

## 7 Frame Plunger Pump

Model

**70**

### 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.

#### Quality Materials

- All stainless steel valves are heat treated and seats are roller burnished for a positive seal and extended valve life.
- Forged brass manifold is strong and corrosion resistant.
- Special hardened, polished surface of solid ceramic plunger is abrasion resistant and results in extended seal life.
- Specially formulated, CAT PUMP exclusive, Hi-Pressure Seal offers 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 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.

### SPECIFICATIONS

	U.S. Measure	Metric Measure
<b>MODEL 70</b>		
Volume .....	4.5 GPM	(17 L/M)
Discharge Pressure .....	100 to 5000 PSI	(7 to 350 BAR)
Inlet Pressure .....	Flooded to 40 PSI	(Flooded to 2.8 BAR)
RPM .....	1700 RPM	(1700 RPM)
Bore.....	0.551"	(14 mm)
Stroke.....	0.945"	(24 mm)
Crankcase Capacity .....	.25 oz.	(0.75 L)
Max 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 - Single End.....	0.945"	(24 mm)
Weight.....	38 lbs.	(17.2 kg)
Dimensions .....	14.02" x 8.20" x 6.54"	(356 x 208 x 166 mm)

### HORSEPOWER REQUIREMENTS

FLOW		PRESSURE				MOTOR PULLEY SIZE	
		PSI 3000	PSI 3500	PSI 4000	PSI 5000	Using 1725 RPM Motor & Std. Pump Pulley O.D.	
U.S. GPM	L/M	BAR 210	BAR 245	BAR 280	BAR 350	RPM	Pulley O.D.
4.5	17	9.3	10.8	12.3	15.4	1700	9.5
4.0	15	8.3	9.5	11.0	13.7	1511	8.5

**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.

*"Customer confidence is our greatest asset"*

# PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY
2	30067	Key (M8 x 7.5 x 25)	1
5	92519 Z	Sems Comb Head Screw, Bearing Case (M6 x 16)	4/8
8	43466 A	Bearing Case - O.E.M.	1
9	43261	Shim, Adjusting, Bearing Case, 2 Pc.	1
10	12393 B	O-Ring, Bearing Case	2
11	43222 B	Oil Seal, Crankshaft	1
15	43221	Bearing	2
20	46555	Connecting Rod - H	3
25	46554	Crankshaft - Single End	1
30	44967 A	Blind Shaft Cover - O.E.M.	1
32	44666	Oil Filler Cap, Domed	1
33	14177 B	O-Ring, Oil Filler Cap	1
37	43987	Oil Gauge, Bubble	1
38	44428 B	Flat Flex. Gasket, Oil Gauge	1
40	92520 Z	Sems Comb Head Screw, Crankcase Cover (M6 x 20)	4
47	25625	<i>Adapter, Drain Plug (1/4" NPT) (For Optional Drain Hose)</i>	1
48	25625 Z	Drain Plug - 1/4"	1
49	23170 B	O-Ring, Drain Plug	1
50	46509 A	Crankcase Cover - O.E.M.	1
51	44836 B	O-Ring, Crankcase Cover	1
53	44555 A	Crankcase (M10) - O.E.M.	1
55	46868 S	Stud, Manifold (M10 x 35)	4
56	43240 P	Oil Pan	1
64	43237 S	Pin, Plunger Rod	3
65	44234 SZZ	Plunger Rod, Short - O.E.M.	3
69	43227 S	Washer, Oil Seal	3
70	43228 B	Oil Seal, Crankcase	3
75	43328 S	Barrier Slinger	3
83	45686 P	Seal Retainer - Rear	3
85	43571	Wick - Long Tab	3
86	45687 P	Seal Retainer - Adapter	3
87	46556 B	Adapter, Plunger	3
88	45697 S	Keyhole Washer (M18)	3
90	45890 CC	Plunger	3
95	89649 Z	Stud, Plunger Retainer (M6 x 70)	3
96	43235 T	Back-Up Ring, Plunger Retainer	3
97	17399 B	O-Ring, Plunger Retainer	3
98	45891 CU	Gasket, Plunger Retainer	3
99	46504 S	Plunger Retainer (M5)	3
106	45188 BTS	Lo-Pressure Seal w/Spring	3
120	46566 BB	Seal Case	3
121	20285 B	O-Ring, Seal Case	3
126	45896 BB	Female Adapter	3
127	45895 BT	V-Packing	9
128	46567 BB	Male Adapter	3
139	43448 BB	<i>Plug, Inlet Manifold - 1/2" NPT</i>	1
162	20937 T	Spiral Back-Up Ring, Valve Seat	6
163	17547 B	O-Ring, Valve Seat	6
164	46560 S	Valve Seat	6
166	46562 S	Valve	6
167	43750 S	Valve Spring	6
168	44565 P	Spring Retainer	6
172	145952 B	O-Ring, Valve Plug	6
173	46692 T	Spiral Back-Up Ring, Valve Plug	6
174	46581 BB	Valve Plug - Extended	6
185	46558 BB	Manifold Head - F - EXT - (M10) - O.E.M.	1
194	45550 Z	Hex Toothed Flanged Nut (M10)	4
255	30243	<i>Direct Mount Kit</i>	1
260	30645	<i>Angle Rail Assy A- U.S. (30635,30900,30910,30920)</i>	1
	30611	<i>Angle Rail Assy B- U.S. (28499,30900,30910,30920)</i>	1
265	30660	<i>Complete Mounting Kit - U.S. (30645,33000,30206,43256,30067)</i>	1
269	30206	<i>9.75" Pulley</i>	1
274	33000	<i>Hub (M24)</i>	1
300	33799	Seal Kit (Incls: 85,97,106,127)	1
310	33822	Valve Kit (Incls: 162,163,164,166,167,168,172,173)	2
350	30696	<i>Valve Seat Removal Tool</i>	1
351	43257	<i>Seal Case Removal Tool</i>	1
—	33005	<i>1/2" Drive Tool, Seal Case Removal Tool</i>	1
352	44050	<i>Oil Gauge Removal Tool</i>	1

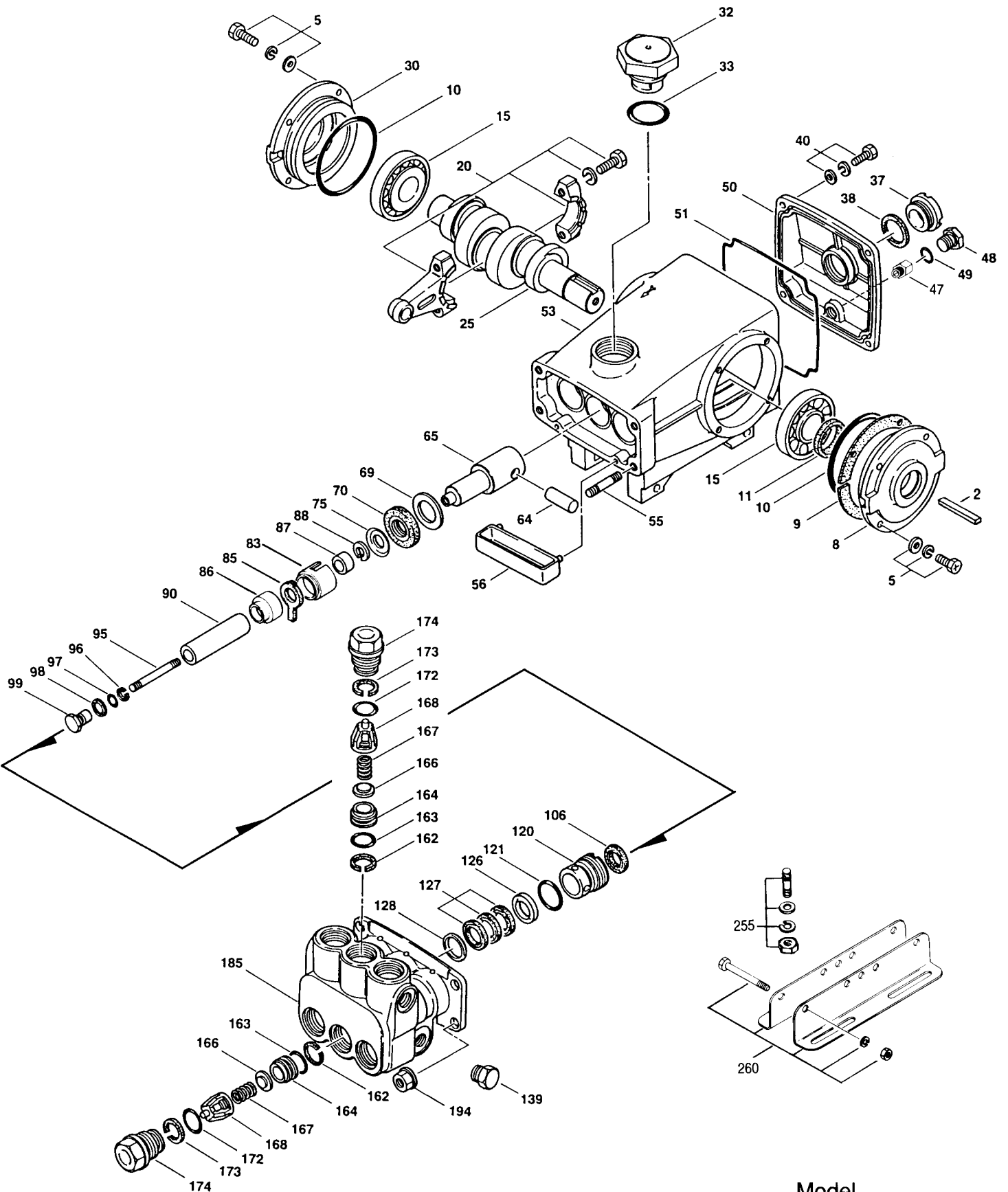
*Italics are optional items. Refer to Tech Bulletins 24, 43, 51, 54, 58, 61, 64 and 67 for additional information.*

See 8051-8078 Gearbox data sheet for optional gearbox drive.

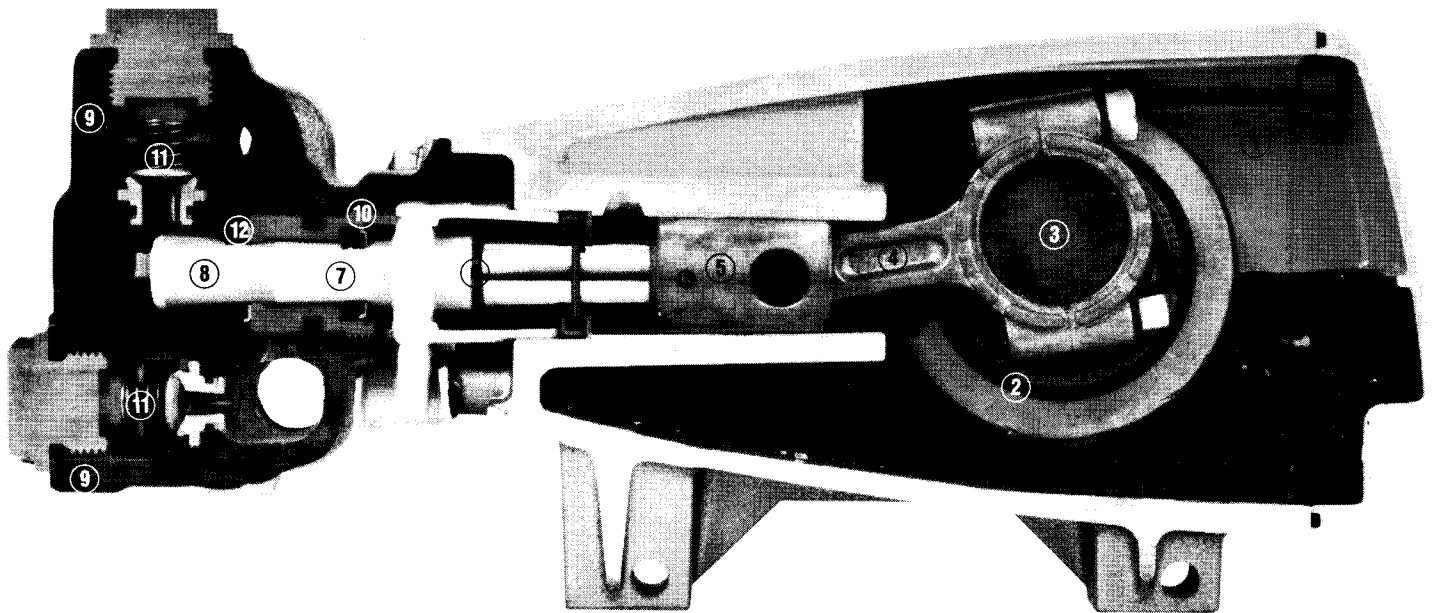
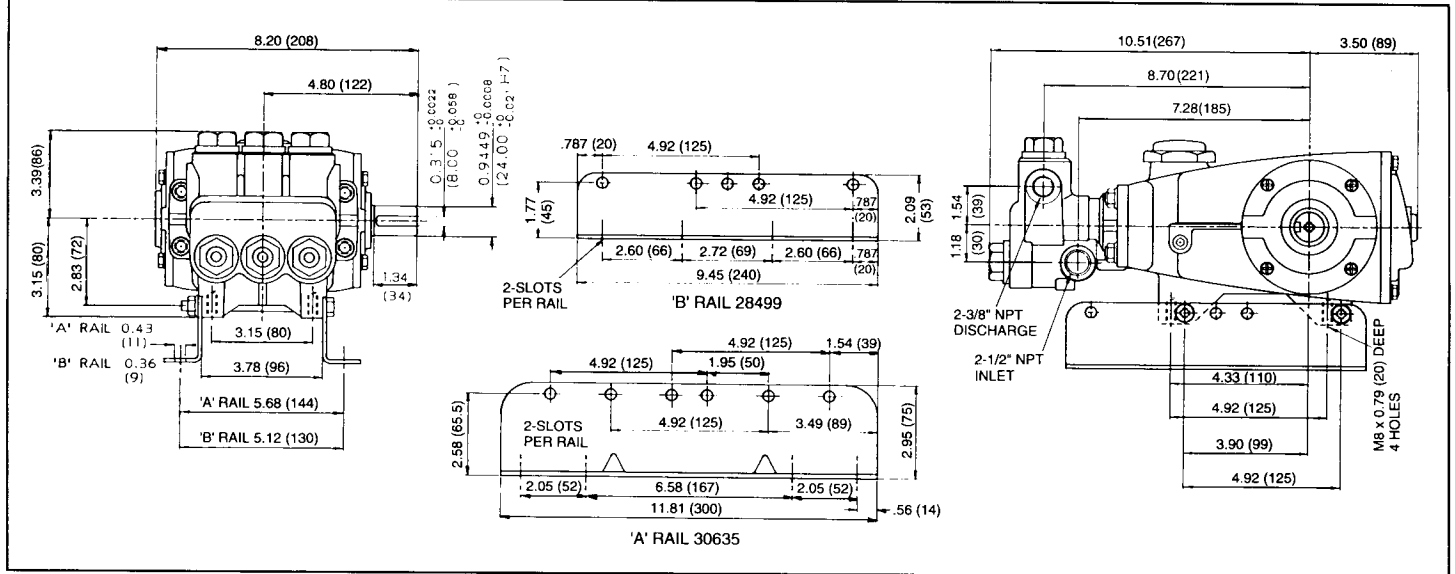
**MATERIAL CODES (Not Part of Part Number)**

**A=Aluminum B=Buna-N BB=Brass C=Chromeplated CC=Ceramic CU=Copper P=PVDF S=304SS T=Teflon Z=Zinc Plated ZZ=Zamak**

# EXPLODED VIEW



Model  
70  
January 1996



- 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 high strength **connecting rods** are 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 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.

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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