

## 7 Frame Plunger Pump

Models

56, 57  
59, 60

### FEATURES

#### Superior Design

- Triplex plunger design gives smoother fluid flow.
- V-Packings are completely lubricated and cooled by the fluid being pumped.
- Inlet and discharge valve assemblies interchange for easier maintenance.
- Lubricated Lo-Pressure Seals provide double protection against external leakage.
- Oil bath crankcase assures optimum lubrication.
- Close tolerance concentricity of the ceramic plunger maximizes seal life.
- Convenient Gearbox Pump version for direct mounting to gas engine.

#### 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 concentric, high density, polished, graphite impregnated, solid ceramic plungers are abrasion resistant and result in extended seal life.
- Specially formulated, CAT PUMP exclusive, V-Packings offers 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 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

#### MODEL 56

Volume .....	5.5 GPM	(21 L/M)
Discharge Pressure.....	100 to 3500 PSI	(7 to 245 BAR)
RPM .....	1210 RPM	(1210 RPM)
Stroke .....	0.945"	(24 mm)

#### MODEL 56 — Gearbox

Volume .....	8 GPM	(30 L/M)
Discharge Pressure.....	2500 PSI	(175 BAR)
RPM .....	1760 RPM	(1760 RPM)
Stroke .....	0.945"	(24 mm)

#### MODEL 57

Volume .....	4.5 GPM	(17 L/M)
Discharge Pressure.....	100 to 4000 PSI	(7 to 280 BAR)
RPM .....	1285 RPM	(1285 RPM)
Stroke .....	0.728"	(18.5 mm)

#### MODEL 59 — Gearbox

Volume .....	5.5 GPM	(21 L/M)
Discharge Pressure.....	100 to 3500 PSI	(7 to 245 BAR)
RPM .....	1570 RPM	(1570 RPM)
Stroke .....	0.728"	(18.5 mm)

#### MODEL 60 — Gearbox

Volume .....	4.5 GPM	(17 L/M)
Discharge Pressure.....	100 to 4000 PSI	(7 to 280 BAR)
RPM .....	1570 RPM	(1570 RPM)
Stroke .....	0.591"	(15 mm)

### COMMON SPECIFICATIONS

Bore .....	0.708"	(18 mm)
Inlet Pressure.....	Flooded to 60 PSI	(Flooded to 4 BAR)
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.....	0.945"	(24 mm)
Weight .....	25.5 lbs.	(11.5 kg)
Dimensions.....	13.93" x 8.2" x 6.41"	(354 x 208 x 163 mm)

### HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE				MOTOR PULLEY SIZE	
	U.S. GPM	L/M	PSI 2500	PSI 3000	PSI 3500	PSI 4000	RPM	Pulley O.D.
56	5.5	21	9.4	11.3	13.2	N/A	1210	6.9
	6.0	23	10.3	12.4	N/A	N/A	1320	7.5
	8.0	30	13.7	N/A	N/A	N/A	1760	Gearbox
57	4.5	17	7.7	9.3	10.8	12.4	1285	7.3
59	5.5	21	9.4	11.3	13.2	N/A	1570	Gearbox
60	4.5	17	7.7	9.3	10.8	12.3	1570	Gearbox

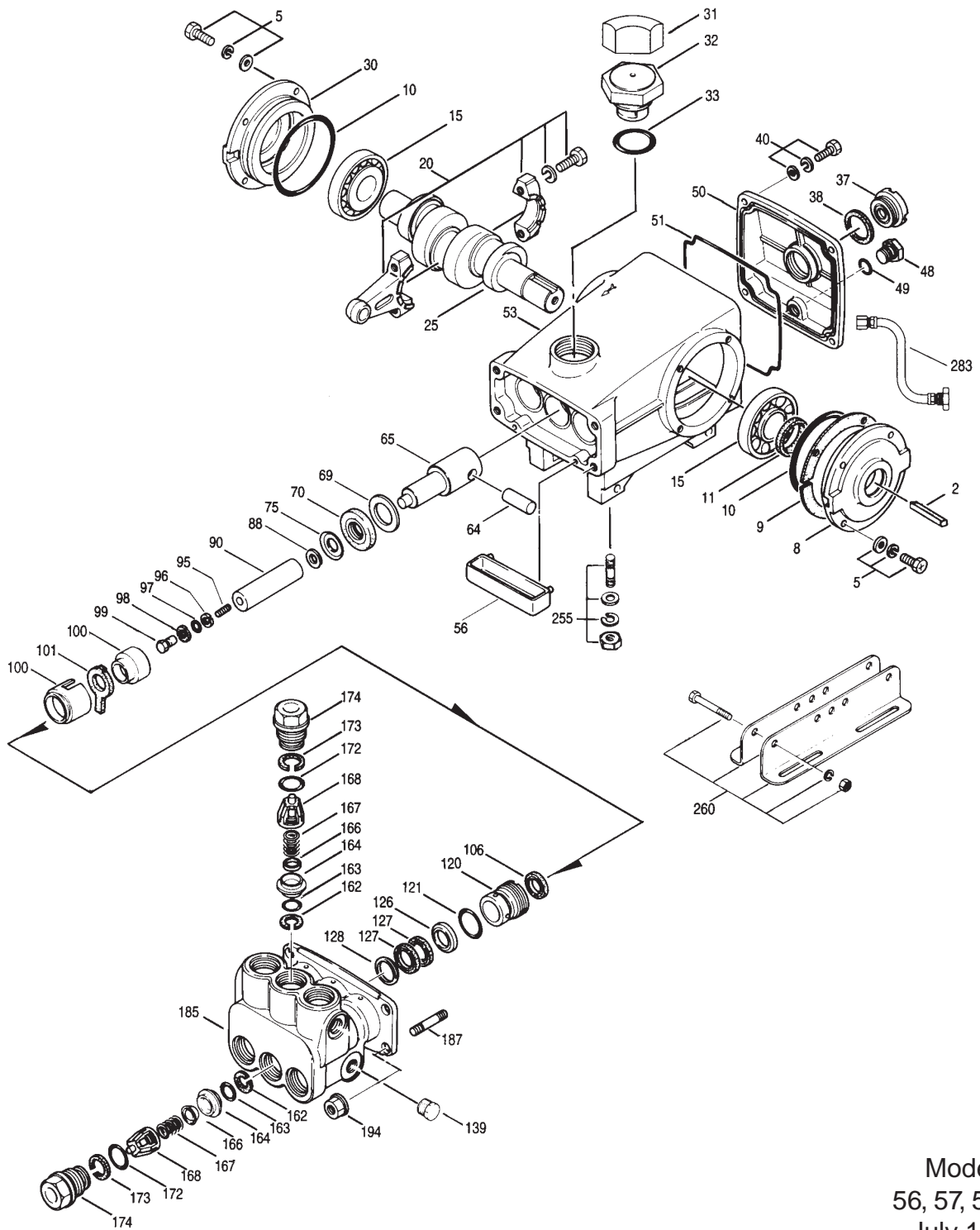
See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 03.

*"Customer confidence is our greatest asset"*

# PARTS LIST

ITEM	PART NUMBER							DESCRIPTION	QTY	
	56	MATL	57	MATL	59	MATL	60			MATL
● 2	30067	STL	30067	STL	30067	STL	30067	STL	Key (M8x7.5x25)	1 ●
5	92519	STZP	92519	STZP	92519	STZP	92519	STZP	Screw, Sems HHC (M6x16)	4/8
8	43466	AL	43466	AL	43466	AL	43466	AL	Cover, Bearing	1
9	43261		43261		43261		43261		Shim, Split, Bearing Cover	1
10	12393	NBR	12393	NBR	12393	NBR	12393	NBR	O-Ring, Bearing Cover	2
11	43222	NBR	43222	NBR	43222	NBR	43222	NBR	Seal, Oil Crankshaft	1
15	43221	STL	43221	STL	43221	STL	43221	STL	Bearing, Roller	2
20	46302	HS	46302	HS	46302	HS	46302	HS	Rod, Connecting	3
25	<b>44233</b>	<b>FCM</b>	<b>44947</b>	<b>FCM</b>	<b>44947</b>	<b>FCM</b>	<b>44591</b>	<b>FCM</b>	Crankshaft, Single End	1
30	44967	AL	44967	AL	44967	AL	44967	AL	Cover, Bearing, Blind	1
31	828710		828710		828710		828710		Protector, Oil Cap	1
32	44666	RTP	44666	RTP	44666	RTP	44666	RTP	Cap, Oil Filler, Domed-Gearbox Models	1
33	14177	NBR	14177	NBR	14177	NBR	14177	NBR	O-Ring, Oil Filler Cap - 70	1
37	43987		43987		43987		43987		Gauge, Oil Bubble	1
38	44428	NBR	44428	NBR	44428	NBR	44428	NBR	Gasket, Flat Flex, Oil Gauge - 80	1
40	92520	STZP	92520	STZP	92520	STZP	92520	STZP	Screw, Sems HHC (M6x20)	4
48	25625	STCP	25625	STCP	25625	STCP	25625	STCP	Plug, Drain (1/4"x11)	1
49	23170	NBR	23170	NBR	23170	NBR	23170	NBR	O-Ring, Drain Plug	1
50	46509	AL	46509	AL	46509	AL	46509	AL	Cover, Crankcase	1
51	44836	NBR	44836	NBR	44836	NBR	44836	NBR	O-Ring, Crankcase Cover - 70	1
53	<b>44555</b>	<b>AL</b>	<b>44555</b>	<b>AL</b>	<b>45361</b>	<b>AL</b>	<b>45361</b>	<b>AL</b>	Crankcase (M10)	1
56	43240	POP	43240	POP	43240	POP	43240	POP	Pan, Oil	1
64	43237	S	43237	S	43237	S	43237	S	Pin, Rist	3
65	44234	CPZZ	44234	CPZZ	44234	CPZZ	44234	CPZZ	Rod, Plunger, Short	3
69	43227	STZP	43227	STZP	43227	STZP	43227	STZP	Washer, Oil Seal	3
70	43228	NBR	43228	NBR	43228	NBR	43228	NBR	Seal, Oil Crankcase	3
75	43328	S	43328	S	43328	S	43328	S	Slinger, Barrier	3
88	45697	S	45697	S	45697	S	45697	S	Washer, Keyhole (M18)	3
90	43232	CC	43232	CC	43232	CC	43232	CC	Plunger (M77)	3
95	89649	ZP	89649	ZP	89649	ZP	89649	ZP	Stud, Plunger Retainer (M6 x 70)	3
96	43235	PTFE	43235	PTFE	43235	PTFE	43235	PTFE	Back-up-Ring, Plunger Retainer	3
97	17399	NBR	17399	NBR	17399	NBR	17399	NBR	O-Ring, Plunger Retainer - 80	3
	14160	FPM	14160	FPM	14160	FPM	14160	FPM	O-Ring, Plunger Retainer	3
98	45891	CU	45891	CU	45891	CU	45891	CU	Gasket, Plunger Retainer	3
99	46504	S	46504	S	46504	S	46504	S	Retainer, Plunger (M5)	3
100	45686	PVDF	45686	PVDF	45686	PVDF	45686	PVDF	Retainer, Seal, Rear	3
	45687	PVDF	45687	PVDF	45687	PVDF	45687	PVDF	Retainer, Seal Adapter, Front	3
101	43239		43239		43239		43239		Wick, Long Tab	3
106	43243	NBR	43243	NBR	43243	NBR	43243	NBR	Seal, LPS w/S-Spg	3
	44926	FPM	44926	FPM	44926	FPM	44926	FPM	Seal, LPS w/S-Spg	3
120	45685	BB	45685	BB	45685	BB	45685	BB	Case, Seal	3
121	20285	NBR	20285	NBR	20285	NBR	20285	NBR	O-Ring, Seal Case - 70	3
	11693	FPM	11693	FPM	11693	FPM	11693	FPM	O-Ring, Seal Case	3
126	44550	BB	44550	BB	44550	BB	44550	BB	Adapter, Female	3
127	44549	NBR	44549	NBR	44549	NBR	44549	NBR	V-Packing	6
	45617	FPM	45617	FPM	45617	FPM	45617	FPM	V-Packing	6
128	44548	NY	44548	NY	44548	NY	44548	NY	Adapter, Male	3
	45618	BB	45618	BB	45618	BB	45618	BB	Adapter, Male	3
139	43448	BB	43448	BB	43448	BB	43448	BB	Plug, Inlet, (1/2" NPT)	1
162	43248	PTFE	43248	PTFE	43248	PTFE	43248	PTFE	Back-up-Ring, Seat	6
163	43249	NBR	43249	NBR	43249	NBR	43249	NBR	O-Ring, Seat	6
	44383	FPM	44383	FPM	44383	FPM	44383	FPM	O-Ring, Seat	6
164	43722	S	43722	S	43722	S	43722	S	Seat	6
166	43721	S	43721	S	43721	S	43721	S	Valve	6
167	43751	S	43751	S	43751	S	43751	S	Spring, Valve	6
168	44564	PVDF	44564	PVDF	44564	PVDF	44564	PVDF	Retainer, Spring	6
172	14179	NBR	14179	NBR	14179	NBR	14179	NBR	O-Ring, Valve Plug - 70	6
	15855	FPM	15855	FPM	15855	FPM	15855	FPM	O-Ring, Valve Plug	6
173	20213	PTFE	20213	PTFE	20213	PTFE	20213	PTFE	Back-up-Ring, Valve Plug	6
174	45939	BB	45939	BB	45939	BB	45939	BB	Plug, Valve, Extended	6
185	45937	FBB	45937	FBB	45937	FBB	45937	FBB	Head, Manifold, EXT (M10)	1
187	46868	S	46868	S	46868	S	46868	S	Stud, Manifold (M10x35)	4
194	45550	STZP	45550	STZP	45550	STZP	45550	STZP	Nut, Hex Flanged (M10)	4
255	30243	STZP	30243	STZP	—	—	—	—	Kit, Direct Mount	
260	30611	STZP	30611	STZP	—	—	—	—	Assy, Angle Rail, B, U.S. (28499,30900,30910,30920)	1
260	30645	STZP	30645	STZP	—	—	—	—	Assy, Angle Rail, A, U.S. (30635,30900,30910,30920)	1
265	30660		30660		—	—	—	—	Kit, Complete Mounting, U.S. (30645,33000,30206,43256,30067)	1
● 269	30206	F	30206	F	—	—	—	—	Pully, (9.75") AB (See complete Drive Packages, Tech Bulletin 03)	1 ●
● 274	33000	STL	33000	STL	—	—	—	—	Hub (M24), H Series (See complete Drive Packages, Tech Bulletin 03)	1 ●
● 283	34334		34334		34334		34334		Kit, Oil Drain	1 ●

# EXPLODED VIEW



Models  
56, 57, 59, 60  
July 1998

● 299	814618	FBB	814618	FBB	814618	FBB	814618	FBB	814618	FBB	Head, Complete	1 ●
300	30799	NBR	30799	NBR	30799	NBR	30799	NBR	30799	NBR	Kit, Seal (Incls: 97,101,106,121,127)	1
310	33820	S	33820	S	33820	S	33820	S	33820	S	Kit, Valve, Ext. (Incls: 162-167, 172,173) [Effect. 8/90]	2
350	30696	STZP	30696	STZP	30696	STZP	30696	STZP	30696	STZP	Tool, Valve Seat Removal	1
351	43257	STZP	43257	STZP	43257	STZP	43257	STZP	43257	STZP	Tool, Seal Case Removal	1
	33005	STZP	33005	STZP	33005	STZP	33005	STZP	33005	STZP	Seal Case Socket, 1/2" Drive	1
352	44050	STZP	44050	STZP	44050	STZP	44050	STZP	44050	STZP	Tool, Oil Gauge Removal	1
—	6565.1		6565.1		6565.1		—		—		Plunger Pump Service Video, Section I	1

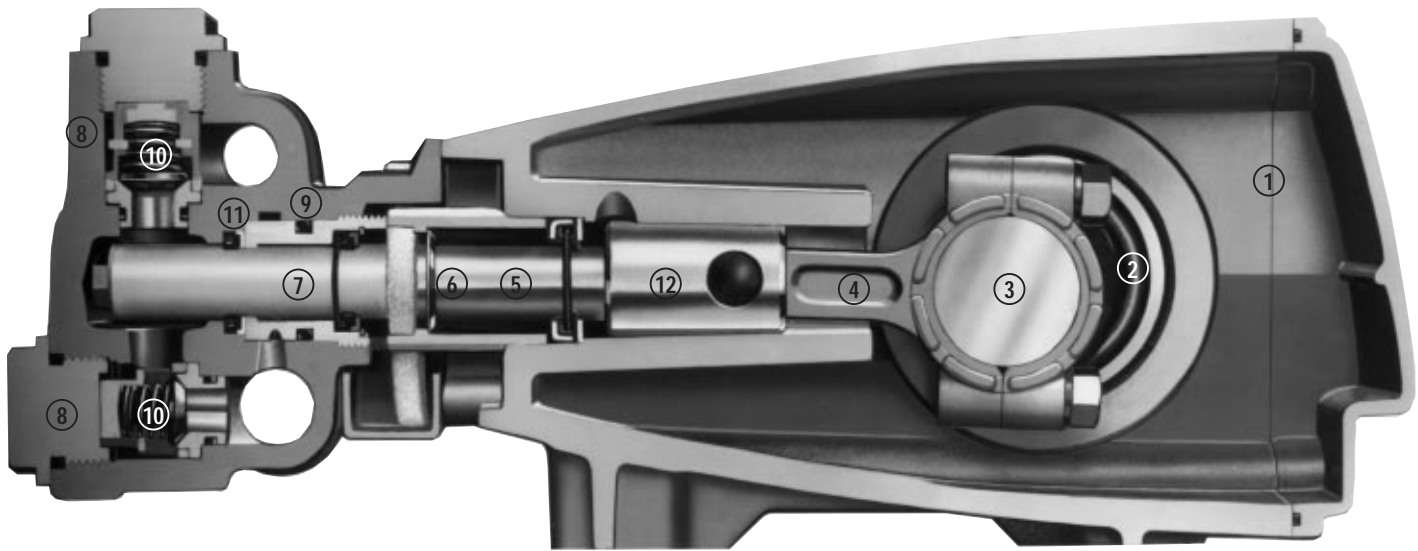
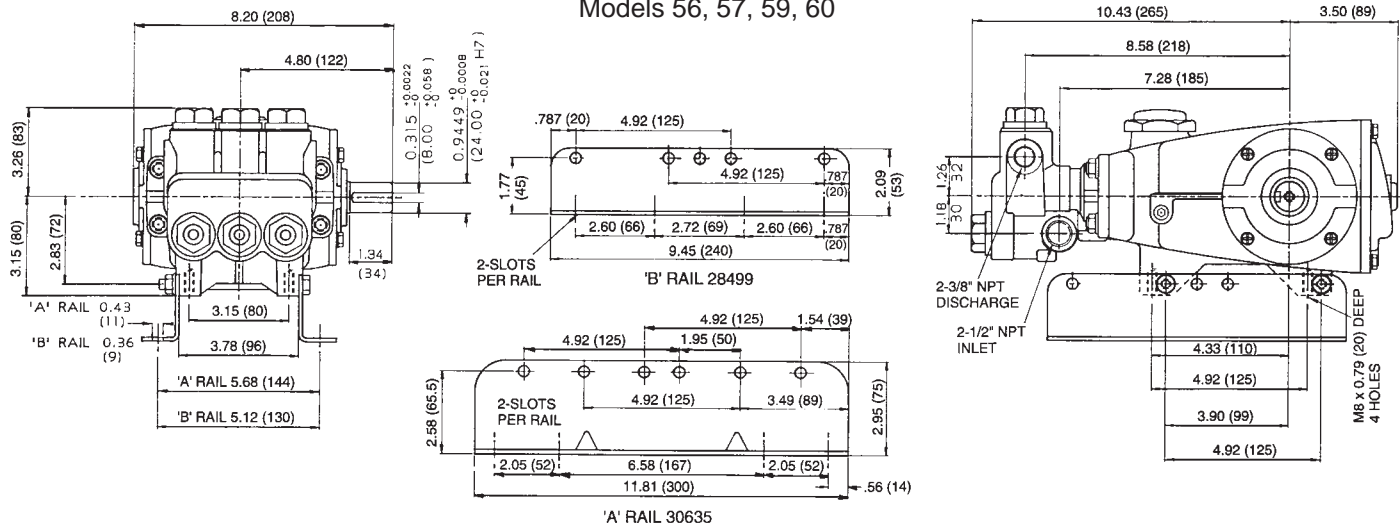
● Industrial discount. **Bold print part numbers are unique to a particular pump model.** *Italics are optional items.*

See Tech Bulletins 03, 24, 27, 35, 36, 43, 54, 58, 67, 74 and 77 for additional information. See 8051-8078 Gearbox Specification Sheet for direct drive Gas Engine option.

MATERIAL CODES (Not Part of Part Number): AL=Aluminum BB=Brass CC=Ceramic CU=Copper FBB=Forged Brass FCM=Forged Chrome-moly

FPM=Fluorocarbon (Viton®) HS=High Strength NBR=Medium Nitrile (Buna-N) NY=Nylon POP=Polypropylene PTFE=Polytetrafluoroethylene (Teflon®)  
PVDF=Fluoroplastic (High Strength) RTP=Reinforced Composite S=304SS STCP=Steel/Chrome Plated STL=Steel STZP=Steel/Zinc Plated ZP=Zinc Plated

Models 56, 57, 59, 60



- 1 Die cast aluminum **crankcase** means high strength, light weight, 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 Special stainless steel **plunger rods** with high strength crossheads for longevity and corrosion resistance.
- 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 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, **V-Packings** 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

July 1998 6896

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