

Model 820 shown

10 Frame Piston Pump

Standard Brass Models 623, 820, 1010

Stainless Steel Models 621, 821, 1011

Pulse Pump Manifold Models 625, 825, 1015

FEATURES

- Triplex Uniflow design provides continuous forward liquid flow for smooth operation.
- Wetted cups and floating pistons are lubricated and cooled by pumped liquid for long cup life.
- Mechanically actuated inlet valves give strong lift and easy prime.
- Oil bath crankcase assures optimum lubrication.
- 100% wetted seal design allows pumped liquid to cool and lubricate for longer life.

COMMON SPECIFICATIONS

Crankcase Capacity.....	40 oz.	(1.2 l)
Maximum Liquid Temperature.....	160°F	(71°C)
Above 130°F call CAT PUMPS for inlet conditions and elastomer recommendations.		
Inlet Pressure Range.....	-8.5 to +40 psi	(-0.6 to +2.8 bar)
Inlet Ports (1).....	1" NPTF	(1" NPTF)
Discharge Ports (3).....	3/4" NPTF	(3/4" NPTF)
Shaft Diameter.....	0.984"	(25 mm)
Weight.....	34.6 lbs.	(15.7 kg)
Dimensions.....	17.28 x 11.42 x 6.30"	(439 x 290 x 160 mm)

⚠ CAUTIONS AND WARNINGS

All High Pressure Systems require a primary pressure regulating device (i.e. regulator, unloader) and a secondary pressure relief device (i.e. pop-off valve, relief valve). Failure to install such relief devices could result in personal injury or damage to pump or property. CAT PUMPS does not assume any liability or responsibility for the operation of a customer's high pressure system.

Read all CAUTIONS and WARNINGS before commencing service or operation of any high pressure system. The CAUTIONS and WARNINGS are included in each service manual and with each Accessory Data sheet. CAUTIONS and WARNINGS can also be viewed online at www.catpumps.com/cautions-warnings or can be requested directly from CAT PUMPS.

WARRANTY

View the Limited Warranty on-line at www.catpumps.com/warranty.

SPECIFICATIONS

	U.S. Measure	Metric Measure
MODEL 623, 621, 625		
Flow.....	6.0 gpm	(23 lpm)
Pressure Range.....	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, 821, 825		
Flow.....	10 gpm	(38 lpm)
Pressure Range.....	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, 1011, 1015		
Flow.....	13 gpm	(49 lpm)
Pressure Range.....	100 to 700 psi	(7 to 50 bar)
RPM.....	900 rpm	(900 rpm)
Bore.....	1.122"	(28.5 mm)
Stroke.....	1.102"	(28 mm)

ELECTRIC HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE				MOTOR PULLEY SIZE	
	U.S. gpm	lpm	psi 500	psi 700	psi 1000	psi 1200	Using 1725 RPM Motor & Std. 10.0" Pulley	
			bar 35	bar 50	bar 70	bar 85	RPM	MOTOR Pulley O.D.
623,621,625	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, 821, 825	10.0	38	3.4	4.8	6.9	N/A	940	5.3
	9.0	34	3.1	4.3	6.2	N/A	846	4.8
	8.0	30	2.8	3.8	5.5	N/A	752	4.3
1010,1011,1015	13.0	49	4.5	6.2	N/A	N/A	900	5.0
	10.0	38	3.4	4.8	N/A	N/A	692	4.3
	8.0	30	2.8	3.8	N/A	N/A	554	3.4

DETERMINING THE PUMP R.P.M.	Rated gpm	=	"Desired" gpm
	Rated rpm	=	"Desired" rpm
DETERMINING THE REQUIRED H.P.	gpm x psi	=	Electric Brake H. P. Required
	1460	=	
DETERMINING MOTOR PULLEY SIZE	Motor Pulley O.D.	=	Pump Pulley O.D.
	Pump rpm	=	Motor rpm

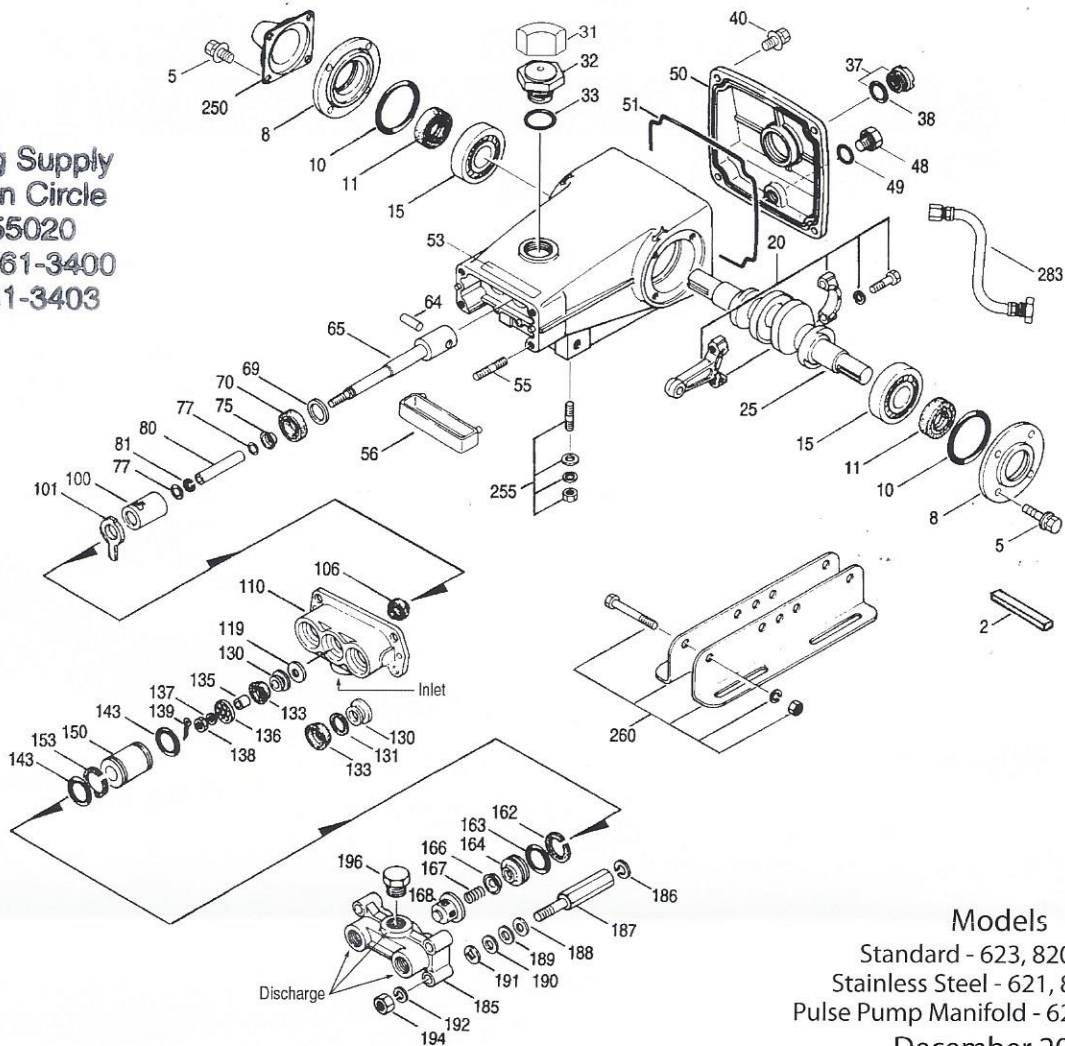
See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 003. Refer to pump **Service Manual** for repair procedure and additional technical information.

PARTS LIST

ITEM	PART NUMBER		PART NUMBER		PART NUMBER		DESCRIPTION	QTY
	623	820	1010	MATL	1011	MATL		
	621	821	1011		1011			
	625	825	1015	MATL	1015	MATL		
2	50146	STL	50146	STL	50146	STL	Key (M7x7x40)	1
5	92519	STZP	92519	STZP	92519	STZP	Screw, HHC Sems (M6x16)	8
	125824	STCP R	125824	STCP R	125824	STCP R	Screw, HHC Sems (M6x16)	8
8	27331	AL	27331	AL	27331	AL	Cover, Bearing	2
10	26965	NBR	26965	NBR	26965	NBR	O-Ring, Bearing Cover - 70D	2
11	27330	NBR	27330	NBR	27330	NBR	Seal, Oil, Crankshaft - 80D	2
15	47080	STL	47080	STL	47080	STL	Bearing, Ball	2
20	48733	TNM	48733	TNM	48733	TNM	Rod, Connecting, Assy [5/02]	3
25	27329	FCM	27329	FCM	27329	FCM	Crankshaft, Dual End	1
31	828710	—	828710	—	828710	—	Protector, Oil Cap w/Foam Gasket	1
32	43211	ABS	43211	ABS	43211	ABS	Cap, Oil Filler	1
33	14177	NBR	14177	NBR	14177	NBR	O-Ring, Oil Filler Cap - 70D	1
37	92241	—	92241	—	92241	—	Gauge, Oil Bubble w/Gasket - 80D	1
38	44428	NBR	44428	NBR	44428	NBR	Gasket, Flat, Oil Gauge - 80D	1
40	125824	STCP R	126541	STCP R	126541	STCP R	Screw, HHC Sems (M6x20)	4
48	25625	STCP	25625	STCP	25625	STCP	Plug, Drain (1/4"x19BSP)	1
49	23170	NBR	23170	NBR	23170	NBR	O-Ring, Drain Plug - 70D	1
50	49712	AL	49712	AL	49712	AL	Cover, Rear (Tech Bulletin 111)	1
51	14070	NBR	14070	NBR	14070	NBR	O-Ring, Cover (Tech Bulletin 111)	1
53	49710	AL	49710	AL	49710	AL	Crankcase w/Guide Pins (Tech Bulletin 111)	1
55	126545	STCP R	126545	STCP R	126545	STCP R	Stud (M10x45)	4
56	27911	POP	27911	POP	27911	POP	Pan, Oil (use with items 100,101,106)	1
64	20251	CM	20251	CM	20251	CM	Pin, Crosshead	3
65	27337	SZZ	27337	SZZ	27337	SZZ	Rod, Piston	3
69	126585	STCP R	126585	STCP R	126585	STCP R	Washer, Oil Seal	3
70	27339	NBR	27339	NBR	27339	NBR	Seal, Oil, Crankcase - 80D	3
75	25327	S	25327	S	25327	S	Slinger, Barrier	3
77	25392	NBR	25392	NBR	25392	NBR	O-Ring, Sleeve - 70D	6
	28771	FPM	28771	FPM	28771	FPM	O-Ring, Sleeve	6
80	27340	SCP	27340	SCP	27340	SCP	Sleeve	3
	28782	S	28782	S	28782	S	Sleeve (Unchromed)	3
81	29003	PTFE	29003	PTFE	29003	PTFE	Back-up-Ring, Sleeve	3
100	27341	PVDF	27341	PVDF	27341	PVDF	Retainer, Seal	3
101	27910	—	27910	—	27910	—	Wick, Long Tab (use with items 56,100,106)	3
106	30315	NBR	30315	NBR	30315	NBR	Seal, LPS, Prrrrrm-A-Lube (greased)	3
	30325	FPM	30325	FPM	30325	FPM	Seal, LPS, Prrrrrm-A-Lube (greased)	3
	25153	NBR	25153	NBR	25153	NBR	Seal, Blue-Dot (ungreased) (use with items 56,100,101)	3
	100015	FPM	100015	FPM	100015	FPM	Seal, Blue-Dot (ungreased) (use with items 56,100,101)	3
110	27344	BBCP	27344	BBCP	27344	BBCP	Manifold, Inlet (623, 820, 1010)	1
	30247	SS	30247	SS	30247	SS	Manifold, Inlet (621, 821, 1011)	1
119	27347	S	27497	S	27813	S	Valve, Inlet	3
130	30543	S	27820	S	27814	S	Piston	3
131	30544	PTFE	—	—	—	—	Ring, Bac-Cup	3
133	43172	FPM	27821	FPM	27815	FPM	Cup, Piston	3
133	43474	FPM	—	—	—	—	Bac-Cup Assy (43172,30543,30544) (Tech Bulletin 016)	3
133	30340	NBR	—	—	—	—	Cup, Piston, Machined	3
133	29089	SNG	29091	SNG	29092	SNG	Cup, V-Hot (1000 PSI Max.)	3
133	76515	ST4	76333	ST4	76189	ST4	Piston-Cup Assy (1000 PSI Max.)	3
135	27348	S	27499	S	27499	S	Spacer, Piston	3
136	27002	S	27500	S	20324	S	Retainer, Piston	3
137	27006	S	27006	S	27006	S	Washer, Conical (M6)	3
138	27000	S	27000	S	27000	S	Nut, Slotted (M6)	3
139	14158	S	14158	S	14158	S	Cotterpin (M1.6x10)	3
143	26969	NBR	26969	NBR	26969	NBR	O-Ring, Cylinder - 70D	6
	28459	FPM	28459	FPM	28459	FPM	O-Ring, Cylinder	6
150	28342	SCP	28340	SCP	28341	SCP	Cylinder (M50)	3
	28776	S	28778	S	28780	S	Cylinder (M50) (Unchromed)	3
153	28204	PTFE	28204	PTFE	—	—	Back-up-Ring, Cylinder	3
162	43062	PTFE	43062	PTFE	43062	PTFE	Back-up-Ring, Seat	3
163	26966	NBR	26966	NBR	26966	NBR	O-Ring, Seat - 70D	3
	28458	FPM	28458	FPM	28458	FPM	O-Ring, Seat - 70D	3
164	43428	S	43428	S	43428	S	Seat, Quiet Valve	3
	43063	S	43063	S	43063	S	Seat, Flat Valve	3
166	43721	S	43721	S	43721	S	Valve, Quiet Valve	3
	20262	S	20262	S	20262	S	Valve, Flat Valve	3
167	43251	S	43251	S	43251	S	Spring, Quiet Valve	3
	20265	S	20265	S	20265	S	Spring, Flat Valve	3
168	43429	S	43429	S	43429	S	Retainer, Spring, Quiet Valve	3
	43135	S	43135	S	43135	S	Retainer, Spring, Flat Valve	3
185	43046	BBCP	43046	BBCP	43046	BBCP	Manifold, Discharge (623, 820, 1010)	1
	30248	SS	30248	SS	30248	SS	Manifold, Discharge (621, 821, 1011)	1
	6410	BB	6410	BB	6410	BB	Manifold, Pulse Pump (1000 PSI Max.) (625,825,1015)	1
186	126593	STCP R	126593	STCP R	126593	STCP R	Washer, Shim (M10.5x1.5)	4/8
187	43047	STCP	43047	STCP	43047	STCP	Stud, Hex, Manifold "B"	4
188	126582	STCP R	126582	STCP R	126582	STCP R	Washer, Shim (M10.5x1.0)	4/8
189	126583	STCP R	126583	STCP R	126583	STCP R	Washer, Shim (M10x0.5)	4/8
190	126584	STCP R	126584	STCP R	126584	STCP R	Washer, Shim (M10x0.3)	4/8
191	27357	STZP	27357	STZP	27357	STZP	Lockwasher (M10)	4
192	126231	STCP R	126231	STCP R	126231	STCP R	Lockwasher (M10)	4
194	126522	STCP R	126522	STCP R	126522	STCP R	Nut, Hex (M10x1.5)	4
196	20326	BBCP	20326	BBCP	20326	BBCP	Plug, Discharge Manifold (3/4" NPT)	1
250	43139	STCP	43139	STCP	43139	STCP	Protector, Shaft	1

EXPLODED VIEW

N.D.S. Drilling Supply
26041 Newton Circle
Elko, MN 55020
Phone #952-461-3400
Fax # 952-461-3403



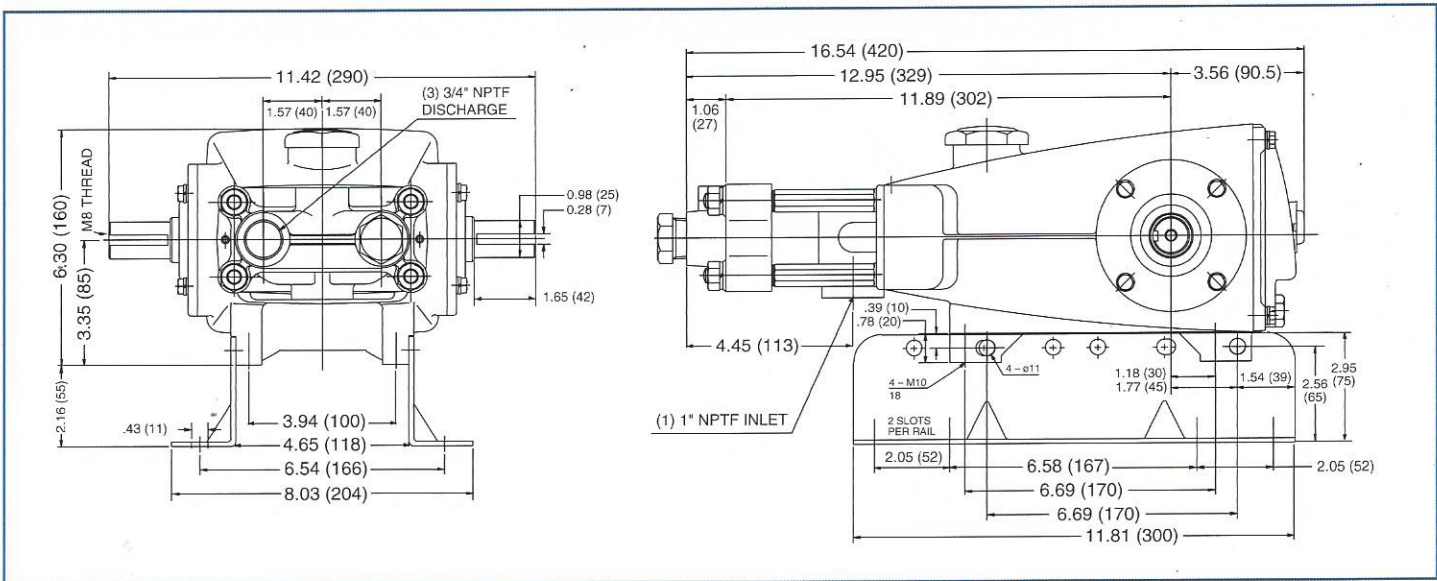
Models
 Standard - 623, 820, 1010
 Stainless Steel - 621, 821, 1011
 Pulse Pump Manifold - 625, 825, 1015
 December 2012

	623	820	1010	MATL		
255	30264	30264	30264	STZP	Kit, Direct Mount	1
260	30613	30613	30613	STZP	Mount, Rail, Assy	1
265	30653	30653	30653	—	Kit, Mounting (Incls: 30613,30206,30284,43139)	1
270	30206	30206	30206	F	Pulley (10") [See Drive Packages, Tech Bulletin 003]	1
274	30234	30234	30234	STL	Hub, "H" M25 (Keyway M7) [See Drive Packages, Tech Bulletin 003]	1
275	30284	30284	30284	STL	Hub & Key Assy [See Drive Packages, Tech Bulletin 003]	1
283	34334	34334	34334	—	Kit, Oil Drain	1
295	6300	6300	6300	BBSS	Pump, Pulse (1 Qt.) 1000 PSI (See individual data sheet)	1
	6305	6305	6305	BBSS	Pump, Pulse (1 Gal.) 1000 PSI (See individual data sheet)	1
300	30220	30222	30224	NBR	Kit, Cup (Incls: 133,139,143,153) (355 for 820 & 1010)	1
301	30822	—	—	NBR	Kit, Bac-Cup (Incls: 133,139,143,355)	1
302	30219	30221	30223	NBR	Kit, Piston (Incls: 119,130,133,135-139,143,153 (355 for 820 & 1010))	1
	30843	—	—	NBR	Kit, Bac-Cup Piston (Incls: 119,133,139,143,153,355)	1
304	76238	30437	30300	NBR	Kit, Hot Cup (Incls: 133, 139, 143, 153)	1
305	30397	30397	30397	NBR	Kit, Sleeve and Prrrrm-A-Lube Seal (Incls: 75,77,80,106,139)	1
	30227	30227	30227	NBR	Kit, Sleeve and Blue-Dot Seal (Incls: 75,77,80,101,106,139)	1
306	30305	30305	30305	NBR	Kit, Prrrrm-A-Lube Seal (Incls: 106,139)	1
	30226	30226	30226	NBR	Kit, Blue-Dot Seal (Incls: 101,106,139)	1
310	30687	30687	30687	NBR	Kit, Valve, Quiet Valve (Incls: 143,153,162-168)	1
	30449	30449	30449	NBR	Kit, Valve, Flat Valve (Incls: 143,153,162-168)	1
355	22130	16981	15770	NY	Insert, Cup	1
352	44050	44050	44050	STZP	Tool, Oil Gauge Removal	1
360	25082	25082	25082	STZP	T-Wrench (M10)	1
	25083	25083	25083	STZP	T-Wrench (M17)	1
—	6107	6107	6107	—	Oil, Bottle (21 oz.) ISO 68 Hydraulic	2
					(Fill to specified crankcase capacity prior to start-up)	

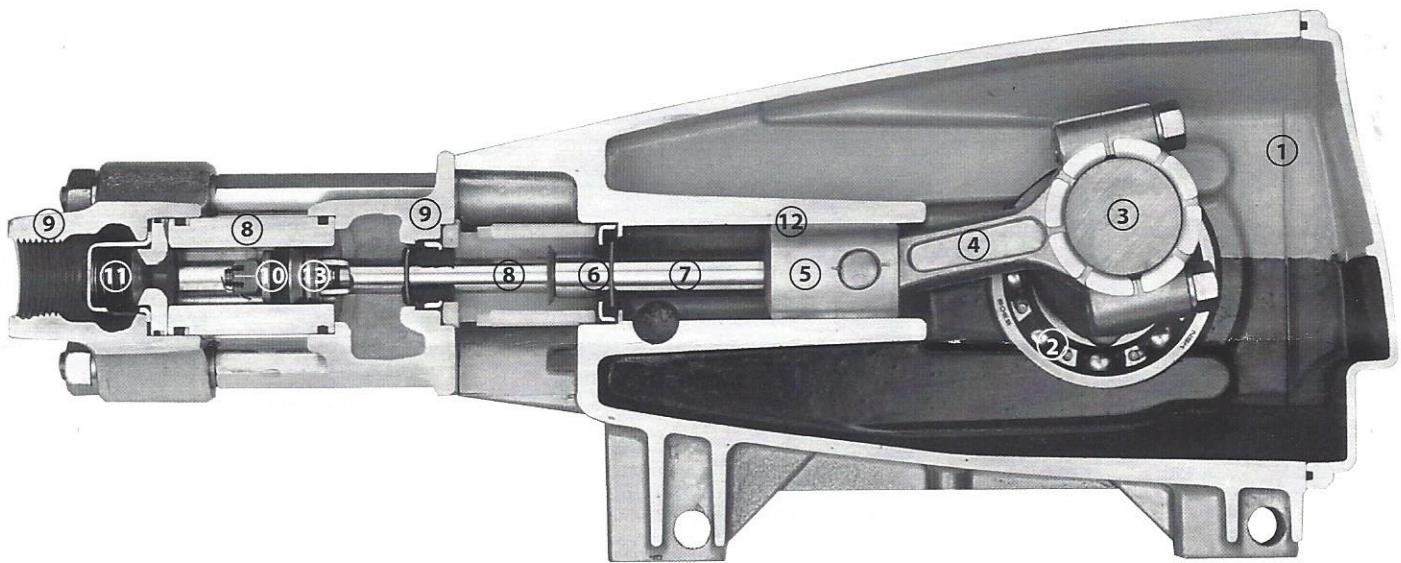
Bold print part numbers are unique to a particular pump model. Italics are optional items. [] Date of latest production change. R Components comply with RoHS Directive. See Tech Bulletins 001, 002, 003, 005, 016, 017, 020, 024, 026, 034, 036, 037, 038, 042, 074, 077, 083 and 111 for additional information.

When replacing Prrrrm-A-Lube Seals with Blue-Dot Seals, wick must be installed.

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum BB=Brass BCCP=Brass/Chrome Plated CM=Chrome-Moly F=Cast Iron FCM=Forged Chrome-moly FPM=Fluorocarbon NBR=Medium Nitrile (Buna-N) NY=Nylon POP=Polypropylene PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS SCP=304SS/Chrome Plated SNG=Special Blend (Buna) SS=316SS STL=Steel STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated SZZ=304SS/Zamak ST4=Special PTFE 4 TNM=Special High Strength



Models 623, 621, 625, 820, 821, 825, 1010, 1011, 1015



- 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 TNM **connecting rods** for superior tensile strength and 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 liquids 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 liquids to cool and lubricate the elastomers on both sides.
- 11 304 stainless steel **valves, seats, and springs** provide corrosion-resistance, ultimate seating and extended life.
- 12 **Crossheads** are 360° supported for uncompromising alignment.
- 13 Mechanically actuated **inlet valves** provide strong lift and easy prime.



N.D.S. Drilling Supply
 26041 Newton Circle
 Elko, MN 55020
 Phone #952-461-3400
 Fax # 952-461-3403