

5 Frame Plunger Pump

Standard Models 310, 340, 350

W770 Models 310W, 340W, 350W

Stainless Steel Models 311, 341, 351

Nickel Aluminum Bronze Models 317, 347, 357

FEATURES

Superior Design

- Triplex plunger design gives smoother fluid flow.
- Hi-Pressure Seals are completely lubricated and cooled by the fluid being pumped.
- Inlet and discharge valve assemblies interchange for easier maintenance.
- Lubricated low 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 gearbox or electric motor options.

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, Nickel Aluminum Bronze or special W770 alloy manifolds for strength 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 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.

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

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

Note: Consult engine manufacturer when using gas or diesel engine. Refer to pump Service Manual for important Inlet Condition Check-List, Start-up Procedure, Tech Bulletins and Pump Maintenance information.

SPECIFICATIONS

U.S. Measure

Metric Measure

MODEL 310, 310W, 311, 317

Volume4.0 GPM (15 L/M)
 Discharge Pressure100 to 2200 PSI (7 to 155 BAR)
RPM950 RPM (950 RPM)
 Max. Inlet Pressure.....-5 to 60 PSI (-0.35 to 4 BAR)
 Stroke.....0.709" (18 mm)

MODEL 340, 340W, 341, 347 Direct Drive or Gearbox

Volume4.0 GPM (15 L/M)
 Discharge Pressure100 to 1800 PSI (7 to 125 BAR)
RPM1725 RPM (1725 RPM)
 Max. Inlet Pressure.....Flooded to 60 PSI (Flooded to 4 BAR)
 Stroke.....0.394" (10 mm)

MODEL 350, 350W, 351, 357 Direct Drive or Gearbox

Volume*5.0 GPM (19 L/M)
 Discharge Pressure100 to 1500 PSI (7 to 105 BAR)
RPM1725 RPM (1725 RPM)
 Max. Inlet Pressure.....Flooded to 60 PSI (Flooded to 4 BAR)
 Stroke.....0.472" (12 mm)

* This specification for intermittent, fresh water duty.

COMMON SPECIFICATIONS

Bore0.787" (20 mm)
 Crankcase Capacity18 oz. (0.55 L)
 Maximum Fluid Temperature160°F (71°C)
 Inlet Ports (2)1/2" NPT (1/2" NPT)
 Discharge Ports (2)3/8" NPT (3/8" NPT)
 Shaft Diameter.....0.787" (20 mm)
 Weight19.8 lbs. (9 kg)
 Dimensions11.69 x 10.0 x 5.28" (297x254 x 134 mm)

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.
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

See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 03.

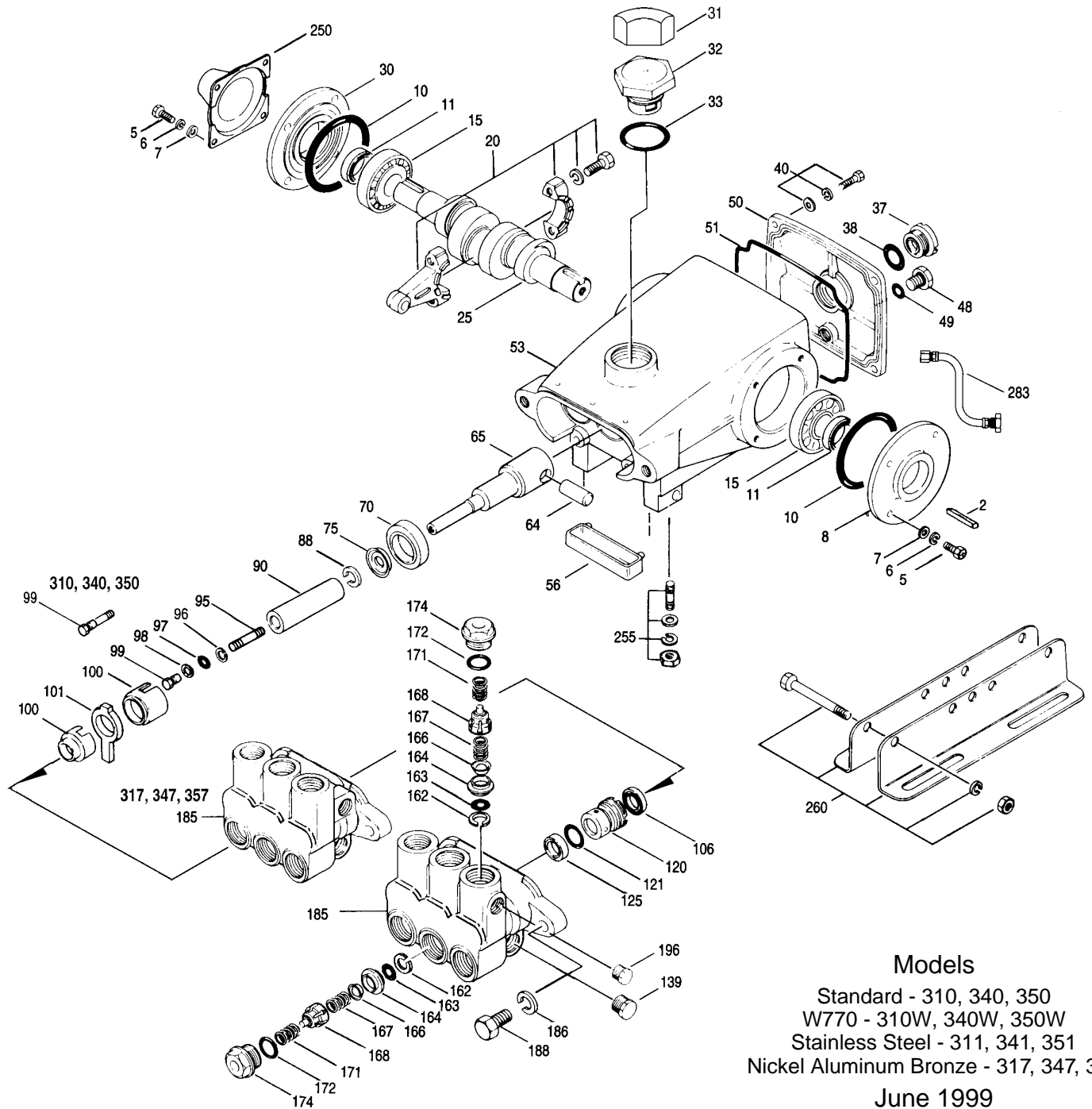
"Customer confidence is our greatest asset"

PARTS LIST

ITEM	PART NUMBER						DESCRIPTION	QTY
	310	310W	311	317				
	340	340W	341	347				
	350 MATL	350W MATL	351 MATL	357 MATL				
2	30057	30057	30057	30057	STL	Key (M6)	1	
5	92519	92519	89618	89618	S	Screw, Sems HHC (M6x16)	8	
6	—	—	15849	15849	S	Lockwasher (M6)	8	
7	—	—	19933	19933	S	Washer (M6)	8	
8	43344	43344	43344	43344	AL	Cover, Bearing	1/2	
10	43343	43343	43343	43343	NBR	O-Ring, Bearing Cover	2	
11	43222	43222	43222	43222	NBR	Seal, Oil, Crankshaft - (310, 350-2) (340-1)	1/2	
15	14480	14480	14480	14480	STL	Bearing	2	
20	43345	43345	43345	43345	ZZ	Rod, Connecting Assy	3	
25	43342	43342	43342	43342	FCM	Crankshaft, Dual End - 310, 310W, 311, 317	1	
	44945	44945	44945	44945	FCM	Crankshaft, Single End - 340, 340W, 341, 347	1	
	43838	43838	43838	43838	FCM	Crankshaft, Dual End - 350, 350W, 351, 357	1	
30	44949	44949	44949	44949	AL	Cover, Blind Shaft - 340	1	
31	828710	828710	828710	828710		Protector, Oil Cap	1	
32	43211	43211	43211	43211		Cap, Oil Filler	1	
	44666	44666	44666	44666	RTP	Cap, Oil Filler, Domed - Gearbox Models	1	
33	14177	14177	14177	14177	NBR	O-Ring, Filler Cap	1	
37	43987	43987	43987	43987		Gauge, Oil, Bubble	1	
38	44428	44428	44428	44428	NBR	Gasket, Flat, Oil Gauge	1	
40	92520	92520	92542	92542	SS	Screw, Sems HHC (M6x20)	4	
48	25625	25625	25625	25625	STCP	Plug, Drain	1	
49	23170	23170	23170	23170	NBR	O-Ring, Drain Plug	1	
50	43339	43339	43339	43339	AL	Cover, Rear	1	
51	43340	43340	43340	43340	NBR	O-Ring, Rear Cover	1	
53	43338	43338	43338	43338	AL	Crankcase	1	
56	43355	43355	43355	43355	POP	Pan, Oil	1	
64	43351	43351	43351	43351	S	Pin, Rist, Plunger Rod	3	
65	43365	43365	45256	45256	SSZZ	Rod, Plunger	3	
70	43228	43228	43228	43228	NBR	Seal, Oil, Crankcase	3	
75	43328	43328	43328	43328	S	Slinger, Barrier	3	
88	45697	45697	45697	45697	S	Washer, Keyhole (M18)	3	
90	43367	43367	43367	43367	CC	Plunger (M71)	3	
95	—	—	89653	89653	SS	Stud, Plunger Retainer (M6x58)	3	
96	43235	43235	43235	43235	PTFE	Back-up-Ring, Plunger Retainer	3	
97	17399	17399	14160	17399	FPM	O-Ring, Plunger Retainer	3	
	14160	14160	17399	14160	NBR	O-Ring, Plunger Retainer	3	
98	45891	45891	44041	44041	SS	Gasket	3	
99	104360	104360	44031	44031	SS	Retainer, Plunger	3	
100	45682	45682	45682	45682	PVDF	Retainer, Seal, Adapter - Front	3	
	45681	45681	45681	45681	PVDF	Retainer, Seal - Rear	3	
101	43302	43302	43302	43302		Wick, Long Tab	3	
106	43305	43305	45153	44127	NBR	Seal, LPS w/S-Spg	3	
	45153	45153	44127	45153	FPM	Seal, LPS w/SS-Spg	3	
120	45679	45679	45680	45680	SS	Case, Seal	3	
121	14200	14200	11719	14200	NBR	O-Ring, Seal Case	3	
	11719	11719	14200	11719	FPM	O-Ring, Seal Case	3	
125	43307	43307	44936	44649	NBR	Seal, HPS w/S	3	
	44936	44936	44649	44936	FPM	Seal, HPS w/SS	3	
	46667	46667	46667	46667	HT	Seal, HPS w/S "Hi-Temp"	3	
139	22179	22179	45156	44563	NAB	Plug, Inlet (1/2")	1	
162	48361	48361	48361	48361	D	Back-up-Ring, Seat	6	
163	43358	43358	44938	43358	NBR	O-Ring, Seat	6	
	44938	44938	43358	44938	FPM	O-Ring, Seat	6	
164	43725	43725	44128	44128	SS	Seat	6	
166	43723	43723	44057	44057	SS	Valve	6	
167	43750	43750	44056	44056	SS	Spring, Valve	6	
168	44565	44565	44565	44565	PVDF	Retainer, Valve Spring	6	
171	—	—	44832	44832	S	Spring, Coil, Retainer	6	
172	17615	17615	15855	17615	NBR	O-Ring, Valve Plug	6	
	15855	15855	17615	15855	FPM	O-Ring, Valve Plug	6	
174	43849	43849	45155	44833	NAB	Plug, Valve	6	
185	44837	46825	W770	—		Manifold Head	1	
	—	—	45151	44124	NAB	Manifold Head	1	
186	12503	12503	15847	15847	S	Lockwasher (M10)	2	
188	87931	87931	87950	87950	S	Bolt, Hex Socket (M10x35)	2	
196	43633	43633	—	—		Plug, Discharge (3/8")	1	
250	118672	118672	118672	118672	STCP	Protector, Shaft (Belt Drive Only)	1	
255	30243	30243	30243	30243	STZP	Kit, Direct Mount (Belt Drive Only)	1	
260	30611	30611	30611	30611	STZP	Mouting, Angle Rail - B (28499,30900,30910,30920) (Belt Drive Only)	1	
265	30659	30659	30659	30659	STL	Kit, Complete Mounting (30611,30633, 30944,118672) (Belt Drive Only)	1	
270	30633	30633	30633	30633	STL	Assy, Pulley & Key (30058,30057) (Belt Drive Only)	1	
275	30944	30944	30944	30944	STL	Assy, Hub & Key (M20 w/M6 Keyway) (Belt Drive Only)	1	

[See complete Drive Packages, Tech Bulletin 03]

EXPLODED VIEW



Models

Standard - 310, 340, 350
 W770 - 310W, 340W, 350W
 Stainless Steel - 311, 341, 351
 Nickel Aluminum Bronze - 317, 347, 357

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	310	310W	311	317		
	340	340W	341	347		
	350 MATL	350W MATL	351 MATL	357 MATL		
● 283	34334	34334	34334	34334	Kit, Oil Drain	1 ●
● 299	810027 BBCP	810027W W	812207 SS	814559 NAB	Head, Complete	1 ●
300	30623 NBR	30623 NBR	34155 FPM	34153 NBR	Kit, Seal (Incls: 97,106,121,125)	1
	34155 FPM	34155 FPM	34153 NBR	34155 FPM	Kit, Seal (Incls: 97,106,121,125)	3
	33623 HT	33623 HT	33623 HT	33623 HT	Kit, Seal, "Hi-Temp" (Incls: 97,106,121,125)	1
310	30821 NBR	30821 NBR	—	—	Kit, Valve (Incls: 162-164,166-168,172)	2
	31821 FPM	31821 FPM	34152 FPM	34152 FPM	Kit, Valve (Incls: 162-164,166-168,172)	2
350	30696	30696	30696	30696	Tool, Valve Seat Removal	1
351	33004	33004	33004	33004	Socket, Seal Case (1/2" Drive)	1
	—	—	—	—	Gearbox - See Individual Data Sheet	
	—	—	—	—	BD Motors - See Individual Data Sheet	

● Industrial discount. **Bold print part numbers are unique to a particular pump model.** *Italics are optional items.*

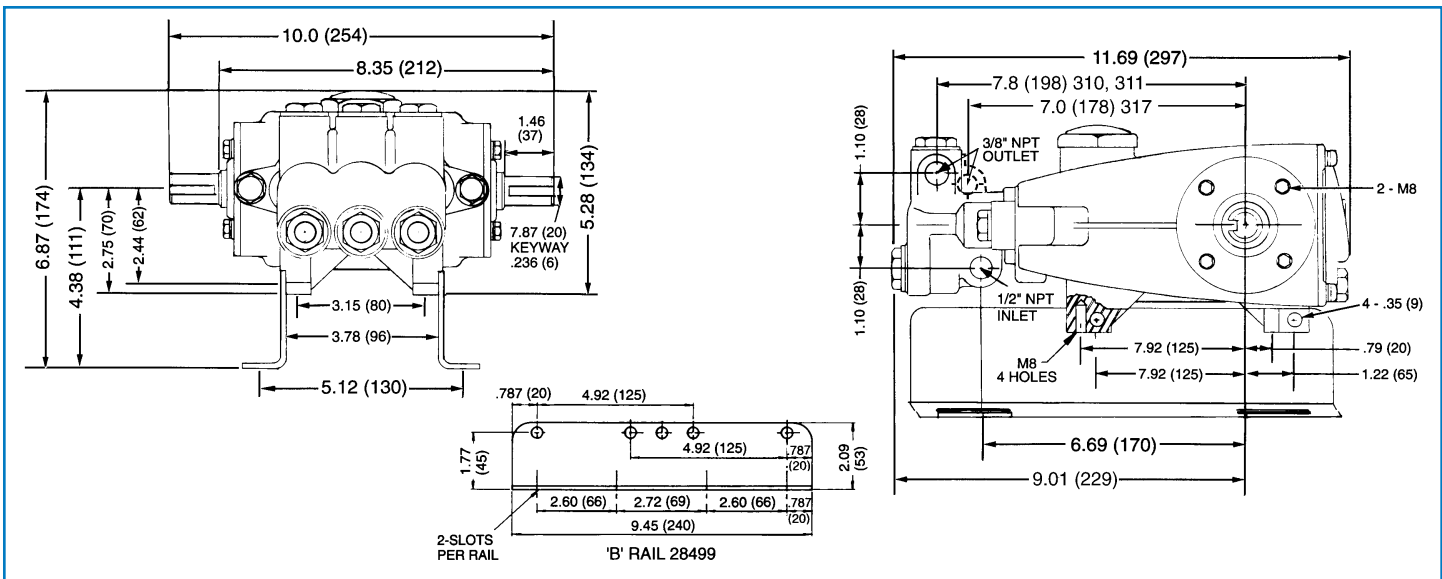
See Tech Bulletins 03, 08, 24, 35, 36, 43, 74, 77 and 79 for additional information. Add .3000 to part numbers for Hi-Temp model.

MATERIAL CODES (Not Part of Part Number): AL=Aluminum BB=Brass BBCP=Brass/Chrome Plated CC=Ceramic CPZZ=Chrome Plated/Steel - Zamak

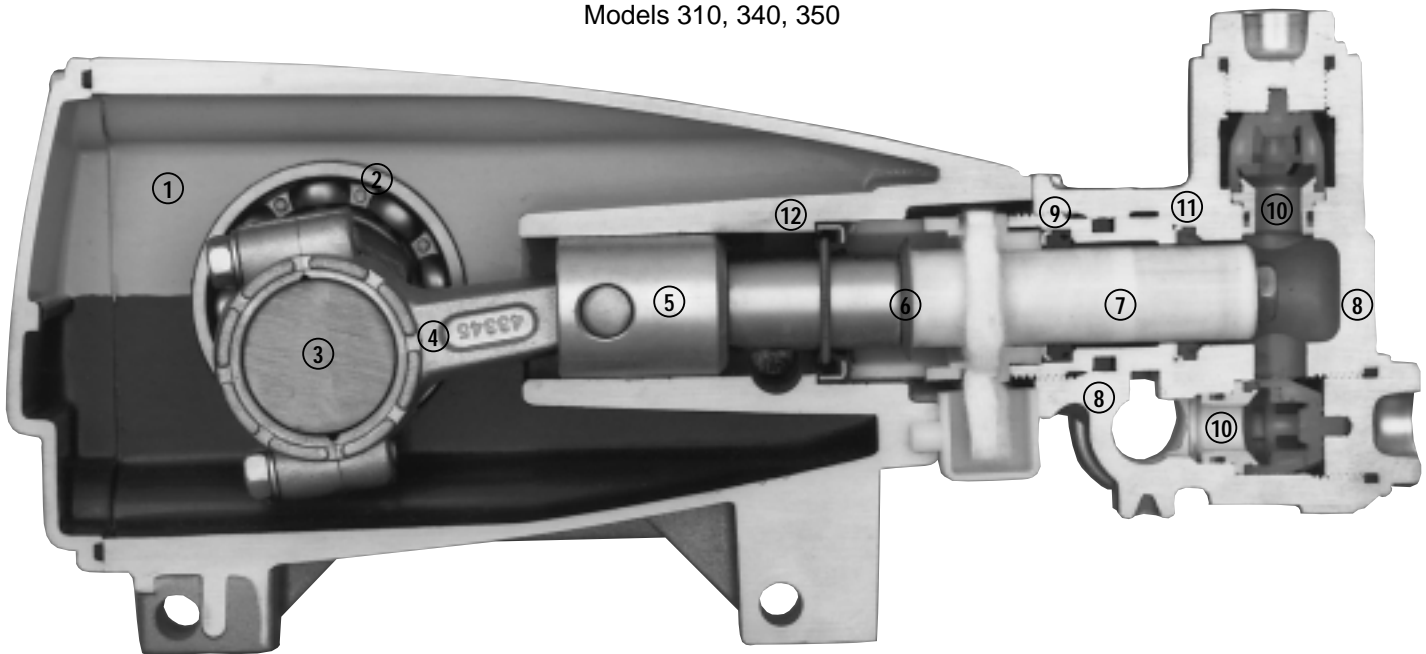
CU=Copper D=Delryn® FCM=Forged Chrome-moly FPM=Fluorocarbon (Viton®) HT=Hi-Temp (EPDM Alternative) NAB=Nickel Aluminum Bronze

NBR=Medium Nitrile (Buna-N) POP=Polypropylene PTFE=Polytetrafluoroethylene (Teflon®) PVDF=Fluoroplastic (High Strength)

RTP=Reinforced Composite S=304SS SNG=Special Blend (Buna) SS=316SS SSZZ=316SS/Zamak STL=Steel STZP=Steel/Zinc Plated W770=Special Alloy ZZ=Zamak



Models 310, 340, 350



- 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 **connecting rods** are made of Zamak, a material noted for strength and superior bearing quality.
- 5 The **plunger rods** are high tensile strength stainless steel with Zamak crossheads.
- 6 The stainless steel **slinger** provides back-up protection for the crankcase seal, keeping pumped fluids out of the crankcase.
- 7 Special concentric, high density, polished, graphite impregnated, solid ceramic **plungers** are abrasion resistant and result in extended seal life.
- 8 **Manifolds** are a high tensile strength forged brass, 316 stainless steel, nickel aluminum bronze or W770 alloy for long term, continuous duty.
- 9 100% wet **seal** design adds to service life by allowing pumped fluids to cool and lubricate on both sides.
- 10 Stainless steel **valves, seats and springs** provide corrosion-resistance, positive seating and long life.
- 11 Specially formulated, CAT PUMP exclusive, **Hi-Pressure Seals** offer unmatched performance and seal life.
- 12 **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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