

10 Frame Piston Pump

Models

623 820 1010

FEATURES

Superior Design

- Triplex Uniflow design provides continuous forward fluid flow for smooth operation.
- Wetted cups and floating pistons are lubricated and cooled by pumped fluid for long cup life.
- Mechanically actuated inlet valves give strong lift and easy prime.
- All stainless steel discharge valves are a spherical design for quieter operation.
- Oil bath crankcase assures optimum lubrication.
- Lubricated inlet seals prevent leakage and prolong life.

Quality Materials

- Cylinder and sleeve wear surfaces are hard chrome plated 304 stainless steel for maximum durability and abrasion resistance.
- Chrome plated, brass manifolds and optional stainless steel manifolds are strong and corrosion resistant.
- Heavy duty connecting rods are made of high quality Zamak offering superior bearing quality strength.
- Chrome-moly crankshaft gives unmatched strength and surface hardness.
- Oversized crankshaft bearings with greater loading capacity mean longer bearing life.

Easy Maintenance

- Stepped stainless steel piston rod with chrome plated, stainless steel sleeve allows easy replacement from front of pump.
- All wet-end wear parts are easily serviced without entering crankcase, requiring less time and effort.
- Wear parts are available in handy kits.
- Routine lubrication checks are the only maintenance required on this precision built pump.

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 623

	U.S. Measure	Metric Measure
Volume	6.0 GPM	(23 L/M)
Discharge Pressure	100 to 1200 PSI	(7 to 85 BAR)
RPM	850 RPM	(850 RPM)
Bore	0.787"	(20 mm)
Stroke	1.122"	(28.5 mm)

MODEL 820

	U.S. Measure	Metric Measure
Volume	10 GPM	(38 L/M)
Discharge Pressure	100 to 1000 PSI	(7 to 70 BAR)
RPM	940 RPM	(940 RPM)
Bore	0.984"	(25 mm)
Stroke	1.102"	(28 mm)

MODEL 1010

	U.S. Measure	Metric Measure
Volume	13 GPM	(49 L/M)
Discharge Pressure	100 to 700 PSI	(7 to 50 BAR)
RPM	900 RPM	(900 RPM)
Bore	1.122"	(28.5 mm)
Stroke	1.102"	(28 mm)

COMMON SPECIFICATIONS

Crankcase Capacity	40 oz.	(1.2 L)
Maximum Fluid Temperature	160°F	(71°C)
Max. Inlet Pressure	-8.5 to +40 PSI	(-0.6 to +2.8 BAR)
Inlet Ports (1)	1" NPT	(1" NPT)
Discharge Ports (3)	3/4" NPT	(3/4" NPT)
Shaft Diameter	0.984"	(25 mm)
Weight	34.6 lbs.	(15.7 kg)
Dimensions	16.65" x 11.42" x 6.25"	(423 x 290 x 159 mm)

HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE				MOTOR PULLEY SIZE	
	U.S. GPM	L/M	PSI 500	PSI 700	PSI 1000	PSI 1200	RPM	Motor Pulley O.D.
623	6.0	23	2.1	2.9	4.1	4.9	850	4.7
	5.0	19	1.7	2.4	3.4	4.1	709	4.0
	4.0	15	1.4	1.8	2.8	3.3	567	3.1
820	10.0	38	3.4	4.8	6.9	NA	940	5.3
	9.0	34	3.1	4.3	6.2	NA	846	4.8
	8.0	30	2.8	3.8	5.5	NA	752	4.3
1010	13.0	49	4.5	6.2	NA	NA	900	5.0
	10.0	38	3.4	4.8	NA	NA	750	4.3
	8.0	30	2.8	3.8	NA	NA	600	3.4

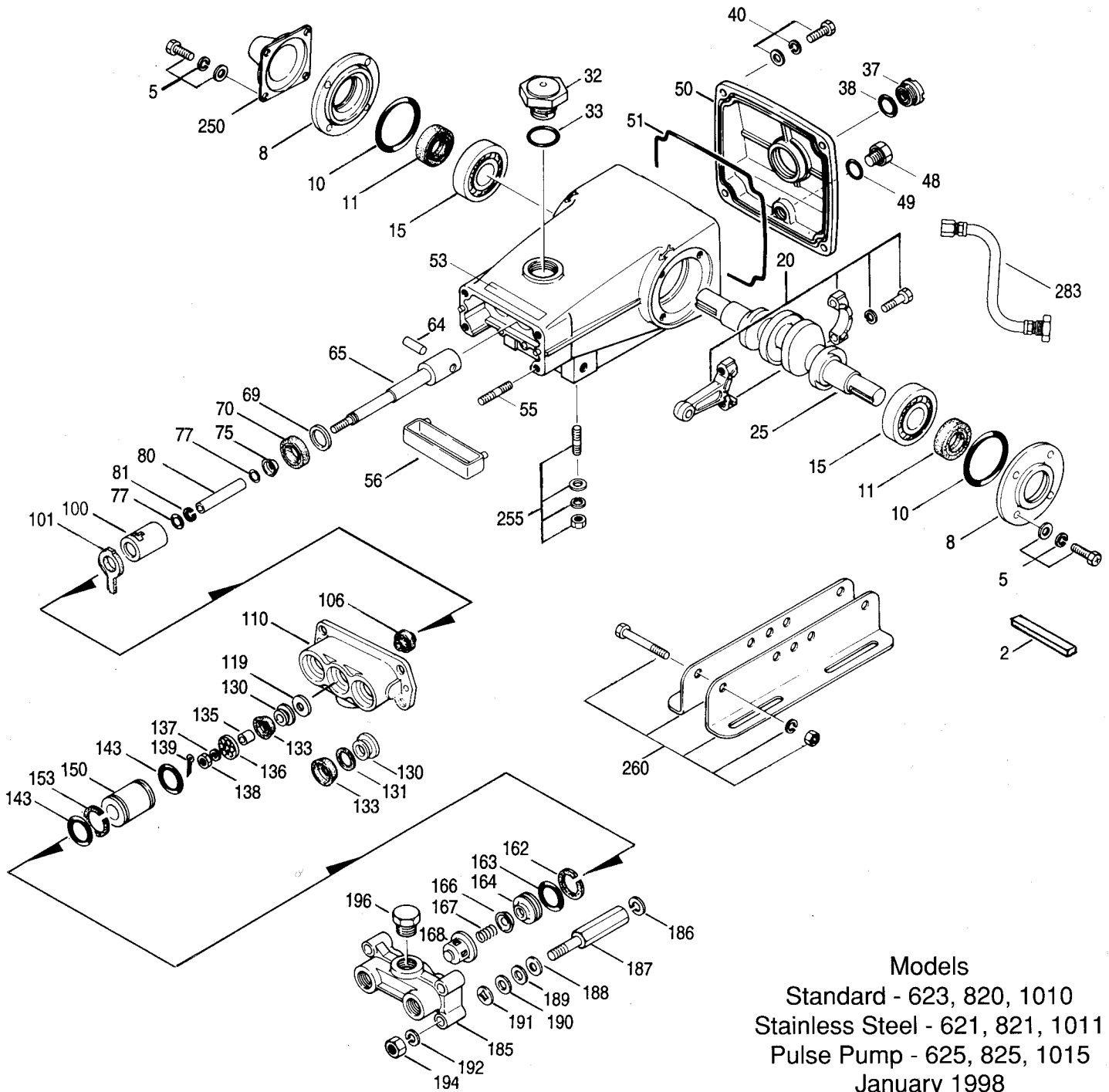
See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 03.

"Customer confidence is our greatest asset"

PARTS LIST

ITEM	PART NUMBER		DESCRIPTION		QTY
● 2	623 MATL	820 MATL	1010 MATL	Key (M7x7x40)	1 ●
5	50146 STL	50146 STL	50146 STL	Screw, Sems HHC (M6x16)	8
8	92519 STZP	92519 STZP	92519 STZP	Cover, Bearing	2
10	27331 AL	27331 AL	27331 AL	O-Ring, Bearing Cover	2
11	26965 NBR	26965 NBR	26965 NBR	Seal, Oil, Crankshaft	2
15	27330 NBR	27330 NBR	27330 NBR	Bearing, Ball	2
20	47080 STL	47080 STL	47080 STL	Rod, Connecting, Assy	3
25	27334 ZZ	27334 ZZ	27334 ZZ	Crankshaft, Dual End	1
32	27329 FCM	27329 FCM	27329 FCM	Cap, Oil Filler	1
33	43211	43211	43211	O-Ring, Oil Filler Cap	1
37	14177 NBR	14177 NBR	14177 NBR	Gauge, Oil, Bubble	1
38	43987 NBR	43987 NBR	43987 NBR	Gasket, Flat	1
40	44428 NBR	44428 NBR	44428 NBR	Screw, Sems HHC (M6x20)	4
48	92520 STZP	92520 STZP	92520 STZP	Plug, Drain (1/4"x11)	1
49	25625 BBCP	25625 BBCP	25625 BBCP	O-Ring, Drain Plug	1
50	23170 NBR	23170 NBR	23170 NBR	Cover, Crankcase (4 screw)	1
51	43491 AL	43491 AL	43491 AL	O-Ring, Crankcase Cover (4 screw)	1
53	43492 NBR	43492 NBR	43492 NBR	Crankcase (4 screw)	1
55	44641 AL	44641 AL	44641 AL	Stud (M10x45)	4
56	14050 STZP	14050 STZP	14050 STZP	Pan, Oil (use with items 100,101,106)	1
64	27911 POP	27911 POP	27911 POP	Pin, Rist	3
65	20251 S	20251 S	20251 S	Rod, Piston	3
69	27337 SZZ	27337 SZZ	27337 SZZ	Washer, Oil Seal	3
70	26952 S	26952 S	26952 S	Seal, Oil, Crankcase	3
75	27339 NBR	27339 NBR	27339 NBR	Slinger, Barrier	3
77	25327 S	25327 S	25327 S	O-Ring, Sleeve	6
80	25392 NBR	25392 NBR	25392 NBR	O-Ring, Sleeve	6
	28771 FPM	28771 FPM	28771 FPM	Sleeve	3
	27340 SCP	27340 SCP	27340 SCP	Sleeve	3
	28782 S	28782 S	28782 S	Back-up-Ring, Sleeve	3
81	29003 PTFE	29003 PTFE	29003 PTFE	Retainer, Seal	3
100	27341 PVDF	27341 PVDF	27341 PVDF	Wick-Long Tab (use with items 56,100,106)	3
101	27910	27910	27910	LPS, Prrrrm-A-Lube (greased)	3
106	30315 NBR	30315 NBR	30315 NBR	LPS, Prrrrm-A-Lube (greased)	3
	30325 FPM	30325 FPM	30325 FPM	Blue-Dot Seal (ungreased) (use with items 56,100,101)	3
	25153 NBR	25153 NBR	25153 NBR	Blue-Dot Seal (ungreased) (use with items 56,100,101)	3
	100015 FPM	100015 FPM	100015 FPM	Manifold, Inlet (623,820,1010)	1
110	27344 BBCP	27344 BBCP	27344 BBCP	Manifold, Inlet (621,821,1011)	1 ●
	30247 SS	30247 SS	30247 SS	Valve, Inlet	3
119	27347 S	27497 S	27813 S	Piston	3
130	30543 S	27820 S	27814 S	Ring, Bac-Cup	3
131	30544 PTFE	—	—	Cup, Piston	3
133	43172 FPM	27821 FPM	27815 FPM	Bac-Cup Assy (43172,30543,30544)	3
133	43474 FPM	—	—	Cup, Piston, Machined	3
133	30340 NBR	—	—	Cup, V-Hot (1000 PSI Max.on 623)	3
133	29089 NBR	29091 NBR	29092 NBR	Piston-Cup Assy	3
133	30145 TG	30333 TG	30189 TG	Spacer, Piston	3
135	27348 S	27499 S	27499 S	Retainer, Piston	3
136	27002 S	27500 S	20324 S	Washer, Conical	3
137	27006 S	27006 S	27006 S	Nut, Slotted (M6)	3
138	27000 S	27000 S	27000 S	Cotterpin (M1.6x10)	3
139	14158 S	14158 S	14158 S	O-Ring, Cylinder	6
143	26969 NBR	26969 NBR	26969 NBR	O-Ring, Cylinder	6
	28459 FPM	28459 FPM	28459 FPM	Cylinder (M50)	3
150	28342 SCP	28340 SCP	28341 SCP	Cylinder (M50)	3
	28776 S	28778 S	28780 S	Back-up-Ring, Cylinder	3
153	28204 PTFE	28204 PTFE	—	Back-up-Ring, Seat	3
162	43062 PTFE	43062 PTFE	43062 PTFE	O-Ring, Seat	3
163	26966 NBR	26966 NBR	26966 NBR	O-Ring, Seat	3
	28458 FPM	28458 FPM	28458 FPM	Seat, Q.V.	3
164	43428 S	43428 S	43428 S	Seat, F.V.	3
	43063 S	43063 S	43063 S	Valve, Q.V.	3
166	43721 S	43721 S	43721 S	Valve, F.V.	3
	20262 S	20262 S	20262 S	Spring, Q.V.	3
167	43251 S	43251 S	43251 S	Spring, F.V.	3
	20265 S	20265 S	20265 S	Retainer, Spring, Q.V.	3
168	43429 S	43429 S	43429 S	Retainer, Spring, F.V.	3
	43135 S	43135 S	43135 S	Manifold, Discharge (623,820,1010)	1
185	43046 BBCP	43046 BBCP	43046 BBCP	Manifold, Discharge (612,821,1011)	1
	30248 SS	30248 SS	30248 SS	Manifold, Pulse Pump (1000 PSI Max.) (625,825,1015)	1
	6410 BB	6410 BB	6410 BB	Washer, Connecting Rod (M10.5x1.5)	4/8
186	43641 STL	43641 STL	43641 STL	Stud, Hex, Manifold "B"	4
187	43047 STCP	43047 STCP	43047 STCP	Washer, Connecting Rod (M10.5x1.5)	4/8
188	43641 STL	43641 STL	43641 STL	Washer (M10x0.5)	4/8
189	26950 STZP	26950 STZP	26950 STZP	Washer (M10x0.3)	4/8
190	26951 STL	26951 STL	26951 STL	Washer, Shim (M10)	4
191	27357 STZP	27357 STZP	27357 STZP	Lockwasher, Split (M10)	4
192	12503 STZP	12503 STZP	12503 STZP	Nut, Hex (M10x1.5)	4
194	81048 STZP	81048 STZP	81048 STZP	Plug, Discharge Manifold (3/4" NPT)	1
196	20326 BBCP	20326 BBCP	20326 BBCP	Protector, Shaft	1
250	43139 STCP	43139 STCP	43139 STCP	Kit, Direct Mount	1
255	30264 STZP	30264 STZP	30264 STZP	Rail Assy, Angle - A (30635, 30921,30912,30903)	1
260	30613 STZP	30613 STZP	30613 STZP	Kit, Mounting (Incls: 30613,30206,30284,43139)	1
265	30653	30653	30653	Pulley (10" AB)	1 ●
● 270	30206 F	30206 F	30206 F	Hub, "H" (M25)	1 ●
● 274	30234 STL	30234 STL	30234 STL	Hub & Key Assy	1 ●
● 275	30284 STL	30284 STL	30284 STL	[See complete Drive Packages, Tech Bulletin 03]	1 ●
● 283	34334	34334	34334	Kit, Oil Drain	1 ●
295	6300 SS	6300 SS	6300 SS	Pump, Pulse (1 Qt.) 1000 PSI	1
295	6305 SS	6305 SS	6305 SS	Pump, Pulse (1 Gal.) 1000 PSI	1

EXPLODED VIEW



Models
 Standard - 623, 820, 1010
 Stainless Steel - 621, 821, 1011
 Pulse Pump - 625, 825, 1015
 January 1998

300	30220	NBR	30222	NBR	30224	NBR	Kit, Cup (Incls: 133,139,143,153,355 for 820 & 1010)	1
301	30822	NBR	—	—	—	—	Kit, Bac-Cup (Incls: 130,139,143,355)	1
302	30219	NBR	30221	NBR	30223	NBR	Kit, Piston (Incls: 119,130,133,135-139,143,153,355)	1
	30843	NBR	—	—	—	—	Kit, Bac-Cup Piston (Incls: 119,133,139,143,153,355)	1
305	30397	NBR	30397	NBR	30397	NBR	Kit, Sleeve and Prrrm-A-Lube Seal (Incls: 75,77,80,106,139)	1
	30227	NBR	30227	NBR	30227	NBR	Kit, Sleeve and Blue-Dot Seal (Incls: 77,80,101,106,139)	1
306	30305	NBR	30305	NBR	30305	NBR	Kit, Prrrm-A-Lube Seal (Incls: 106,139)	1
	30226	NBR	30226	NBR	30226	NBR	Kit, Blue-Dot Seal (Incls: 101,106,139)	1
310	30687	S	30687	S	30687	S	Kit, Valve, Q.V. (Incls: 143,153,162-168)	1
	30449	S	30449	S	30449	S	Kit, Valve, F.V. (Incls: 143,153,162-168)	1
355	22130	NY	16981	NY	15770	NY	Cup Inserter	1
352	44050	STZP	44050	STZP	44050	STZP	Oil Gauge Removal Tool	1
360	25082	STZP	25082	STZP	25082	STZP	T-Wrench (M10)	1
360	25083	STZP	25083	STZP	25083	STZP	T-Wrench (M17)	1

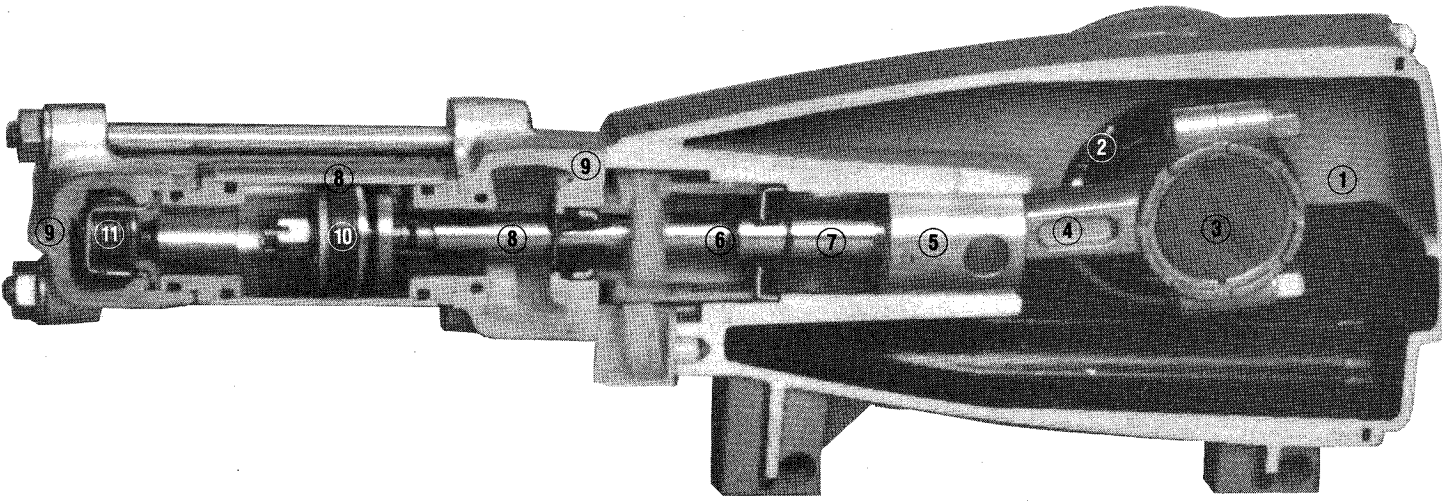
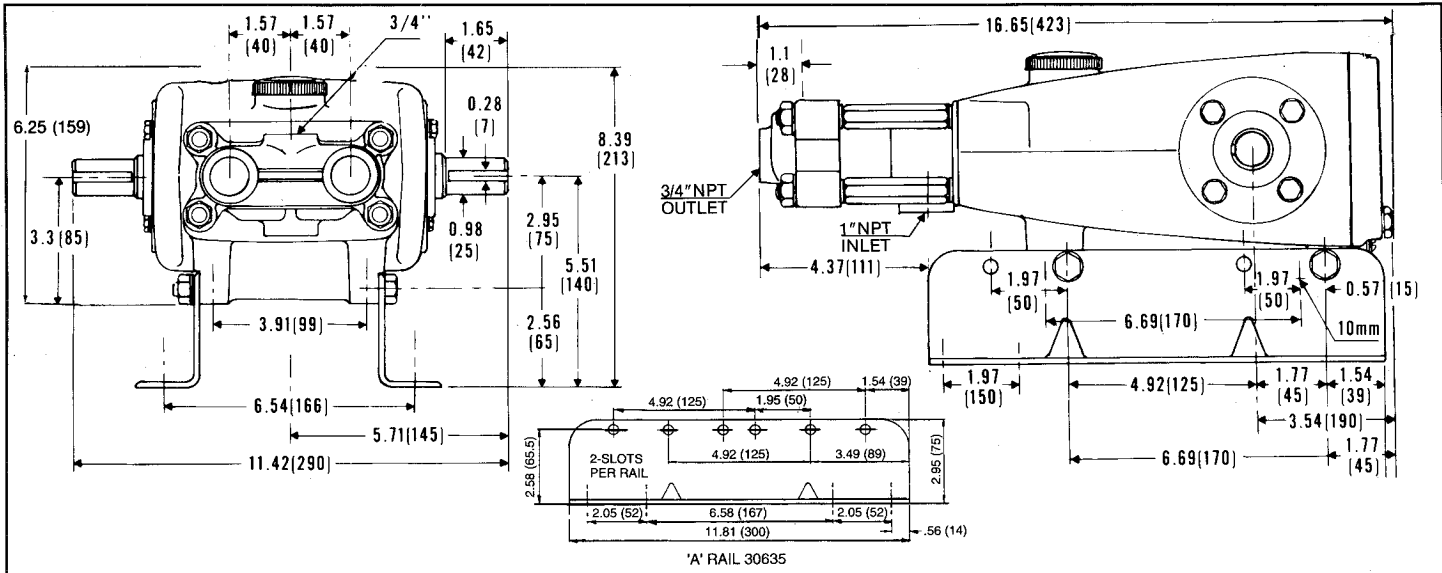
● Industrial discount. **Bold print part numbers are unique to a particular pump model. Italics are optional items.**

Note: When replacing Q.V. with F.V. add .001 to model number.

When replacing Prrrm-A-Lube Seals with Blue-Dot Seals, wick must be installed. **Add .0300** to model number when ordering

See Tech Bulletins 01, 03, 05, 16, 17, 20, 24, 26, 34, 36, 37, 38, 42 and 78 for additional information.

MATERIAL CODES (Not Part of Part Number): AL=Aluminum BB=Brass BBCP=Brass/Chrome Plated F=Cast Iron FCM=Forged Chrome-moly FPM=Fluorocarbon (Viton) NBR=Medium Nitrile (Buna-N) NY=Nylon POP=Polypropylene PTFE=Polytetrafluoroethylene (Teflon) PVDF=Fluoroplastic (High Strength) S=304SS SCP=304SS/Chrome Plated SS=316SS STL=Steel STZP=Steel/Zinc Plated SZZ=304SS/Zamak TG=PTFE Graphite Compound (GIT) ZZ=Zamak



- 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 **piston 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 The **patented stepped piston rod** with hard chrome plated stainless steel **sleeve** provides a durable wear surface and easy wet-end servicing.
- 8 The **cylinder and sleeve wear surfaces** are hard chrome plated 304 stainless steel for longer service life.
- 9 **Manifolds** are of high tensile strength chrome plated brass or 316 stainless steel for special corrosion resistance.
- 10 100% wet **cup/seal** design adds to service life by allowing pumped fluids to cool and lubricate the elastomers on both sides.
- 11 304 stainless steel **valves, seats, and springs** provide corrosion-resistance, positive seating and long life.

Products described hereon are covered by one or more of the following U.S. patents 3558244, 3652188, 3809508, 3920356, 3930756 and 5035580 Dec 1997 11743

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