

# 5 Frame Plunger Pump

**Standard Models** 310, 340, 350  
**Sleeved Models** 310S, 340S, 350S  
**W770 Models** 310W, 340W, 350W

## 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 Seal provides double protection against external leakage.
- Oil bath crankcase assures optimum lubrication.
- Close tolerance concentricity of the ceramic plunger maximizes seal life.
- Convenient direct drive electric motor options.

### Quality Materials

- Precision design 304 stainless steel valves and seats are hardened and polished for ultimate seating and extended valve life.
- Forged brass, sleeved forged brass or special W770 alloy 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, Hi-Pressure Seals 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
<b>MODEL 310, 310S, 310W</b>		
Flow .....	4.0 GPM	(15 L/M)
Pressure Range .....	100 to 2200 PSI	(7 to 155 BAR)
RPM .....	<b>950 RPM</b>	<b>(950 RPM)</b>
Inlet Pressure Range .....	-5 to 60 PSI	(-0.35 to 4 BAR)
Stroke .....	<b>0.709"</b>	<b>(18 mm)</b>
<b>MODEL 340, 340S, 340W Direct Drive</b>		
Flow .....	4.0 GPM	(15 L/M)
Pressure Range .....	100 to 1800 PSI	(7 to 125 BAR)
RPM .....	<b>1725 RPM</b>	<b>(1725 RPM)</b>
Inlet Pressure Range .....	Flooded to 60 PSI	(Flooded to 4 BAR)
Stroke .....	<b>0.394"</b>	<b>(10 mm)</b>
<b>MODEL 350, 350S, 350W Direct Drive</b>		
Flow* .....	5.0 GPM	(19 L/M)
Pressure Range .....	100 to 1500 PSI	(7 to 105 BAR)
RPM .....	<b>1725 RPM</b>	<b>(1725 RPM)</b>
Inlet Pressure Range .....	Flooded to 60 PSI	(Flooded to 4 BAR)
Stroke .....	<b>0.472"</b>	<b>(12 mm)</b>

\*This specification for intermittent, fresh water duty.

## COMMON SPECIFICATIONS

Bore .....	0.787"	(20 mm)
Crankcase Capacity .....	18 oz.	(0.55 L)
Maximum Liquid Temperature .....	160°F	(71°C)
Above 130°F call CAT PUMPS for inlet conditions and elastomer recommendations.		
Inlet Ports (2) .....	1/2" NPTF	(1/2" NPTF)
Discharge Ports (2) .....	3/8" NPTF	(3/8" NPTF)
Shaft Diameter .....	0.787"	(20 mm)
Weight .....	19.8 lbs.	(9 kg)
Dimensions .....	11.73 x 10.0 x 5.24"	(298 x 254 x 133 mm)

## ELECTRIC HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE					MOTOR PULLEY SIZE	
			PSI 1200	PSI 1500	PSI 1800	PSI 2000	PSI 2200	Using 1725 RPM Motor & Std. 8" Pump Pulley	
	U.S. GPM	L/M	BAR 85	BAR 105	BAR 125	BAR 140	BAR 155	RPM	Pulley O.D.
<b>310</b>	5.0	19	4.1	5.1	N/A	N/A	N/A	1190	5.5
	4.0	15	3.3	4.1	5.0	5.5	6.0	950	4.4
	3.0	11.4	2.5	3.1	3.7	4.2	4.5	713	3.3
<b>340</b>	4.0	15	3.3	4.1	5.0	N/A	N/A	1725	Direct Drive
<b>350</b>	5.0	19	4.1	5.1	N/A	N/A	N/A	1725	Direct Drive

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

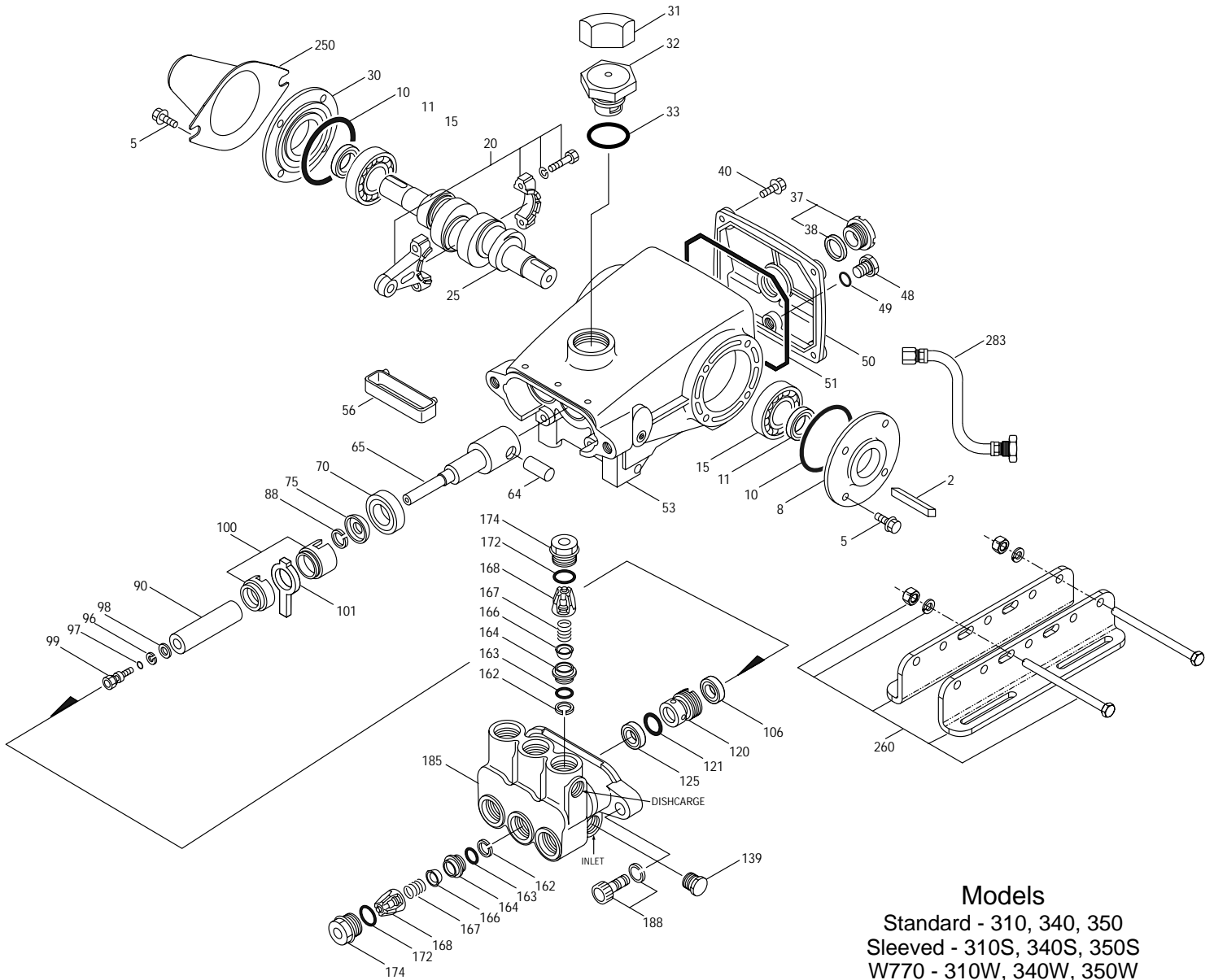
See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 003.  
 Refer to pump **Service Manual** for repair procedure, additional technical information and **pump warranty**.

*"Customer confidence is our greatest asset"*

# PARTS LIST

ITEM	PART NUMBER			DESCRIPTION	QTY
	<b>310</b>	<b>310S</b>	<b>310W</b>		
	<b>340</b>	<b>340S</b>	<b>340W</b>		
	<b>350 MATL</b>	<b>350S MATL</b>	<b>350W MATL</b>		
2	30057	30057	30057	Key (M6x6x25)	1
5	92519	92519	92519	Screw, Sems HHC (M6x16)	8
	125824	125824	125824	Screw, Sems HHC (M6x16)	8
8	43344	43344	43344	Cover, Bearing	1/2
10	43343	43343	43343	O-Ring, Bearing Cover - 70D	2
11	43222	43222	43222	Seal, Oil, Crankshaft - (310, 350-2) (340-1)	1/2
15	14480	14480	14480	Bearing, Ball	2
20	45883	45883	45883	Rod, Connecting Assy [09/05]	3
25	43342	43342	43342	Crankshaft, Dual End - 310, 310S, 310W	1
	44945	44945	44945	Crankshaft, Single End - 340, 340S, 340W	1
	43838	43838	43838	Crankshaft, Dual End - 350, 350S, 350W	1
30	44949	44949	44949	Cover, Blind Shaft - 340	1
31	828710	828710	828710	Protector, Oil Cap w/Foam Gasket	1
32	43211	43211	43211	Cap, Oil Filler	1
33	14177	14177	14177	O-Ring, Filler Cap - 70D	1
37	92241	92241	92241	Gauge, Oil, Bubble w/Gasket	1
38	44428	44428	44428	Gasket, Flat, Oil Gauge - 80D	1
40	92520	92520	92520	Screw, Sems HHC (M6x20)	4
	126541	126541	126541	Screw, Sems HHC (M6x20)	4
48	25625	25625	25625	Plug, Drain (1/4"x19 BSP)	1
49	23170	23170	23170	O-Ring, Drain Plug - 70D	1
50	48772	48772	48772	Cover, Rear [10/01]	1
51	48773	48773	48773	O-Ring, Rear Cover [10/01]	1
53	48769	48769	48769	Crankcase [05/02]	1
56	43355	43355	43355	Pan, Oil	1
64	43351	43351	43351	Pin, Crosshead	3
65	43365	43365	43365	Rod, Plunger	3
70	43228	43228	43228	Seal, Oil, Crankcase	3
75	43328	43328	43328	Slinger, Barrier	3
88	45697	45697	45697	Washer, Keyhole (M18)	3
90	43367	43367	43367	Plunger (M20x72)	3
96	43235	43235	43235	Back-up-Ring, Plunger Retainer	3
97	17399	17399	17399	O-Ring, Plunger Retainer - 80D	3
	14160	14160	14160	O-Ring, Plunger Retainer - 70D	3
	◆ 46204	◆ 46204	◆ 46204	O-Ring, Plunger Retainer - 70D	3
98	45891	45891	45891	Gasket	3
99	104360	104360	104360	Retainer, Plunger w/Stud	3
100	45688	45688	45688	Retainer, 2-Pc [04/06]	3
101	43302	43302	43302	Wick, Long Tab	3
106	43305	43305	43305	Seal, LPS w/S-Spg	3
	45153	45153	45153	Seal, LPS w/SS-Spg	3
	◆ 48429	◆ 48429	◆ 48429	Seal, LPS w/SS-Spg	3
120	45679	45679	45679	Case, Seal	3
121	14200	14200	14200	O-Ring, Seal Case - 70D	3
	11719	11719	11719	O-Ring, Seal Case	3
	◆ 48907	◆ 48907	◆ 48907	O-Ring, Seal Case	3
125	43307	43307	43307	Seal, HPS w/S	3
	44936	44936	44936	Seal, HPS w/SS	3
	46667	46667	46667	Seal, HPS "Hi-Temp", 2-Pc w/S-Support	3
139	22179	22179	22179	Plug, Inlet (1/2" NPT)	1
162	48361	48361	48361	Back-up-Ring, Seat	6
163	43358	43358	43358	O-Ring, Seat - 70D	6
	44938	44938	44938	O-Ring, Seat - 70D	6
	◆ 48908	◆ 48908	◆ 48908	O-Ring, Seat	6
164	43725	43725	43725	Seat	6
166	43723	43723	43723	Valve	6
167	43750	43750	43750	Spring, Valve	6
168	44565	44565	44565	Retainer, Valve Spring	6
172	17615	17615	17615	O-Ring, Valve Plug - 75D	6
	15855	15855	15855	O-Ring, Valve Plug -70D	6
	◆ 48431	◆ 48431	◆ 48431	O-Ring, Valve Plug -75D	6
174	43849	43849	43849	Plug, Valve	6
185	44837	—	46825	Head, Manifold	1
	—	46278	—	Head, Manifold, Sleeved	1
188	124396	124396	124396	Screw, Sems HSH (M10x35) [01/04]	2
	126520	126520	126520	Screw, Sems HSH (M10x35)	2
250	118672	118672	118672	Protector, Shaft (Belt Drive Only)	1
255	30243	30243	30243	Mount, Direct (Belt Drive Only)	1
260	30611	30611	30611	Mounting, Angle Rail - B	1
				(28499,30900,30910,30920) (Belt Drive Only)	
265	30659	30659	30659	Mount, Assy	1
				(30611,30633,118672) (Belt Drive Only)	
270	30633	30633	30633	Assy, Pulley & Key (30058,30057) (Belt Drive Only)	1
275	30944	30944	30944	Assy, Hub & Key (M20 w/M6 Keyway) (Belt Drive Only)	1
				[See Drive Packages, Tech Bulletin 003]	
283	34334	34334	34334	Kit, Oil Drain	1
298	34962	34962	34962	Clutch Assy, Single Groove, 20mm, 12VDC	1
	34963	34963	34963	Clutch Assy, Dual Groove, 20mm, 12VDC	1
299	810027	816551	810027W	Head, Complete	1

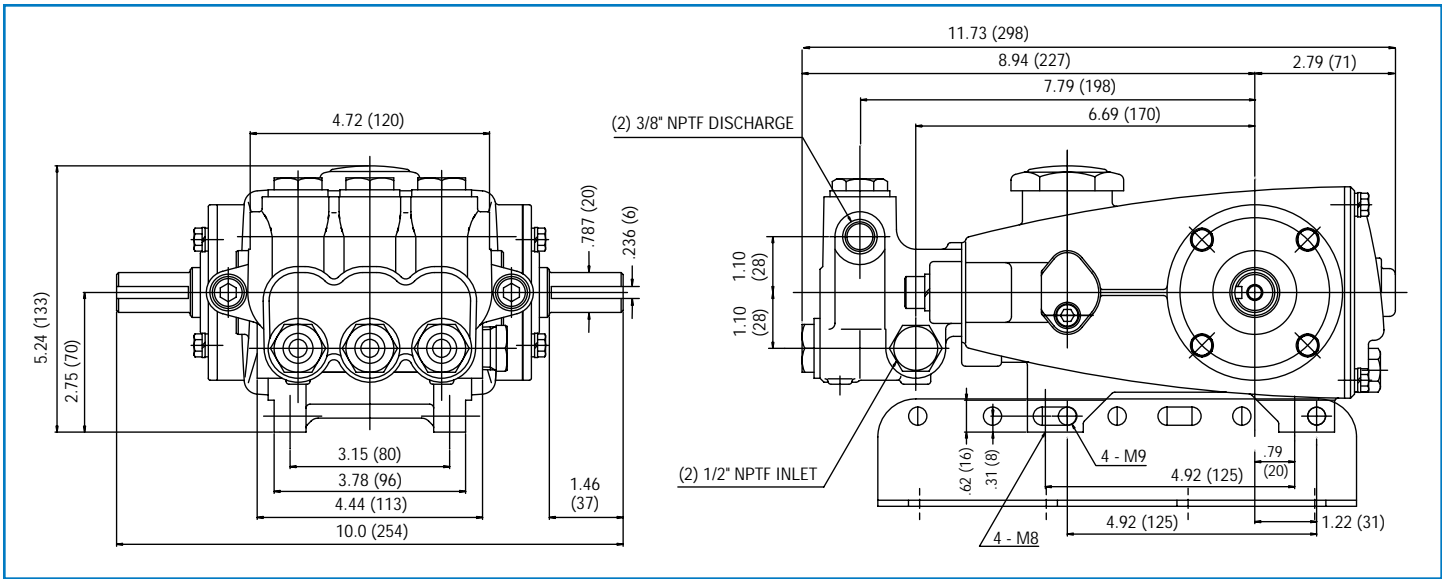
# EXPLODED VIEW



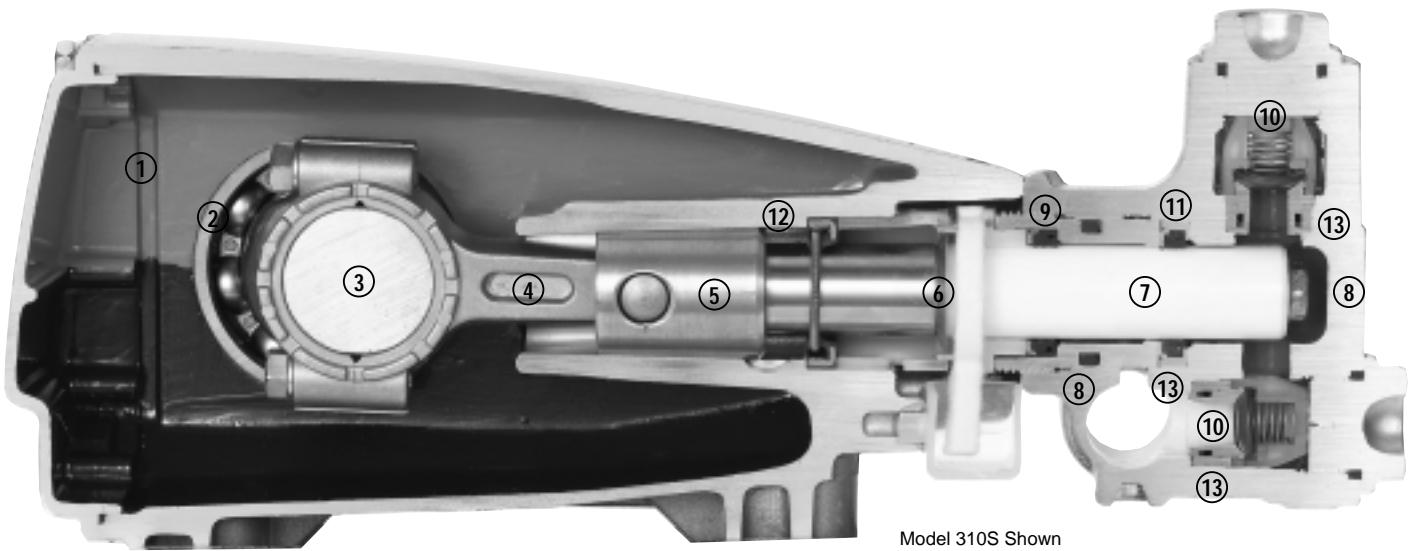
**Models**  
 Standard - 310, 340, 350  
 Sleeved - 310S, 340S, 350S  
 W770 - 310W, 340W, 350W  
 October 2006

	<b>310</b>	<b>310S</b>	<b>310W</b>			
	<b>340</b>	<b>340S</b>	<b>340W</b>			
	<b>350</b>	<b>350S</b>	<b>350W</b>	<b>MATL</b>		
300	30623	30623	30623	NBR	Kit, Seal (Incls: 97,101,106,121,125)	1
	34155	34155	34155	FPM	Kit, Seal (Incls: 97,101,106,121,125)	1
	33623	33623	33623	HT	Kit, Seal, "Hi-Temp" (Incls: 97,101,106,121,125)	1
	◆ 31163	◆ 31163	◆ 31163	EPDM*	Kit, Seal (Incls: 97,101,106,121,125)	1
310	30821	30821	30821	NBR	Kit, Valve (Incls: 162-164,166-168,172)	2
	31821	31821	31821	FPM	Kit, Valve (Incls: 162-164,166-168,172)	2
	◆ 31162	◆ 31162	◆ 31162	EPDM	Kit, Valve (Incls: 162-164,166-168,172)	2
350	30696	30696	30696	STZP	Plier, Reverse	1
351	33004	33004	33004	STZP	Socket, Seal Case (1/2" Drive)	1
—	—	—	—	—	BD Motors - See Individual Data Sheet	
—	6107	6107	6107	—	Oil, Bottle (21 oz.) ISO 68 Multi-viscosity 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.** ◆Silicone oil/grease required. R Components comply with RoHS Directive.  
 [ ] Date of latest production change. \*Review material codes for individual items (HT generally may be used as alternate). Add .3000 to part numbers for Hi-Temp model.  
 See Tech Bulletins 002, 003, 008, 024, 027, 032, 035, 036, 043, 045, 046, 049, 052, 053, 054, 073, 074, 077, 079, 083 and 090 for additional information.  
 MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum BB=Brass BBCP=Brass/Chrome Plated CC=Ceramic CM=Chrome-moly CU=Copper  
 D=Acetal EPDM=Ethylene Propylene Diene Monomer FBB=Forged Brass FCM=Forged Chrome-moly FPM=Fluorocarbon HS=High Strength  
 HT=High Temp (EPDM Alternative) NBR=Medium Nitrile (Buna-N) POP=Polypropylene PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS  
 SNG=Special Blend (Buna) SS=316SS STL=Steel STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated W770=Special Alloy ZZCP=Chrome Plated/Steel - Zamak



Models 310, 340, 350, 310S, 340S, 350S, 310W, 340W, 350W



Model 310S Shown

- 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** noted for superior tensile strength and bearing quality.
- 5 Special high strength **plunger rods** with Zamak crossheads for longevity and corrosion resistant.
- 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 a high tensile strength forged brass, 316 stainless steel sleeved or W770 alloy for long life, continuous duty and compatibility.
- 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, **Hi-Pressure Seals** offer unmatched performance and seal life.
- 12 **Crossheads** are 360° supported for uncompromising alignment.
- 13 Precision, press-fit, **304 stainless steel sleeves** in both the seal and valve chambers provide extended life (S models only).

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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