

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.
- High 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 hardened, polished surface of solid ceramic plunger is abrasion resistant and results in extended seal life.
- Specially formulated, CAT PUMP exclusive, Hi-Pressure Seals offer unmatched performance and seal life.
- Diecast 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. $\frac{\text{GPM} \times \text{PSI}}{1460} = \text{Electric Brake H. P. Required}$

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

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

Volume	4.0 GPM	(15 L/M)
Discharge Pressure	100 to 2200 PSI	(7 to 155 BAR)
RPM	950 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

Volume	4.0 GPM	(15 L/M)
Discharge Pressure	100 to 1800 PSI	(7 to 125 BAR)
RPM	1725 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 Pressure	100 to 1500 PSI	(7 to 105 BAR)
RPM	1725 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

Bore	0.787"	(20 mm)
Crankcase Capacity	18 oz.	(0.55 L)
Maximum Fluid Temperature	160°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)
Weight	19.8 lbs.	(9 kg)
Dimensions	11.69" 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	5.2	N/A	N/A	N/A	1190	5.5
	4.0	15	3.3	4.1	4.9	5.5	6.1	950	4.4
	3.0	11	2.5	3.1	3.7	4.2	4.5	713	3.3
340	4.0	15	3.3	4.1	4.9	N/A	N/A	1725	Direct Drive
350	5.0	19	4.1	5.2	N/A	N/A	N/A	1725	Direct Drive

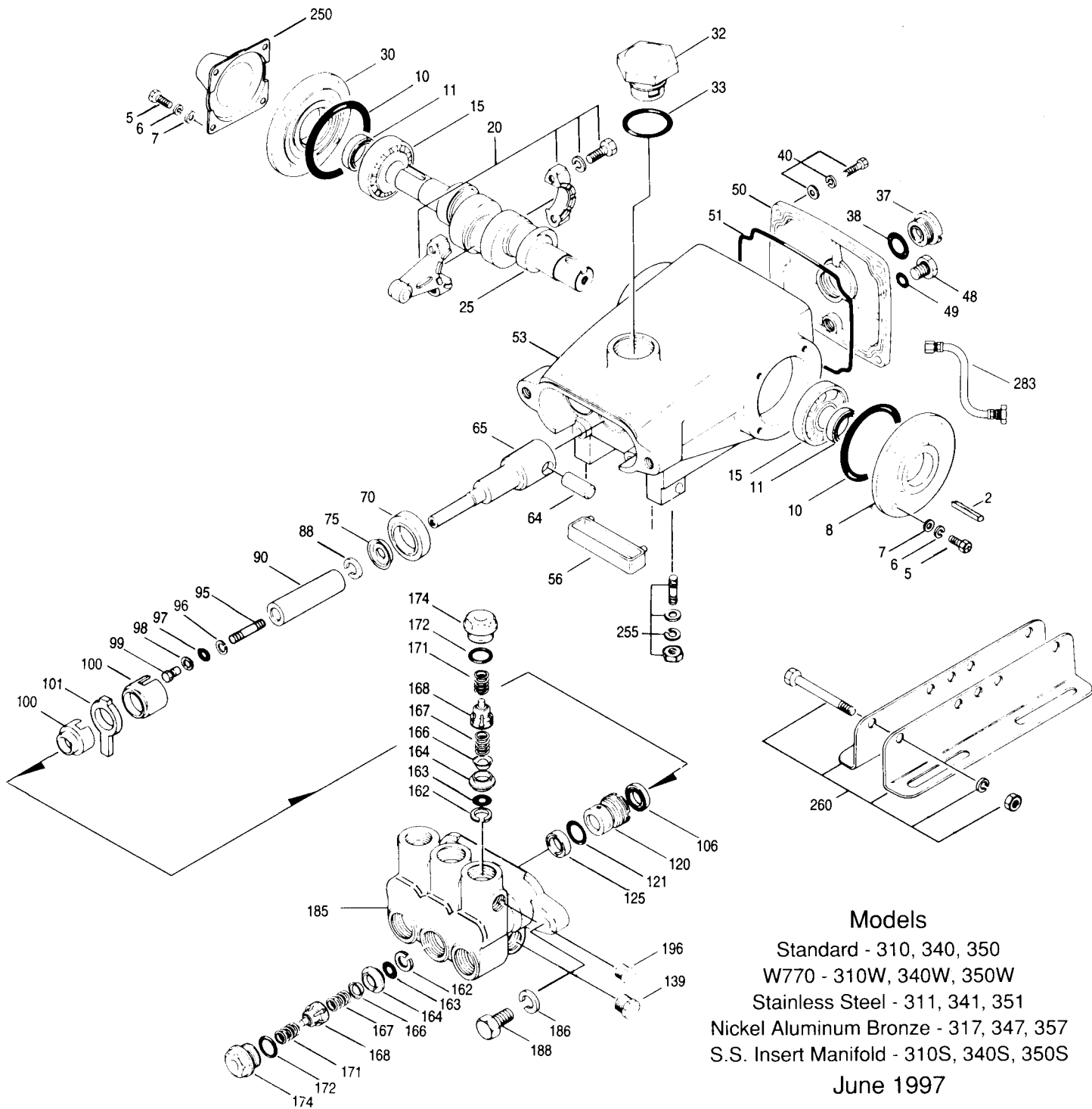
See Complete Drive Accessory Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 03.

"Customer confidence is our greatest asset"

PARTS LIST

Item	Part Number				Description	Qty
	Models	Models	Models	Models		
	310,340,350	310W,340W,350W	311,341,351	317,347,357		
2	30057	30057	30057	30057	Key (M6)	1
5	92519 Z	92519 Z	89618 S	89618 S	Screw, Sems Comb Head (M6x16)	8
6	—	—	15849 S	15849 S	Lock Washer, Split (M6)	8
7	—	—	19933 S	19933 S	Washer (M6)	8
8	43344 A	43344 A	43344 A	43344 A	Bearing Case	1/2
10	43343 B	43343 B	43343 B	43343 B	O-Ring, Bearing Case	2
11	43222 B	43222 B	43222 B	43222 B	Oil Seal, Crankshaft - (310, 350-2) (340-1)	1/2
15	14480	14480	14480	14480	Bearing	2
20	43345 ZZ	43345 ZZ	43345 ZZ	43345 ZZ	Connecting Rod Assy	3
25	43342	43342	43342	43342	Crankshaft - Dual End - 310, 310W, 311, 317	1
	44945	★ 44945	★ 44945	★ 44945	Crankshaft - Single End - 340, 340W, 341, 347	1
	43838	★ 43838	★ 43838	★ 43838	Crankshaft - Dual End - 350, 350W, 351, 357	1
30	44949 A	44949 A	44949 A	44949 A	Blind Shaft Cover - 340	1
32	43211	43211	43211	43211	Oil Filler Cap	1
	44666	44666	44666	44666	Oil Filler Cap, Domed - Gearbox Models	1
33	14177 B	14177 B	14177 B	14177 B	O-Ring, Filler Cap	1
37	43987	43987	43987	43987	Oil Gauge, Bubble	1
38	44428 B	44428 B	44428 B	44428 B	Gasket, Flat, Oil Gauge	1
40	92520 Z	92520 Z	92542 S	92542 S	Screw, Sems Comb Head (M6x20)	4
48	25625	25625	25625	25625	Drain Plug	1
49	23170 B	23170 B	23170 B	23170 B	O-Ring, Drain Plug	1
50	43339 A	43339 A	43339 A	43339 A	Crankcase Cover	1
51	43340 B	43340 B	43340 B	43340 B	O-Ring, Crankcase Cover	1
53	43338 A	43338 A	43338 A	43338 A	Crankcase (4 Screw, Large Cap)	1
56	43355	43355	43355	43355	Oil Pan	1
64	43351 S	43351 S	43351 S	43351 S	Pin, Plunger Rod	3
65	43365 S	43365 S	45256 SS	45256 SS	Plunger Rod	3
70	43228 B	43228 B	43228 B	43228 B	Oil Seal, Crankcase	3
75	43328 S	43328 S	43328 S	43328 S	Barrier Slinger	3
88	45697 S	45697 S	45697 S	45697 S	Washer, Keyhole (M18)	3
90	43367 CC	43367 CC	43367 CC	43367 CC	Plunger (M71)	3
95	—	—	89653 SS	89653 SS	Stud, Plunger Retainer (M6x58)	3
96	43235 T	43235 T	43235 T	43235 T	Back-up Ring, Plunger Retainer	3
97	17399 B	17399 B	14160 V	17399 B	O-Ring, Plunger Retainer	3
	14160 V	14160 V	17399 B	14160 V	O-Ring, Plunger Retainer	3
98	45891 CU	45891 CU	44041 SS	44041 SS	Gasket	3
99	104360 S	104360 S	44031 SS	44031 SS	Plunger Retainer	3
100	45682 P	45682 P	45682 P	45682 P	Seal Retainer Adapter - Front	3
	45681 P	45681 P	45681 P	45681 P	Seal Retainer - Rear	3
101	43302	43302	43302	43302	Wick - Long Tab	3
106	43305 BS	43305 BS	45153 VSS	44127 BSS	Lo-Pressure Seal w/Spring	3
	45153 VSS	45153 VSS	44127 BSS	45153 VSS	Lo-Pressure Seal w/Spring	3
120	45679 BB	45679 BB	45680 SS	45680 SS	Seal Case	3
121	14200 B	14200 B	11719 V	14200 B	O-Ring, Seal Case	3
	11719 V	11719 V	14200 B	11719 V	O-Ring, Seal Case	3
125	43307 BTS	43307 BTS	44936 VSS	44649 BSS	Hi-Pressure Seal	3
	44936 VSS	44936 VSS	44649 BSS	44936 VSS	Hi-Pressure Seal	3
	46667 H	46667 H	46667 H	46667 H	Hi-Pressure Seal "Hi-Temp"	3
139	22179 CBB	22179 CBB	45156 SS	44563 N	Plug, Inlet 1/2"	1
162	43357 T	43357 T	43357 T	43357 T	Back-up Ring, Valve Seat	6
163	43358 B	43358 B	44938 V	43358 B	O-Ring, Valve Seat	6
	44938 V	44938 V	43358 B	44938 V	O-Ring, Valve Seat	6
164	43725 S	43725 S	44128 SS	44128 SS	Valve Seat	6
166	43723 S	43723 S	44057 SS	44057 SS	Valve	6
167	43750 S	43750 S	44056 SS	44056 SS	Valve Spring	6
168	44565 P	44565 P	44565 P	44565 P	Retainer, Valve Spring	6
171	—	—	44832 S	44832 S	Coil Spring, Retainer	6
172	17615 B	17615 B	15855 V	17615 B	O-Ring, Valve Plug	6
	15855 V	15855 V	17615 B	15855 V	O-Ring, Valve Plug	6
174	43849 CBB	43849 CBB	45155 SS	44833 N	Valve Plug	6
185	44837 CBB	—	45151 SS	44124 N	Manifold Head	1
	46278 BBI	—	—	—	Manifold Head w/S.S. Inserts	1
	—	46825 W	—	—	Manifold Head W770	1
186	12503 Z	12503 Z	15847 S	15847 S	Lock Washer, Split (M10), Manifold Head	2
188	87931 Z	87931 Z	87950 S	87950 S	Bolt, Hex Socket (M10x35), Manifold Head	2
196	43633 BB	43633 BB	—	—	Plug, Discharge 3/8" Unchromed	1
250	118672	118672	118672	118672	Shaft Protector (Belt Drive Only)	1
255	30243	30243	30243	30243	Direct Mount Kit (Belt Drive Only)	1
260	30611	30611	30611	30611	Angle Rail Mounting - B - (28499,30900,30910,30920) (Belt Drive Only)	1
265	30659	30659	30659	30659	Complete Mounting Kit (30611,30633, 30944,118672) (Belt Drive Only)	1
270	30633	30633	30633	30633	Pulley & Key Assy (30058,30057) (Belt Drive Only)	1

EXPLODED VIEW



Models

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

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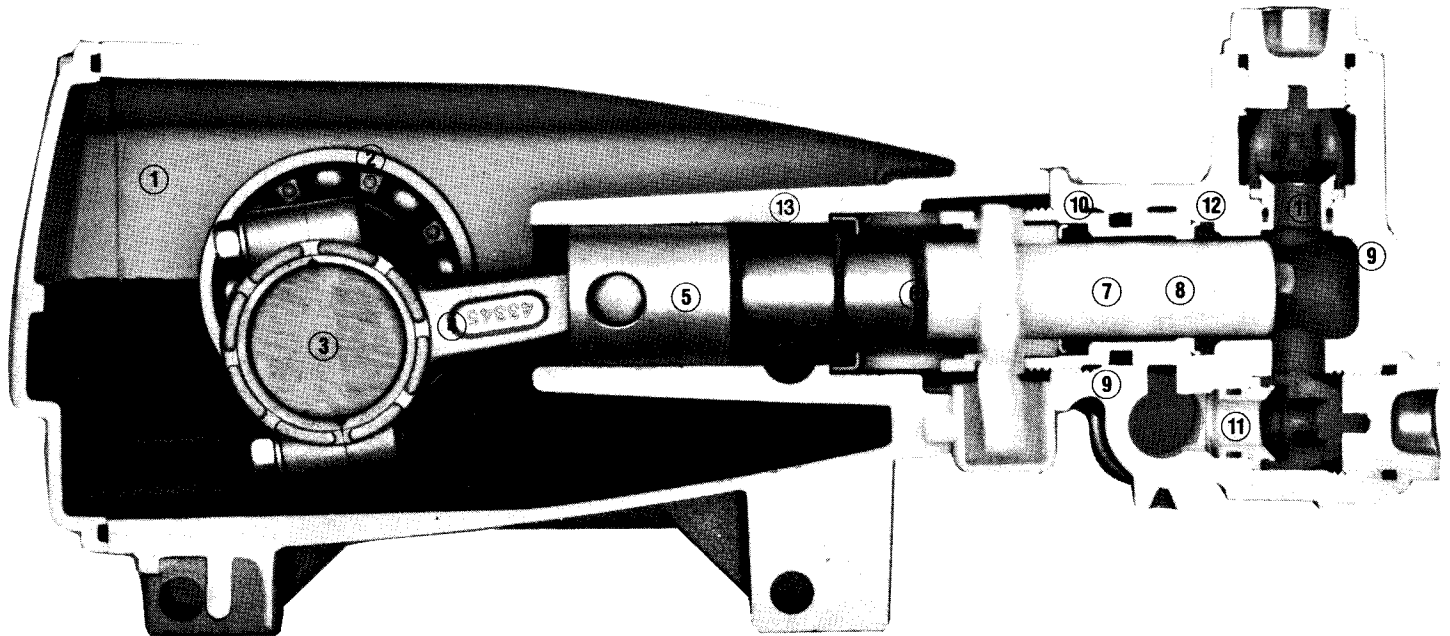
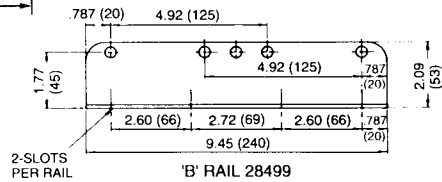
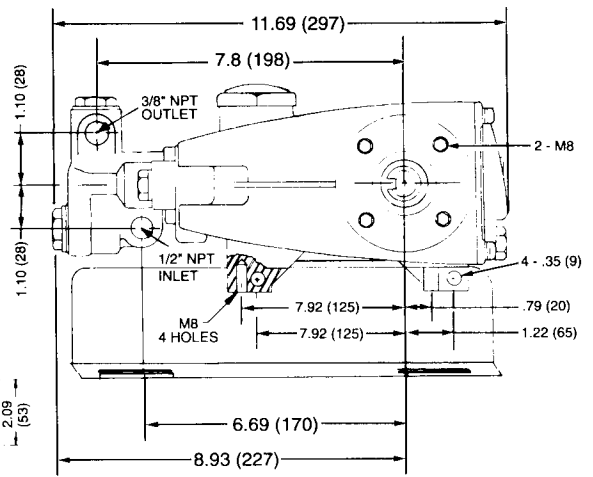
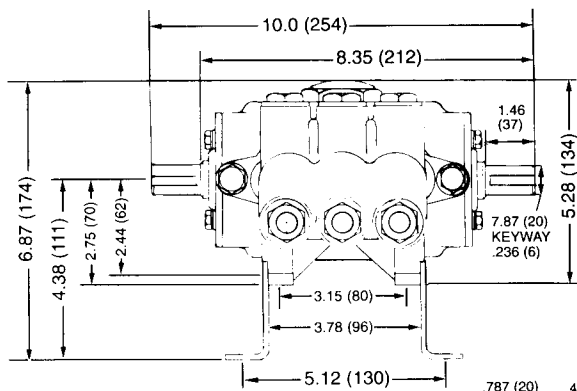
275	30944	30944	30944	30944	Hub & Key Assy (M20 w/M6 Keyway) (Belt Drive Only)	1
283	34344	34344	34344	34344	Oil Drain Kit	1
299	810027 BB	—	812207 SS	814559 N	Complete Head	1
	810027S BBI	—	—	—	Complete Head w/S.S. Inserts	1
	—	810027W W	—	—	Complete Head w/W770 Manifold	1
300	30623 BTS	30623 BTS	34155 VSS	34153 BSS	Seal Kit (Incls: 97,106,121,125)	1
	34155 VSS	34155 VSS	34153 BSS	34155 VSS	Seal Kit (Incls: 97,106,121,125)	3
	■ 33623 H	■ 33623 H	■ 33623 H	■ 33623 H	Seal Kit "Hi-Temp" (Incls: 97,106,121,125)	1
310	30821 S	30821 S	34152 SS	34152 SS	Valve Kit (Incls: 162-164,166-168,172)	2
350	30696	30696	30696	30696	Valve Seat Removal Tool	1
351	33004	33004	33004	33004	Seal Case Socket, 1/2" Drive	1

* See Gearbox Gas Engine Drive and BD Electric Motor Drive data sheets.

Bold print part numbers are standard or unique to a particular pump model. Italics are optional items. ■ Add .3000 to part numbers for Hi-Temp model.

See Tech Bulletins 03, 08, 24, 27, 32, 36, 43, 45, 46, 47, 49, 52, 53, 54 and 74 for additional information.

MATERIAL CODES (Not Part of Part Number) A=Aluminum B=Buna-N BB=Brass C=Chromeplated CC=Ceramic CU=Copper H=Hi-Temp I=S.S. Inserts N=Nickel Aluminum Bronze P=PVDF S=304SS SS=316SS T=Teflon V=Viton W=W770 Special CW Manifold Z=Zinc Plated ZZ=Zamak



- 1 Diecast 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 Precision-polished solid ceramic **plungers** provide maximum resistance to corrosion and abrasion.
- 8 The close tolerance concentricity of the ceramic **plunger** maximizes seal life.
- 9 **Manifolds** are a high tensile strength forged brass, 316 stainless steel, nickel aluminum bronze or W770 alloy for long term, continuous duty.
- 10 100% wet **seal** design adds to service life by allowing pumped fluids to cool and lubricate on both sides.
- 11 Stainless steel **valves, seats and springs** provide corrosion-resistance, positive seating and long life.
- 12 Specially formulated, CAT PUMP exclusive, **Hi-Pressure Seals** 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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