.
- 13 Special **Flushed Inlet Manifold** permits external flush for adding cooling with high temperature liquids and lubrication with low lubricity liquids.

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