

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
MODEL 310, 310S, 310W		
Flow	4.0 GPM	(15 L/M)
Pressure Range	100 to 2200 PSI	(7 to 155 BAR)
RPM	950 RPM	(950 RPM)
Inlet Pressure Range	-5 to 60 PSI	(-0.35 to 4 BAR)
Stroke	0.709"	(18 mm)
MODEL 340, 340S, 340W Direct Drive		
Flow	4.0 GPM	(15 L/M)
Pressure Range	100 to 1800 PSI	(7 to 125 BAR)
RPM	1725 RPM	(1725 RPM)
Inlet Pressure Range	Flooded to 60 PSI	(Flooded to 4 BAR)
Stroke	0.394"	(10 mm)
MODEL 350, 350S, 350W Direct Drive		
Flow*	5.0 GPM	(19 L/M)
Pressure Range	100 to 1500 PSI	(7 to 105 BAR)
RPM	1725 RPM	(1725 RPM)
Inlet Pressure Range	Flooded to 60 PSI	(Flooded to 4 BAR)
Stroke	0.472"	(12 mm)

*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	11.69 x 10.0 x 5.26"	(297x254 x 133.50 mm)

ELECTRIC HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE					MOTOR PULLEY SIZE	
	U.S. GPM	L/M	PSI 1200	PSI 1500	PSI 1800	PSI 2000	PSI 2200	RPM	Pulley O.D.
310	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
340	4.0	15	3.3	4.1	5.0	N/A	N/A	1725	Direct Drive
350	5.0	19	4.1	5.1	N/A	N/A	N/A	1725	Direct Drive

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

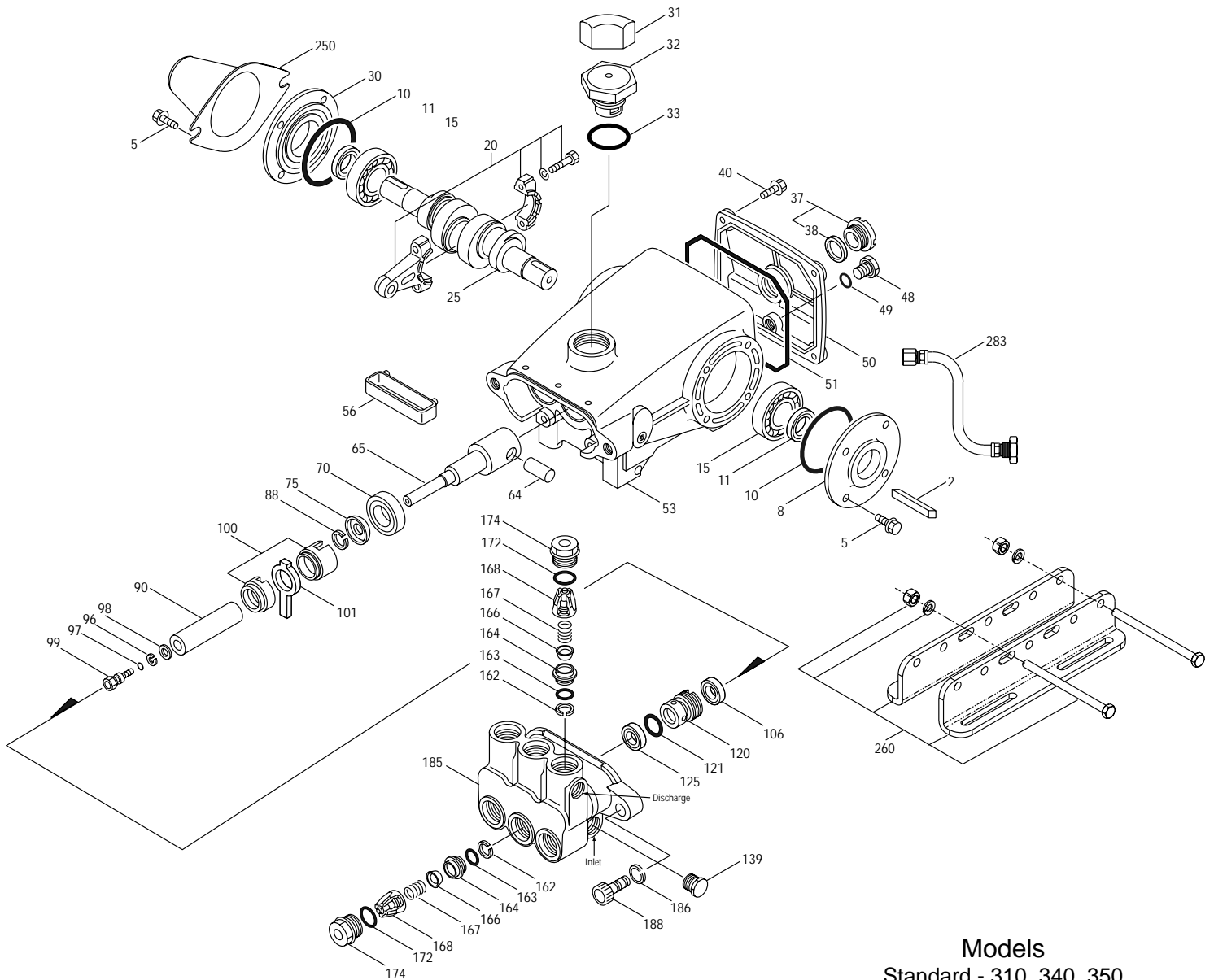
DETERMINING MOTOR PULLEY SIZE $\frac{\text{Motor Pulley O.D.}}{\text{Pump R.P.M.}} = \frac{\text{Pump Pulley O.D.}}{\text{Motor R.P.M.}}$

See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 003.

Refer to pump **Service Manual** for repair procedure, additional technical information and **pump warranty**.

"Customer confidence is our greatest asset"

EXPLODED VIEW



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

	310	310S	310W		
	340	340S	340W		
	350	350S	350W		
	MATL	MATL	MATL		
300	30623 <i>NBR</i>	30623 <i>NBR</i>	30623 <i>NBR</i>	Kit, Seal (Incls: 97,101,106,121,125)	1
	34155 <i>FPM</i>	34155 <i>FPM</i>	34155 <i>FPM</i>	Kit, Seal (Incls: 97,101,106,121,125)	1
	33623 <i>HT</i>	33623 <i>HT</i>	33623 <i>HT</i>	Kit, Seal, "Hi-Temp" (Incls: 97,101,106,121,125)	1
	◆ 31163 <i>EPDM*</i>	◆ 31163 <i>EPDM*</i>	◆ 31163 <i>EPDM*</i>	Kit, Seal (Incls: 97,101,106,121,125)	1
310	30821 <i>NBR</i>	30821 <i>NBR</i>	30821 <i>NBR</i>	Kit, Valve (Incls: 162-164,166-168,172)	2
	31821 <i>FPM</i>	31821 <i>FPM</i>	31821 <i>FPM</i>	Kit, Valve (Incls: 162-164,166-168,172)	2
	◆ 31162 <i>EPDM</i>	◆ 31162 <i>EPDM</i>	◆ 31162 <i>EPDM</i>	Kit, Valve (Incls: 162-164,166-168,172)	2
350	30696 <i>STZP</i>	30696 <i>STZP</i>	30696 <i>STZP</i>	Plier, Reverse	1
351	33004 <i>STZP</i>	33004 <i>STZP</i>	33004 <i>STZP</i>	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.

[] 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.

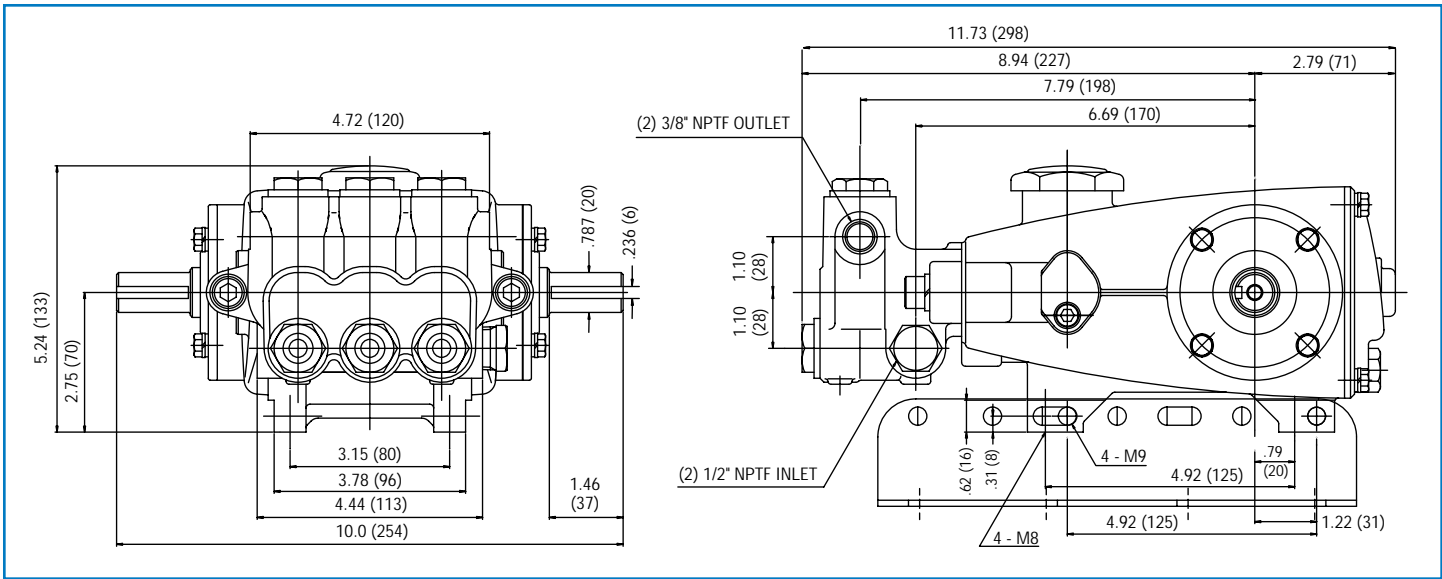
See Tech Bulletins 002, 003, 008, 024, 027, 032, 035, 036, 043, 045, 046, 049, 052, 053, 054, 073, 074, 077, 079, 083 and 090 for additional information.

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

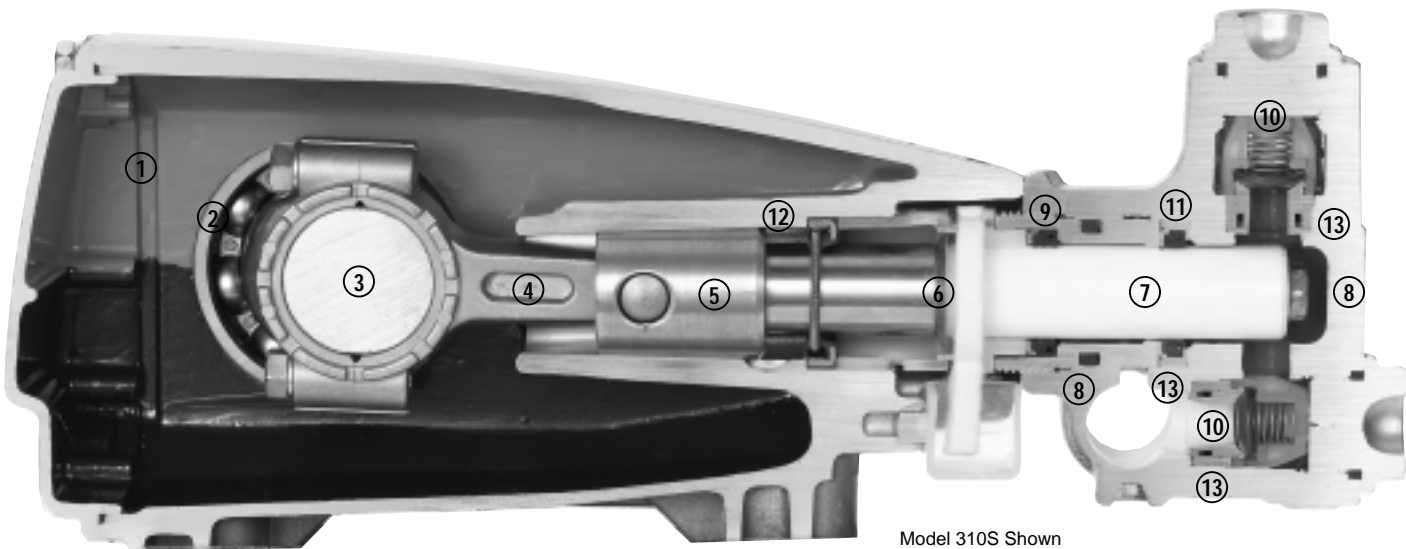
D=Acetal EPDM=Ethylene Propylene Diene Monomer FBB=Forged Brass FCM=Forged Chrome-moly FPM=Fluorocarbon HS=High Strength

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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