

25 Frame Piston Pump

Current

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		
Flow20 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 Capacity84 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.	RPM
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.	Rated G.P.M.	=	"Desired" G.P.M.
	Rated R.P.M.	=	"Desired" R.P.M.
DETERMINING THE REQUIRED H.P.	GPM x PSI	=	Electric Brake H. P. Required
	1460	=	H. P. Required
DETERMINING MOTOR PULLEY SIZE	Motor Pulley O.D.	=	Pump Pulley O.D.
	Pump R.P.M.	=	Motor R.P.M.

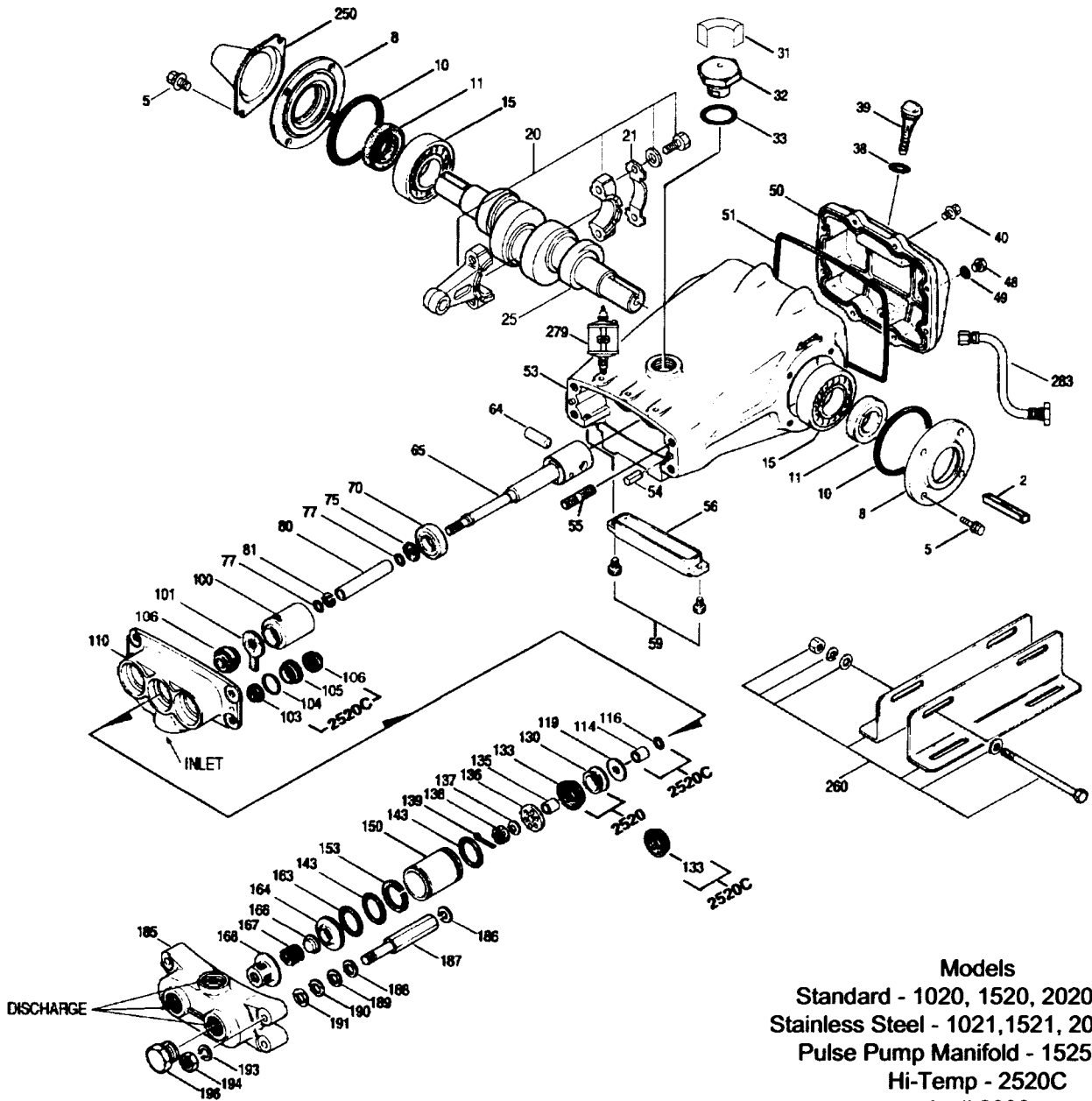
See complete Drive Packages (Includes: Pulleys, Belts, Hubs, Key) Tech Bulletin 003. Refer to pump Service Manual for repair procedure, additional technical information and pump warranty.

"Customer confidence is our greatest asset"

PARTS LIST

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

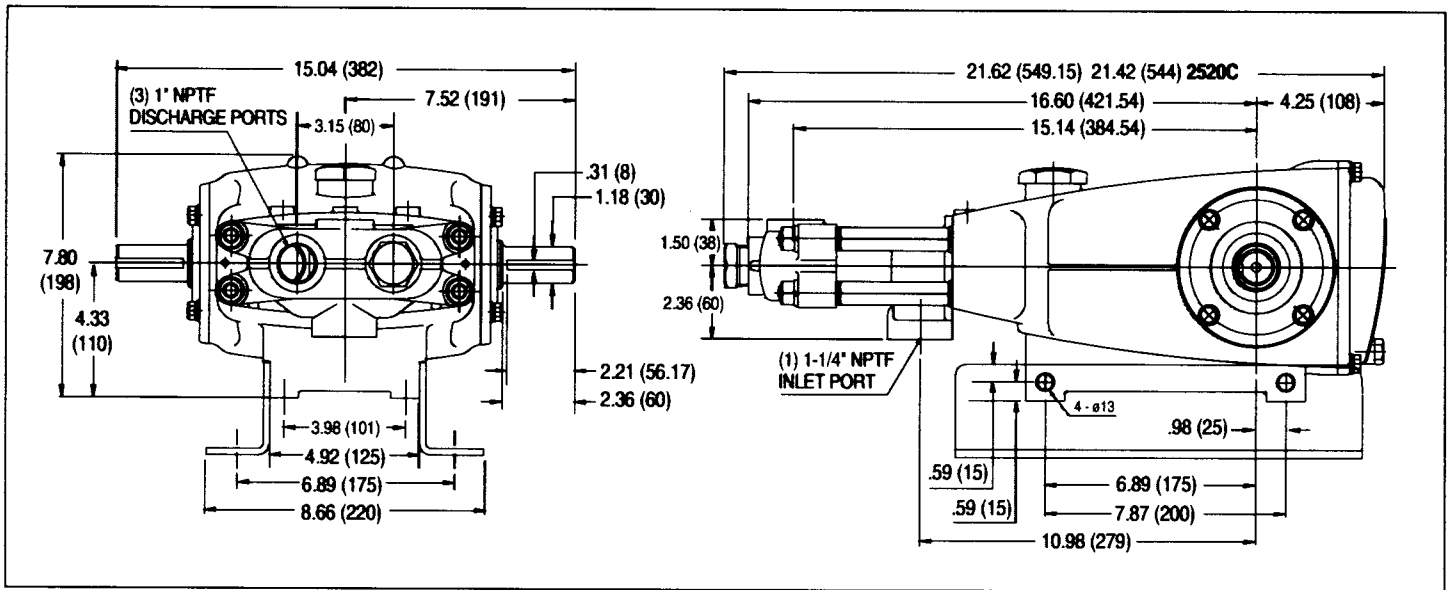
R Components comply with RoHS Directive. See Tech Bulletins 002, 003, 008, 009, 017, 021, 024, 034, 036, 063, 064, 074, 077, 083 and 085 for additional information.

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum BB=Brass BBBCP=Brass/Chrome Plated CM=Chrome-Moly D=Acetal F=Cast Iron

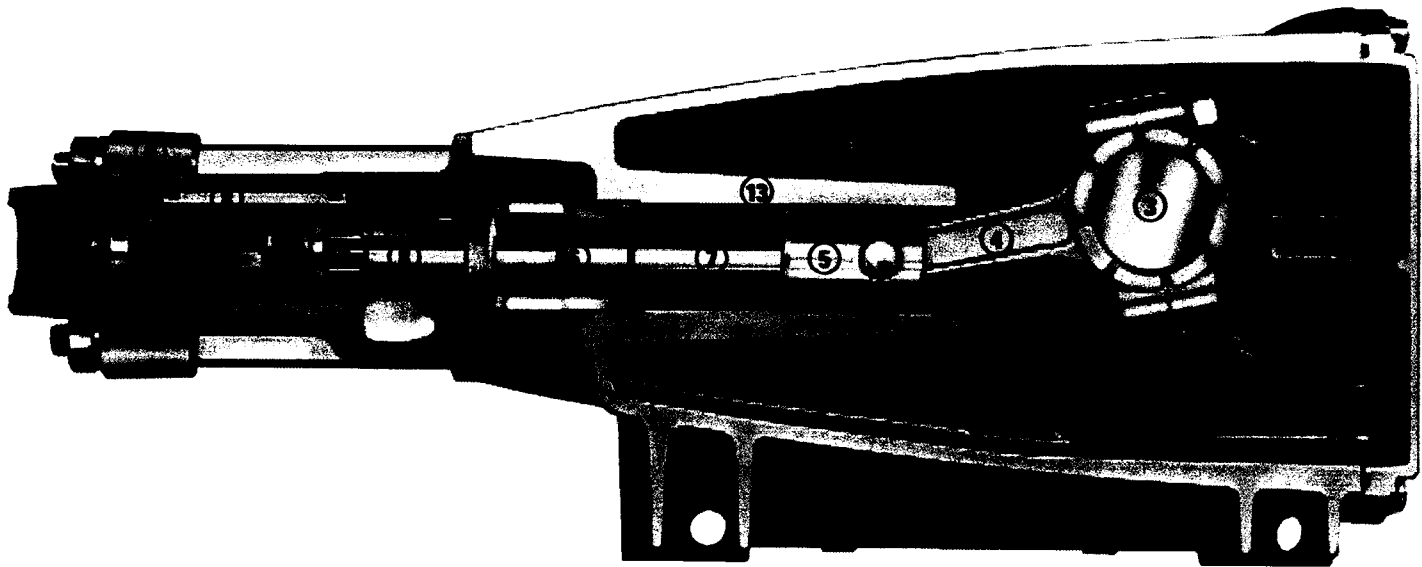
FCM=Forged Chrome-Moly FPM=Fluorocarbon NBR=Medium Nitrile (Buna-N) NY=Nylon POP=Polypropylene PTFE=Pure Polytetrafluoroethylene

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



- Die cast aluminum crankcase means high strength, lightweight, and excellent tolerance control.
- Oversized crankshaft bearings provide extended bearing life and pump performance.
- Chrome-moly crankshaft provides unmatched strength and surface hardness for long life.
- Matched oversized high strength connecting rods are noted for superior strength and bearing quality.
- The piston rods are high tensile strength 304 stainless steel with Zamak crossheads.
- The stainless steel slinger provides back-up protection for the crankcase seal, keeping pumped liquids out of the crankcase.
- The patented stepped piston rod with hard chrome-plated stainless steel sleeve provides a durable wear surface and easy wet end servicing.
- The cylinder and sleeve wear surfaces are hard chrome-plated 304 stainless steel for longer service life.
- Manifolds are of high tensile strength chrome-plated brass or 316 stainless steel for special corrosion resistance.
- 100% wet cup/seal design adds to service life by allowing pumped liquids to cool and lubricate the elastomers on both sides.
- 304 stainless steel valves, seats, and springs provide corrosion-resistance, positive seating and long life.
- Special dual Inlet seals with cooling ports allow pumped liquids up to 210°F.
- Crossheads are 360° supported for uncompromising alignment.
- Mechanically actuated inlet valves provide strong lift and easy prime.

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