

Model 3520 Shown
(Shaft Protector included, mounting Rails sold separately)

35 Frame Plunger Pump

Brass Standard and Flushed **3520, 3520C**
Stainless Steel Standard and Flushed **3521, 3521C**
Nickel Aluminum Bronze Standard **3527**

FEATURES

- Triplex design delivers high efficiency and low pulsation.
- Durable dual V-Packings are lubricated and cooled by pumped liquid.
- Pre-set Lo-Pressure seals provide secondary protection against external leaks and require no packing adjustments.
- Special high-density, polished, concentric plungers provide a true wear surface and extended seal life.
- Specially formulated Seals and V-Packings offer unmatched performance and extended life.
- Interchangeable inlet and discharge valves for easy servicing.
- Wet-end easily serviced without entering crankcase.

SPECIFICATIONS

	U.S. Measure	Metric Measure
Flow.....	23 gpm	(87 lpm)
Pressure Range.....	100 to 2000 psi	(7 to 140 bar)
Inlet Pressure Range.....	Flooded to 70 psi	(Flooded to 4.9 bar)
RPM.....	800 rpm	(800 rpm)
Bore.....	1.260"	(32 mm)
Stroke.....	1.890"	(48 mm)
Crankcase Capacity.....	4.2 Qts.	(4 l)
Maximum Liquid Temperature.....	160°F	(71°C)
Above 130°F call CAT PUMPS for inlet conditions and elastomer recommendations.		
Inlet Ports (2).....	1-1/2" NPTF	(1-1/2" NPTF)
Flushing Ports (2) (3520C, 3521C).....	1/4" NPTF	(1/4" NPTF)
Discharge Ports (2).....	1" NPTF	(1" NPTF)
Pulley Mounting.....	Either Side	(Either Side)
Shaft Diameter.....	1.378"	(35 mm)
Weight.....	139 lbs.	(63 kg)
Dimensions (3520, 3520C,).....	23.86 x 18.11 x 9.72"	(606 x 460 x 247 mm)
Dimensions (3521 3521C, 3527).....	24.33 x 18.11 x 9.72"	(618 x 460 x 247 mm)

ELECTRIC HORSEPOWER REQUIREMENTS

FLOW		PRESSURE				rpm
		psi 1200	psi 1500	psi 1800	psi 2000	
U.S. gpm	lpm	bar 85	bar 105	bar 125	bar 140	
23	87	18.9	23.6	28.4	31.6	800
20	76	16.5	20.6	24.7	27.4	696
18	68	14.8	18.5	22.2	24.7	626

DETERMINING THE PUMP R.P.M.	$\frac{\text{Rated gpm}}{\text{Rated rpm}}$	=	$\frac{\text{"Desired" gpm}}{\text{"Desired" rpm}}$
DETERMINING THE REQUIRED H.P.	$\frac{\text{gpm} \times \text{psi}}{1460}$	=	Electric Brake H. P. Required
DETERMINING MOTOR PULLEY SIZE	$\frac{\text{Motor Pulley O.D.}}{\text{Pump rpm}}$	=	$\frac{\text{Pump Pulley O.D.}}{\text{Motor rpm}}$

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

⚠ 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.

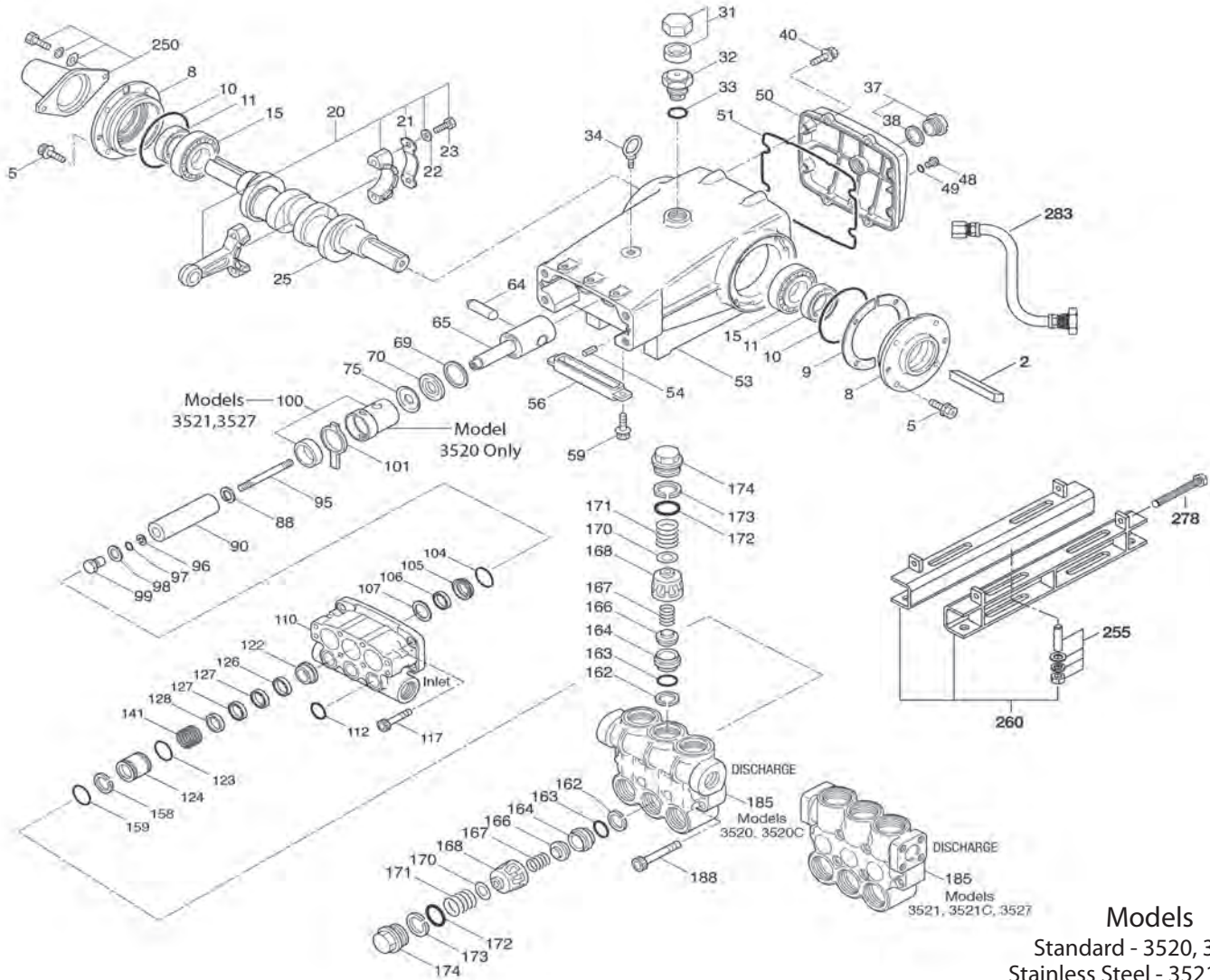
WARRANTY

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

PARTS LIST

ITEM	3520/C	MATL	3521/C	MATL	3527	MATL	DESCRIPTION	QTY
2	34021	STL	34021	STL	34021	STL	Key (M10x8x70)	1
5	125753	S	125753	S	125753	S	Screw, HHC Sems (M8x25)	8
8	44542	AL	44542	AL	44542	AL	Cover, Bearing	2
9	815279	FBR	815279	FBR	815279	FBR	Shim, Split, 2-PC	2
10	12398	NBR	12398	NBR	12398	NBR	O-Ring, Bearing Cover - 70D	2
11	13296	NBR	13296	NBR	13296	NBR	Seal, Oil, Crankshaft	2
15	29326	STL	29326	STL	29326	STL	Bearing, Roller	2
20	121467	TNM	121467	TNM	121467	TNM	Rod, Connecting Assy (Incls: 21, 22, 23) [10/00]	3
21	126749	STCP R	126749	STCP R	126749	STCP R	Washer, Locking	3
22	126593	STCP R	126593	STCP R	126593	STCP R	Washer, Flat (M10)	6
23	122045	STZP	122045	STZP	122045	STZP	Screw, HH (M10x55)	6
25	29325	FCM	29325	FCM	29325	FCM	Crankshaft, Dual End	1
31	828710	PE	828710	PE	828710	PE	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
34	126743	STCP R	126743	STCP R	126743	STCP R	Bolt, Eye (M12x1.75) (For Lifting Pump Only)	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	125753	S	125753	S	125753	S	Screw, HHC Sems (M8x25)	8
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	45936	AL	45936	AL	45936	AL	Cover, Rear	1
51	16612	NBR	16612	NBR	16612	NBR	O-Ring, Cover - 70D	1
53	44487	AL	44487	AL	44487	AL	Crankcase Assy (Incls: 34, 54)	1
54	27488	S	27488	S	27488	S	Pins, Guide	2
56	27790	POP	27790	POP	27790	POP	Pan, Oil	1
59	92538	S	92538	S	92538	S	Screw, HHC Sems (M6x16)	2
64	43864	CM	43864	CM	43864	CM	Pin, Crosshead	3
65	+ 45116	SSZZ	+ 45116	SSZZ	+ 45116	SSZZ	Rod, Plunger	3
69	126587	STCP R	126587	STCP R	126587	STCP R	Washer, Oil Seal	3
70	100488	NBR	100488	NBR	100488	NBR	Seal, Oil, Crankcase	3
	44739	FPM	44739	FPM	44739	FPM	Seal, Oil, Crankcase	3
75	43865	S	43865	S	43865	S	Slinger, Barrier	3
88	45676	S	45676	S	45676	S	Washer, Keyhole (M16)	3
90	43957	CC	43957	CC	43957	CC	Plunger (M32x145)	3
95	+ 89778	SS	+ 89778	SS	+ 89778	SS	Stud, Plunger Retainer (M10x135)	3
96	20189	PTFE	20189	PTFE	20189	PTFE	Back-up-Ring, Plunger Retainer	3
97	11345	NBR	11345	NBR	11345	NBR	O-Ring, Plunger Retainer - 70D	3
	11375	FPM	11375	FPM	11375	FPM	O-Ring, Plunger Retainer	3
	◆ 701490	EPDM	◆ 701490	EPDM	◆ 701490	EPDM	O-Ring, Plunger Retainer	3
	702961	IPFE	702961	IPFE	702961	IPFE	O-Ring, Plunger Retainer - 70D	3
98	44085	SS	44085	SS	44085	SS	Gasket, Retainer	3
99	44084	SS	44084	SS	44084	SS	Retainer, Plunger (M10)	3
100	44119	PPG	814279	PVDF	814279	PVDF	Retainer, Seal (See Tech Bulletin 105)	3
101	44106	—	44106	—	44106	—	Wick, Long Tab	3
104	43875	NBR	43875	NBR	43875	NBR	O-Ring, Inlet Adapter - 70D	3
	44826	FPM	44826	FPM	44826	FPM	O-Ring, Inlet Adapter - 70D	3
	◆ 701656	EPDM	◆ 701656	EPDM	◆ 701656	EPDM	O-Ring, Inlet Adapter - 70D	3
	702977	IPFE	702977	IPFE	702977	IPFE	O-Ring, Inlet Adapter	3
105	49741	BB	45562	SS	45562	SS	Adapter, Inlet	3
106	44098	NBR	44098	NBR	44098	NBR	Seal, LPS w/SS-Spg	3
	44827	FPM	44827	FPM	44827	FPM	Seal, LPS w/SS-Spg	3
	◆ 48244	EPDM	◆ 48244	EPDM	◆ 48244	EPDM	Seal, LPS w/SS-Spg	3
	76298	ST 2	76298	ST 2	76298	ST 2	Seal, LPS w/S-Spg	3
107	43962	S	44101	SS	44101	SS	Washer	3
110	49464	BBCP R	45365	SS	45124	NAB	Manifold, Inlet	1
	49464C	BBCP R	125397	SS	—	—	Manifold, Inlet, Flushed (1/4" Flush Ports)	1
112	11379	NBR	11379	NBR	11379	NBR	O-Ring, Inlet Manifold - 70D	3
	14183	FPM	14183	FPM	14183	FPM	O-Ring, Inlet Manifold	3
	◆ 701491	EPDM	◆ 701491	EPDM	◆ 701491	EPDM	O-Ring, Inlet Manifold - 70D	3
	702705	IPFE	702705	IPFE	702705	IPFE	O-Ring, Inlet Manifold	3
117	44585	S	44585	S	44585	S	Screw, HSH (M14x40)	4
122	49744	BB	49782	SS	49782	SS	Spacer (See Tech Bulletin 114)	3
123	12391	NBR	12391	NBR	12391	NBR	O-Ring, V-Packing Cylinder - 70D	3
	13266	FPM	13266	FPM	13266	FPM	O-Ring, V-Packing Cylinder - 70D	3
	◆ 701657	EPDM	◆ 701657	EPDM	◆ 701657	EPDM	O-Ring, V-Packing Cylinder - 70D	3
	703481	IPFE	703481	IPFE	703481	IPFE	O-Ring, V-Packing Cylinder	3
124	49742	BB	49783	SS	49783	SS	Cylinder, V-Packing (See Tech Bulletin 114)	3
126	43963	BB	48390	D	48390	D	Adapter, Female	3
	—	—	45564	SS	45564	SS	Adapter, Female	3
127	+ 44608	STG*	44608	STG*	44608	STG*	V-Packing	6
	44829	SFG	44829	SFG	44829	SFG	V-Packing	6
128	43965	BB	45565	SS	45565	SS	Adapter, Male	3
141	49743	SS	49743	SS	49743	SS	Spring, Coil (See Tech Bulletin 114)	3
158	48362	D	48362	D	48362	D	Back-up-Ring, V-Packing Cylinder	3
159	48860	NBR	48860	NBR	48860	NBR	O-Ring, V-Packing Cylinder - 90D	3
	20137	FPM	20137	FPM	20137	FPM	O-Ring, V-Packing Cylinder - 70D	3
	◆ 701492	EPDM	◆ 701492	EPDM	◆ 701492	EPDM	O-Ring, V-Packing Cylinder	3
	702963	IPFE	702963	IPFE	702963	IPFE	O-Ring, V-Packing Cylinder - 70D	3
162	48363	D	48363	D	48363	D	Back-up-Ring, Valve Seat	6
163	26142	NBR	26142	NBR	26142	NBR	O-Ring, Seat - 80D	6
	14330	FPM	14330	FPM	14330	FPM	O-Ring, Seat - 70D	6
	◆ 701493	EPDM	◆ 701493	EPDM	◆ 701493	EPDM	O-Ring, Seat	6
	702808	IPFE	702808	IPFE	702808	IPFE	O-Ring, Seat	6
164	44727	S	44612	SS	44612	SS	Seat, Stepped	6
166	43932	S	44108	SS	44108	SS	Valve	6
167	44109	SS	44109	SS	44109	SS	Spring	6
168	44728	PVDF	44728	PVDF	44728	PVDF	Retainer, Spring	6
170	44729	SS	44729	SS	44729	SS	Washer, Spring Retainer	6
171	44644	SS	44644	SS	44644	SS	Coil Spring (70kg), Valve Plug	6
172	89827	NBR	89827	NBR	89827	NBR	O-Ring, Valve Plug - 90D	6
	11747	FPM	11747	FPM	11747	FPM	O-Ring, Valve Plug - 90D	6
	◆ 701494	EPDM	◆ 701494	EPDM	◆ 701494	EPDM	O-Ring, Valve Plug - 70D	6
	703169	IPFE	703169	IPFE	703169	IPFE	O-Ring, Valve Plug	6
173	48364	D	48364	D	48364	D	Back-up-Ring, Valve Plug	6
174	46444	FBB	49300	SSD	44643	NAB	Plug, Valve [02/06]	6
185	49465	BBCP R	49299	SSD	49249	NAB	Manifold, Discharge (See Tech Bulletin 109)	1
188	89981	S	89981	S	89981	S	Screw, HSH (M12x70)	8

EXPLODED VIEW



Models
 Standard - 3520, 3520C
 Stainless Steel - 3521, 3521C
 Nickel Aluminum Bronze - 3527
 July 2011

	3520/C	MATL	3521/C	MATL	3527	MATL		
250	44516	NY	44516	NY	44516	NY	Protector, Shaft w/2 Screws Lockwashers and Washers (Included with pump)	1
255	34018	STZP	34018	STZP	34018	STZP	Kit, Direct Mount	1
	34039	S	34039	S	34039	S	Kit, Direct Mount	1
260	92674	STZP R	92674	STZP R	92674	STZP R	Mounting, Box Assy (Incls: 34018)	1
275	990013	STL	990013	STL	990013	STL	Hub "B" 35mm w/Keyway (See Tech Bulletin 003)	1
278	80540	ZP	80540	ZP	80540	ZP	Screw, HH (M12x100) (Rail Adjusting Screw)	1
279	30278	STZP	30278	STZP	30278	STZP	Oiler (1 oz.)	3
281	30967	—	30967	—	30967	—	Glass, Oiler	3
282	10069	NBR	10069	NBR	10069	NBR	Gasket, Oiler	3
283	34314	—	34314	—	34314	—	Kit, Oil Drain (3/8" x 48")	1
290	6124	—	6124	—	6124	—	Gasket, Liquid (3 oz.)	1
299	818473	BBCP	818373	SS	815438	NAB	Head, Complete	1
300	76841	NBR*	76841	NBR*	76841	NBR*	Kit, Seal (Incls: 97, 104, 106, 112, 123, 127, 158, 159)	1
	76842	FPM	76842	FPM	76842	FPM	Kit, Seal (Incls: 97, 104, 106, 112, 123, 127, 158, 159)	1
◆	76843	EPDM*	76843	EPDM*	76843	EPDM*	Kit, Seal (Incls: 97, 104, 106, 112, 123, 127, 158, 159)	1
	76844	IPFE*	76844	IPFE*	76844	IPFE*	Kit, Seal (Incls: 97, 104, 106, 112, 123, 127, 158, 159)	1
310	34235	NBR	34017	NBR	34017	NBR	Kit, Valve Preassembled (Incls: 162, 163, 164, 166, 167, 168, 170, 172, 173)	2
	31955	FPM	31955	FPM	31955	FPM	Kit, Valve Preassembled (Incls: 162, 163, 164, 166, 167, 168, 170, 172, 173)	2
◆	31952	EPDM	31952	EPDM	31952	EPDM	Kit, Valve Preassembled (Incls: 162, 163, 164, 166, 167, 168, 170, 172, 173)	2
	76617	IPFE	76617	IPFE	76617	IPFE	Kit, Valve Preassembled (Incls: 162, 163, 164, 166, 167, 168, 170, 172, 173)	2
—	819000	F	819000	F	819000	F	Assy, Crankcase, Cast Iron Conversion	1
390	714500	SS	714500	SS	714500	SS	C.A.T. (Inlet pressure stabilizer for RO and boosted inlet applications)	1
391	714506	SS	714506	SS	714506	SS	Adapter (2 per C.A.T.) (See Data Sheet for complete selection)	2
392	701828	SS	701828	SS	701828	SS	Elbow Assy used with Adapter Assy. 714506	1
—	6575	—	6575	—	6575	—	Plunger Pump Service DVD	1
—	6100	—	6100	—	6100	—	Oil, Case (12 Bottles) ISO 68 Hydraulic	1
—	—	—	6119	—	—	—	(Fill to specified crankcase capacity prior to start-up)	1
—	—	—	—	—	—	—	Lubricant, Antiseize (2 oz.) (See Tech Bulletin 095)	1

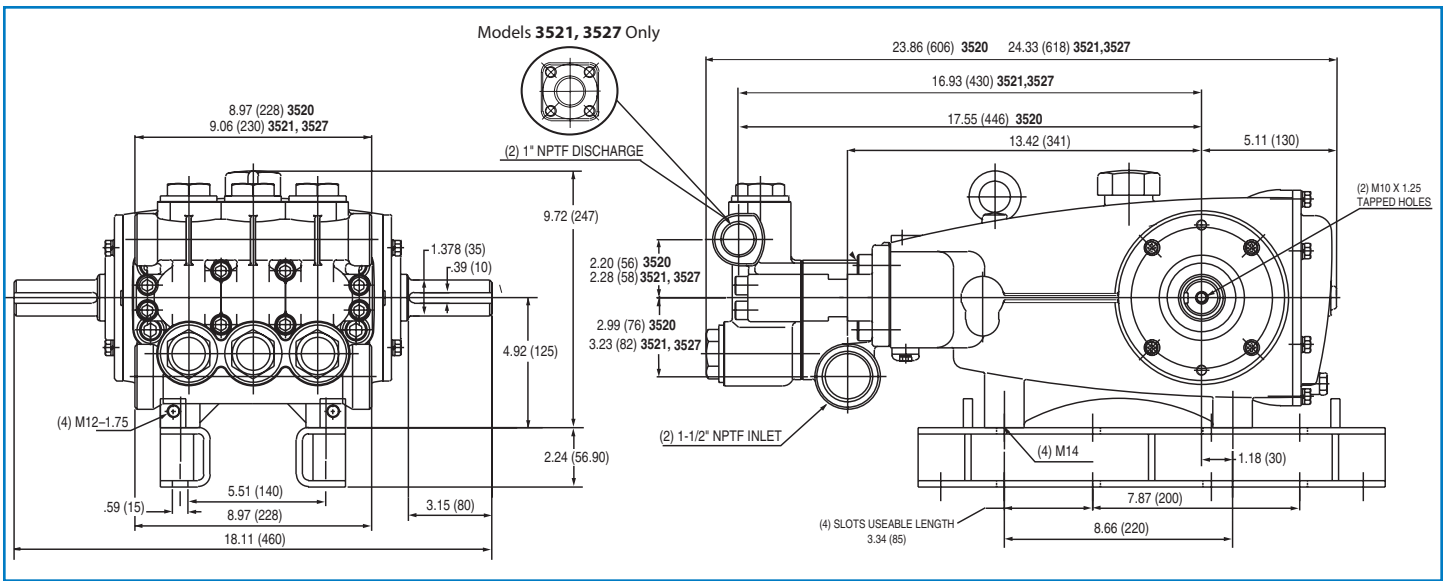
Bold print part numbers are unique to a particular pump model. Italics are optional items. [] Date of latest production change. **◆** Silicone oil/grease required.

† Production Parts different from service parts. R Components comply with RoHS Directive.

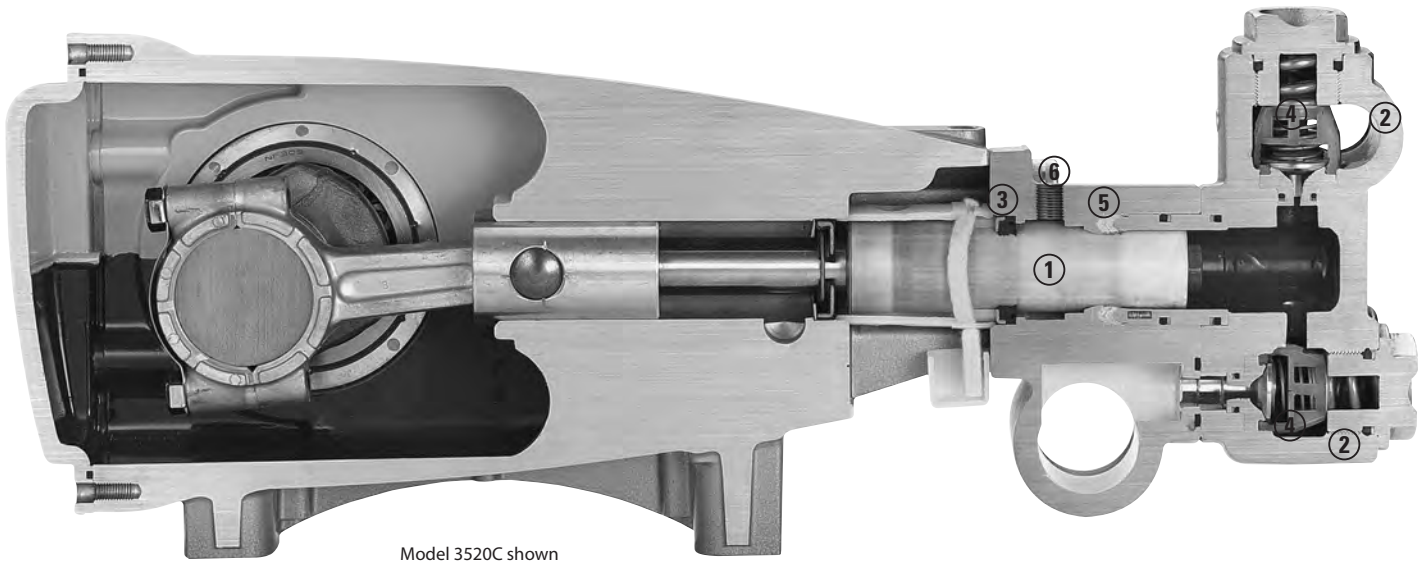
*Review material codes for individual items (STG generally may be used as alternate).

View Tech Bulletins 002, 003, 024, 040, 041, 050, 052, 053, 064, 069, 074, 077, 083, 100, 105, 109 and 114 for additional information.

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum BB=Brass BBCP=Brass/Chrome Plated CC=Ceramic CM=Chrome-Moly D=Acetal EPDM=Ethylene Propylene Diene Monomer F=Cast Iron FBR=Fiber FCM=Forged Chrome-moly FPM=Fluorocarbon NAB=Nickel Aluminum Bronze NBR=Medium Nitrile (Buna-N) NBRs=Buna, Silicone Free NY=Nylon PE=Polyethylene POP=Polypropylene PPG=Glass Filled Polypropylene PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS SS=316SS SSD=Duplex Stainless SteelSFG=Special Blend FPM PPG=Glass Filled Polypropylene ST 2=Special PTFE 2 STG=Special Blend PTFE White STL=Steel STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated PE=PolyethyleneSSZZ=316SS/Zamak TNM=Special High Strength ZP=Zinc Plated



Models 3520, 3520C, 3521, 3521C, 3527



- 1 Special concentric, high-density, polished, solid ceramic **plungers** provide a true wear surface and extended seal life.
- 2 **Manifolds** are a high tensile strength forged brass, 316 stainless steel, duplex stainless or nickel aluminum bronze for long term, continuous duty.
- 3 100% wet **seal** design adds to service life by allowing pumped liquids to cool and lubricate on both sides.
- 4 Stainless steel **valves, seats and springs** provide corrosion-resistance, ultimate seating and extended life.
- 5 Specially formulated, CAT PUMP exclusive, **V-Packings** offer unmatched performance and seal life.
- 6 Special **Flushed Inlet Manifold** permits external flush for adding cooling with high temperature liquids and lubrication with low lubricity liquids.



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