

25 Frame Piston Pump

Standard Brass Models 1020, 2020, 1520, 2520

Stainless Steel Models 1021, 2021, 1521, 2521

Hi-Temp Model 2520C

FEATURES

Superior Design

- 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.
- 304 stainless steel flat valve design offers positive seating and greater suction capabilities.
- Oil bath crankcase assures optimum lubrication.

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.
- Special high strength TNM connecting rods offer 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 and 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 convenient kits.

⚠ WARNING

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

SPECIFICATIONS

	U.S. Measure	Metric Measure
MODEL 1020, 1021		
Flow	10 GPM	(38 L/M)
Pressure Range	100 to 1200 PSI	(7 to 85 BAR)
RPM	720 RPM	(720 RPM)
Bore984"	(25 mm)

MODEL 2020, 2021		
Flow	20 GPM	(76 L/M)
Pressure Range	100 to 800 PSI	(7 to 55 BAR)
RPM	870 RPM	(870 RPM)
Bore	1.260"	(32 mm)

MODEL 1520, 1521		
Flow	15 GPM	(57 L/M)
Pressure Range	100 to 1000 PSI	(7 to 70 BAR)
RPM	830 RPM	(830 RPM)
Bore	1.122"	(28.5 mm)

MODEL 2520, 2521 and 2520C Hi-Temp		
Flow	25 GPM	(95 L/M)
Pressure Range	100 to 800 PSI	(7 to 55 BAR)
RPM	772 RPM	(772 RPM)
Bore	1.490"	(38 mm)
Inlet Pressure Range	Flooded to +40 PSI	(Flooded to +2.8 BAR)
Maximum Liquid Temperature	210°F	(98°C)
Cooling Ports (2)	1/4" NPTF	(1/4" NPTF)
Dimensions	21.42 x 15.04 x 7.8"	(544 x 382 x 198 mm)

COMMON SPECIFICATIONS

Stroke	1.417"	(36 mm)
Inlet Pressure Range	-8.5 to +40 PSI	(-0.6 to +2.8 BAR)
Crankcase Capacity	84 oz.	(2.5 L)
Maximum Liquid Temperature	160°F	(71°C)
Above 130°F call CAT PUMPS for inlet conditions and elastomer recommendations.		
Inlet Ports (1)	1-1/4" NPTF	(1-1/4" NPTF)
Discharge Ports (3)	1" NPTF	(1" NPTF)
Pulley Mounting	Either side	(Either side)
Shaft Diameters	1.181"	(30 mm)
Weight	69.3 lbs.	(31.5 kg)
Dimensions	21.62 x 15.04 x 7.8"	(549.15 x 382 x 198 mm)

ELECTRIC HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE			MOTOR PULLEY SIZE	
	U.S. GPM	L/M	PSI 800	PSI 1000	PSI 1200	Using 1725 RPM Motor & Std. 9.75" Pulley O.D.	
			BAR 55	BAR 70	BAR 85	RPM	Pulley O.D.
1020, 1021	10	38	5.5	6.9	8.2	720	4.1
2020, 2021	20	76	11.0	13.7	N/A	870	4.9
1520, 1521	15	57	8.2	10.3	N/A	830	4.7
	12	45	6.6	8.2	N/A	660	3.8
	10	38	5.5	6.9	N/A	550	3.1
2520, 2521 and 2520C	25	95	13.7	N/A	N/A	772	4.4
	20	76	11.0	N/A	N/A	620	3.5
	15	57	8.2	N/A	N/A	465	2.7

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. $\frac{\text{GPM x PSI}}{1460}$ = Electric Brake H. P. Required

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

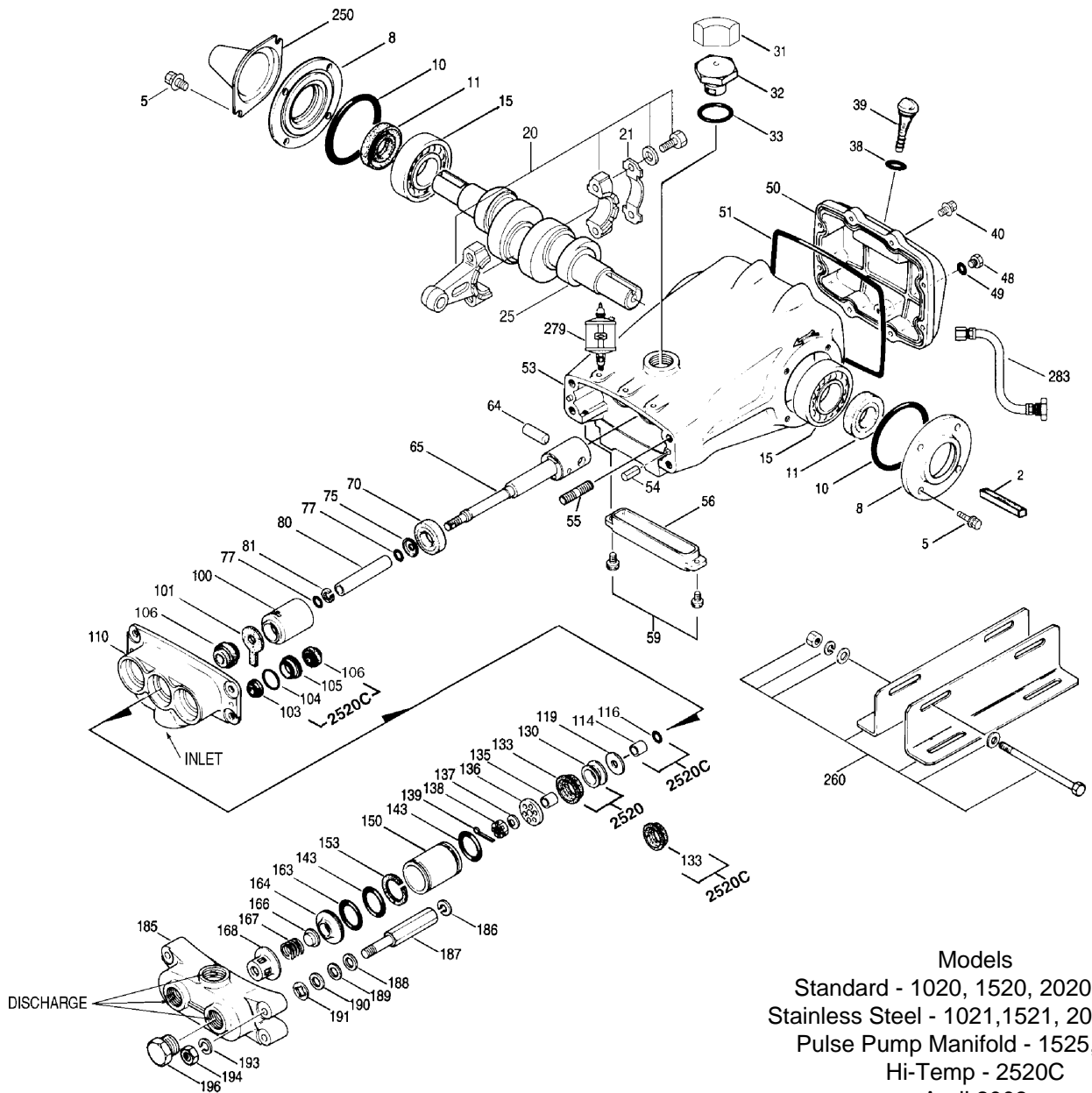
See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 003.
Refer to pump **Service Manual** for repair procedure, additional technical information and **pump warranty**.

"Customer confidence is our greatest asset"

PARTS LIST

ITEM	PART NUMBER								DESCRIPTION	QTY		
	1020	MATL	2020	MATL	1520	MATL	2520	MATL	2520C	MATL		
2	990036	STL	990036	STL	990036	STL	990036	STL	990036	STL	Key (M8x7x40) [3/00]	1
5	92508	STZP	92508	STZP	92508	STZP	92508	STZP	92508	STZP	Screw, HHC, Sems (M8x25)	8
	126544	STCP R	126544	STCP R	126544	STCP R	126544	STCP R	126544	STCP R	Screw, HHC, Sems (M8x25)	8
8	27773	AL	27773	AL	27773	AL	27773	AL	27773	AL	Cover, Bearing	2
10	27772	NBR	27772	NBR	27772	NBR	27772	NBR	27772	NBR	O-Ring, Bearing Cover - 70D	2
11	27771	NBR	27771	NBR	27771	NBR	27771	NBR	27771	NBR	Seal, Oil, Crankshaft - 70D	2
15	26512	STL R	26512	STL R	26512	STL R	26512	STL R	26512	STL R	Bearing, Ball	2
20	48613	TNM	48613	TNM	48613	TNM	48613	TNM	48613	TNM	Rod, Connecting	3
21	126562	STCP R	126562	STCP R	126562	STCP R	126562	STCP R	126562	STCP R	Washer, Locking	3
25	48704	FCM	48704	FCM	48704	FCM	48704	FCM	48704	FCM	Crankshaft [3/00]	1
31	828710	—	828710	—	828710	—	828710	—	828710	—	Protector, Oil Cap w/Foam Gasket	1
32	43211	ABS	43211	ABS	43211	ABS	43211	ABS	43211	ABS	Cap, Oil Filler	1
33	14177	NBR	14177	NBR	14177	NBR	14177	NBR	14177	NBR	O-Ring, Oil Filler Cap - 70D	1
38	11338	NBR	11338	NBR	11338	NBR	11338	NBR	11338	NBR	O-Ring, Dipstick - 70D	1
39	27769	ABS	27769	ABS	27769	ABS	27769	ABS	27769	ABS	Dipstick	1
40	92508	STZP	92508	STZP	92508	STZP	92508	STZP	92508	STZP	Screw, HHC, Sems (M8x25)	8
	126544	STCP R	126544	STCP R	126544	STCP R	126544	STCP R	126544	STCP R	Screw, HHC, Sems (M8x25)	8
48	25625	STCP	25625	STCP	25625	STCP	25625	STCP	25625	STCP	Plug, Drain (1/4"x19BSP)	1
49	23170	NBR	23170	NBR	23170	NBR	23170	NBR	23170	NBR	O-Ring, Drain Plug - 70D	1
50	27768	AL	27768	AL	27768	AL	27768	AL	27768	AL	Cover, Rear	1
51	27767	NBR	27767	NBR	27767	NBR	27767	NBR	27767	NBR	O-Ring, Rear Cover - 70D	1
53	27762	AL	27762	AL	27762	AL	27762	AL	27762	AL	Crankcase, w/Guide Pins	1
54	27488	S	27488	S	27488	S	27488	S	27488	S	Pin, Guide	2
55	27764	STZP	27764	STZP	27764	STZP	27764	STZP	27764	STZP	Stud (M12x53)	4
	126547	STCP R	126547	STCP R	126547	STCP R	126547	STCP R	126547	STCP R	Stud (M12x53)	4
56	27790	POP	27790	POP	27790	POP	27790	POP	27790	POP	Pan, Oil	1
59	92519	STZP	92519	STZP	92519	STZP	92519	STZP	92519	STZP	Screw, HHC, Sems (M6x16)	2
	125824	STCP R	125824	STCP R	125824	STCP R	125824	STCP R	125824	STCP R	Screw, HHC, Sems (M6x16)	2
64	27784	CM	27784	CM	27784	CM	27784	CM	27784	CM	Pin, Crosshead	3
65	29229	SZZ	29229	SZZ	29229	SZZ	29229	SZZ	43266	SZZ	Rod, Piston (M8)	3
70	27785	NBR	27785	NBR	27785	NBR	27785	NBR	27785	NBR	Seal, Oil, Crankcase - 70D	3
75	27786	S	27786	S	27786	S	27786	S	27786	S	Slinger, Barrier	3
77	26531	NBR	26531	NBR	26531	NBR	26531	NBR	14198	FPM	O-Ring, Sleeve	6
	14198	FPM	14198	FPM	14198	FPM	14198	FPM	—	—	O-Ring, Sleeve	6
80	43122	SCP	43122	SCP	43122	SCP	43122	SCP	43122	SCP	Sleeve (M16)	3
	43123	S	43123	S	43123	S	43123	S	43123	S	Sleeve (M16) - Unchromed	3
81	29246	PTFE	29246	PTFE	29246	PTFE	29246	PTFE	29246	PTFE	Back-up-Ring, Sleeve	3
100	27788	PVDF	27788	PVDF	27788	PVDF	27788	PVDF	27788	PVDF	Retainer, Seal	3
101	43126	—	43126	—	43126	—	43126	—	43126	—	Wick, Long Tab (M16)	3
103	—	—	—	—	—	—	—	—	43269	FPM	Seal w/Lip	3
104	—	—	—	—	—	—	—	—	14178	NBR	O-Ring, Seal Adapter	3
105	—	—	—	—	—	—	—	—	43268	S	Adapter, LPS	3
106	43124	NBR	43124	NBR	43124	NBR	43124	NBR	43272	FPM	Seal (M16)/Seal w/Grease Pocket	3
	43125	FPM	43125	FPM	43125	FPM	43125	FPM	—	—	Seal (M16)	3
110	27791	BBCP	27791	BBCP	27791	BBCP	27791	BBCP	43270	BBCP	Manifold, Inlet	1
	28595	SS	28595	SS	28595	SS	28595	SS	—	—	Manifold, Inlet	1
114	—	—	—	—	—	—	—	—	46148	S	Spacer, Inlet Valve	3
116	—	—	—	—	—	—	—	—	14198	FPM	O-Ring, Spacer	3
119	29242	S	29234	S	29232	S	29240	S	29240	S	Valve, Inlet (M8)	3
130	27820	S	27945	S	27814	S	27840	S	—	—	Piston	3
133	27821	FPM	27946	FPM	27815	FPM	28409	FPM	—	—	Cup, Piston	3
	—	—	—	—	30189	TG	30498	TR	30498	TR	Cup-Piston, Assy (1000 PSI MAX)	3
	29091	SNG	29093	SNG	29092	SNG	29094	SNG	—	—	Cup, V-Hot	3
135	29231	S	29231	S	29231	S	29231	S	29231	S	Spacer, Piston (M8)	3
136	29241	S	29235	S	29233	S	29239	S	29239	S	Retainer, Piston (M8)	3
137	27871	S	27871	S	27871	S	27871	S	27871	S	Washer, Conical (M8)	3
138	27510	S	27510	S	27510	S	27510	S	27510	S	Nut, Slotted (M8)	3
139	29589	S	29589	S	29589	S	29589	S	29589	S	Cotterpin (M2x18)	3
143	25495	NBR	25495	NBR	25495	NBR	25495	NBR	11748	FPM	O-Ring, Cylinder - 70D	6
	11748	FPM	11748	FPM	11748	FPM	11748	FPM	—	—	O-Ring, Cylinder - 70D	6
150	27823	SCP	28533	SCP	27817	SCP	27844	SCP	27844	SCP	Cylinder, (M65)	3
	29046	S	29048	S	29047	S	29049	S	29049	S	Cylinder, (M65) - Unchromed	3
153	48371	D	48371	D	48371	D	—	—	—	—	Back-up-Ring, Cylinder	3
163	28395	NBR	28395	NBR	28395	NBR	28395	NBR	28769	FPM	O-Ring, Valve Seat	3
	28769	FPM	28769	FPM	28769	FPM	28769	FPM	—	—	O-Ring, Valve Seat	3
164	28396	S	28396	S	28396	S	28396	S	28396	S	Seat	3
166	43133	S	43133	S	43133	S	43133	S	43133	S	Valve	3
167	26548	S	26548	S	26548	S	26548	S	26548	S	Spring	3
168	43134	S	43134	S	43134	S	43134	S	43134	S	Retainer, Spring	3
185	27805	BBCP	27805	BBCP	27805	BBCP	27805	BBCP	27805	BBCP	Manifold, Discharge	1
	28594	SS	28594	SS	28594	SS	28594	SS	—	—	Manifold, Discharge	1
	—	—	—	—	6425	BB	6425	BB	—	—	Manifold, Pulse Pump, Ported	1
186	126570	STCP R	126570	STCP R	126570	STCP R	126570	STCP R	126570	STCP R	Lockwasher (1/2")	4
187	27803	STCP	27803	STCP	27803	STCP	27803	STCP	43277	STCP	Bolt, Cylinder	4
188	126586	STCP R	126586	STCP R	126586	STCP R	126586	STCP R	126586	STCP R	Shim, Washer (M12x0.3)	4/8
189	126580	STCP R	126580	STCP R	126580	STCP R	126580	STCP R	126580	STCP R	Shim, Washer (12x0.5)	4/8
190	126581	STCP R	126581	STCP R	126581	STCP R	126581	STCP R	126581	STCP R	Shim, Washer (12x1.0)	4/8
191	27933	STZP	27933	STZP	27933	STZP	27933	STZP	27933	STZP	Lockwasher (M12)	4
193	126570	STCP R	126570	STCP R	126570	STCP R	126570	STCP R	126570	STCP R	Lockwasher (1/2")	4
194	81060	STZP	81060	STZP	81060	STZP	81060	STZP	81060	STZP	Nut, Hex (M12)	4
	126523	STCP R	126523	STCP R	126523	STCP R	126523	STCP R	126523	STCP R	Nut, Hex (M12)	4
196	27807	BBCP	27807	BBCP	27807	BBCP	27807	BBCP	27807	BBCP	Plug (1"NPTM)	1

EXPLODED VIEW

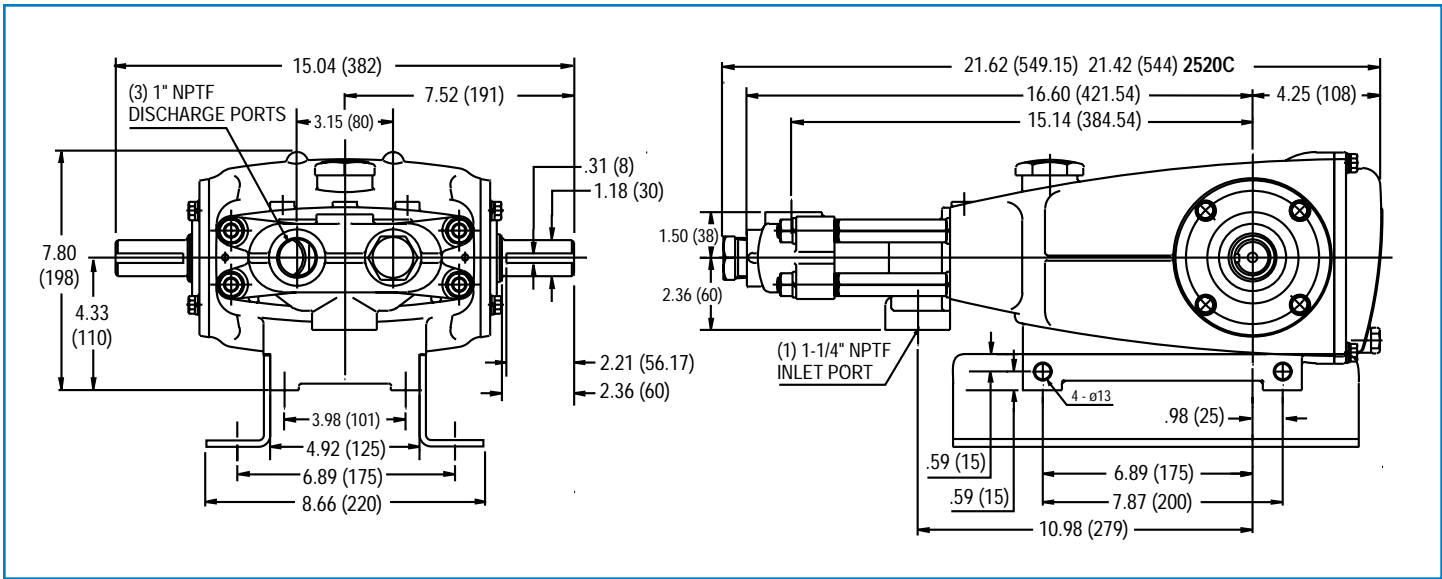


Models
 Standard - 1020, 1520, 2020, 2520
 Stainless Steel - 1021, 1521, 2021, 2521
 Pulse Pump Manifold - 1525, 2525
 Hi-Temp - 2520C
 April 2008

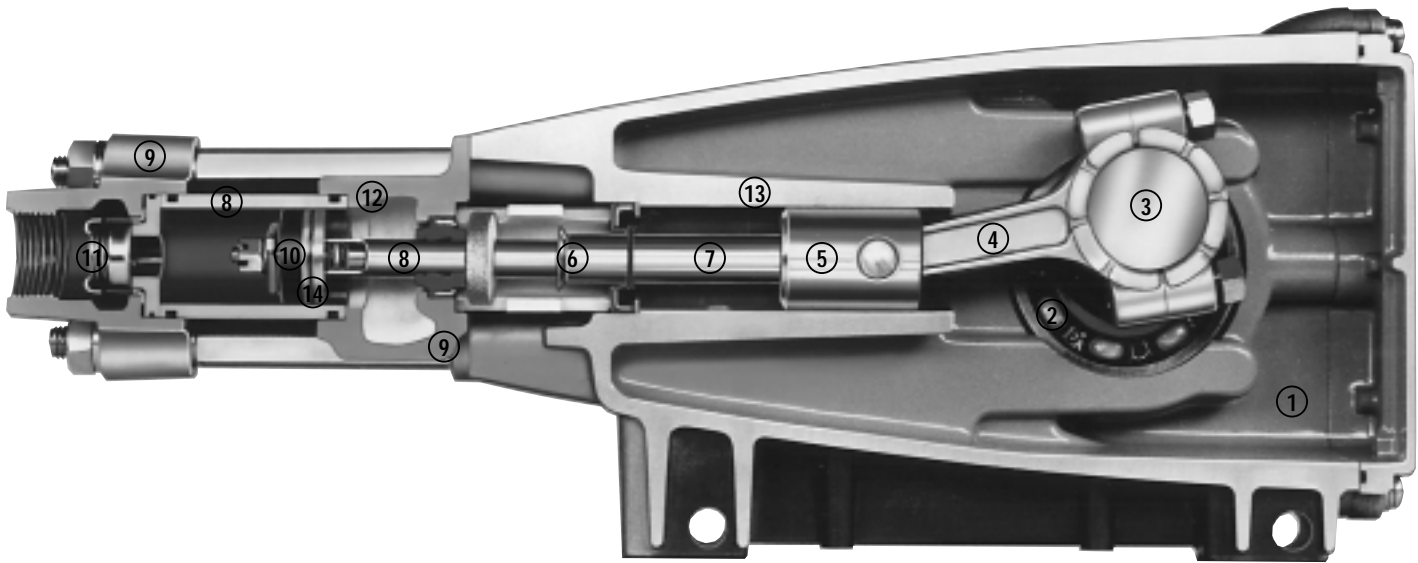
	1020 MATL	2020 MATL	1520 MATL	2520 MATL	2520C MATL		
250	26516 <i>STCP</i>	26516 <i>STCP</i>	26516 <i>STCP</i>	26516 <i>STCP</i>	26516 <i>STCP</i>	Protector, Shaft	1
260	30614 <i>STZP</i>	30614 <i>STZP</i>	30614 <i>STZP</i>	30614 <i>STZP</i>	30614 <i>STZP</i>	Mount, Rail, Assy	1
269	30206 <i>F</i>	30206 <i>F</i>	30206 <i>F</i>	30206 <i>F</i>	30206 <i>F</i>	Pulley (10") (See Drive Packages, Tech Bulletin 003)	1
275	30059 <i>STL</i>	30059 <i>STL</i>	30059 <i>STL</i>	30059 <i>STL</i>	30059 <i>STL</i>	Hub, "H" M30 (M8 Keyway) [3/00]	1
						(See Drive Packages, Tech Bulletin 003)	
279	30278 <i>STZP</i>	30278 <i>STZP</i>	30278 <i>STZP</i>	30278 <i>STZP</i>	30278 <i>STZP</i>	Oiler (1 oz.)	3
281	30967 —	30967 —	30967 —	30967 —	30967 —	Oiler, Glass	3
282	10069 <i>NBR</i>	10069 <i>NBR</i>	10069 <i>NBR</i>	10069 <i>NBR</i>	10069 <i>NBR</i>	Gasket, Oiler	1
283	34334 —	34334 —	34334 —	34334 —	34334 —	Kit, Oil Drain	1
295	—	—	6300 <i>BBSS</i>	6300 <i>BBSS</i>	—	Pump, Pulse (1 qt.) 1000 PSI	1
295	—	—	6305 <i>BBSS</i>	6305 <i>BBSS</i>	—	Pump, Pulse (1 gal.) 1000 PSI	1
300	—	—	30254 <i>FPM</i>	30256 <i>FPM</i>	—	Kit, Cup (Incls: 133,139,143,153,355)	1
302	—	—	30839 <i>NBR</i>	30252 <i>NBR</i>	—	Kit, Piston (Incls: 119-143,153,355)	1
305	30819 <i>NBR</i>	30819 <i>NBR</i>	30819 <i>NBR</i>	30819 <i>NBR</i>	—	Kit, Sleeve & Seal (Incls: 75,77,80,101,106,139)	1
306	30482 <i>NBR</i>	30482 <i>NBR</i>	30482 <i>NBR</i>	30482 <i>NBR</i>	—	Kit, Seal (Incls: 101,106,139)	1
310	30767 <i>NBR</i>	30767 <i>NBR</i>	30767 <i>NBR</i>	30767 <i>NBR</i>	30767 <i>NBR</i>	Kit, Valve (Incls: 143,153,163,164,166,167,168)	1
355	16981 <i>NY</i>	27964 <i>NY</i>	15770 <i>NY</i>	27853 <i>NY</i>	—	Insertor, Cup	1
—	6100 —	6100 —	6100 —	6100 —	6100 —	Oil, Case (12 Bottles) ISO 68 Multi-viscosity Hydraulic (Fill to specified crankcase capacity prior to start-up)	1

Bold 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 002, 003, 008, 009, 017, 021, 024, 034, 036, 063, 064, 074, 077, 083 and 085 for additional information.
 MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum BB=Brass BCCP=Brass/Chrome Plated CM=Chrome-Moly D=Acetal 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 STCP=Steel/Chrome Plated STL=Steel
 STZP=Steel/Zinc Plated SZZ=304SS/Zamak TG=PTFE Graphite Compound (GIT) TNM=Special High Strength TR=PTFE-RLN



Models 1020, 2020, 1520, 2520, 2520C



- 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 high strength **connecting rods** are noted for superior strength and bearing quality.
- 5 The **piston rods** are high tensile strength 304 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, positive seating and long life.
- 12 Special **dual inlet seals** with cooling ports allow pumped liquids up to 210°F.
- 13 **Crossheads** are 360° supported for uncompromising alignment.
- 14 Mechanically actuated **inlet valves** provide strong lift and easy prime.

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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