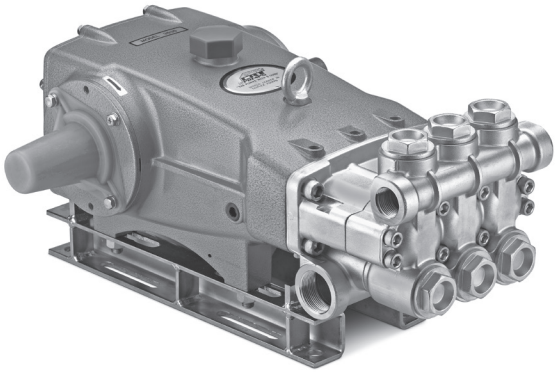
DATA SHEET
35 FRAME PLUNGER PUMPS

The Pumps with Nine Lives

Brass Model	Brass Flushed Model	Nickel Aluminum Bronze Model
3520	**3520C**	**3527**



Model 3520 Shown
(Shaft protector included, mounting rails sold separately)

FEATURES

- Triplex design offers high efficiency and low pulsation.
- Durable dual V-packings are lubricated and cooled by pumped liquid.
- Pre-set low-pressure seals provide secondary protection against external leaks and require no packing adjustments.
- Model 3520C offers external flush for higher-temperature or low-lubricity liquids.
- Standard pumps are fitted with NBR seals. Optional seals are available for high-temperature or chemical compatibility.

SPECIFICATIONS	U.S. Measure	Metric Measure
Flow	25 gpm	94.6 lpm
Pump Pressure Range	100–2000 psi	6.9–138 bar
Pump RPM*	870 rpm	870 rpm
Inlet Pressure Range	Flooded to 70 psi	Flooded to 4.8 bar
Max. Liquid Temp. (NBR)	160° F	71° C
Alternative seals available for higher temperatures up to 200° F		
Bore	1.260"	32 mm
Stroke	1.890"	48 mm
Crankcase Capacity	4.2 Qts	4 l
Inlet Ports (2)	1 ½" NPT(F)	1 ½" NPT (F)
Flush Ports (2) "C"	¼" NPT (F)	¼" NPT (F)
Discharge Ports (2)	1" NPT (F)	1" NPT (F)
Shaft Diameter	1.378"	35 mm
Pulley Mounting	Either Side	Either Side
Weight	139 lbs	63 kg
Dimensions (3520, 3520C)	23.86 x 18.11 x 9.72"	606 x 460 x 247 mm
Dimensions (3527)	24.33 x 18.11 x 9.72"	618 x 460 x 247 mm

*Pump minimum is 100 RPM.

ALTERNATIVE SEAL CONFIGURATION

MATERIAL	SUFFIX CODE	MAXIMUM TEMPERATURE	
NBR	—	160° F	(71° C)
FPM	.0110	180° F	(82° C)
EPDM	.0220	160° F	(71° C)
IPFE	.0770	200° F	(93° C)
STHT	.3400	190° F	(88° C)

See **Tech Bulletin 002** for inlet conditions and RPM at high-temperature.

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.

$$\frac{\text{gpm x psi}}{1460} = \frac{\text{Electric Brake}}{\text{H. P. Required}}$$

DETERMINING MOTOR PULLEY SIZE

$$\frac{\text{Motor Pulley O.D.}}{\text{Pump rpm}} = \frac{\text{Pump Pulley O.D.}}{\text{Motor rpm}}$$

Refer to pump **Service Manual** for repair procedure and additional technical information.

PARTS LIST

ITEM		P/N	MATL	P/N	MATL	DESCRIPTION	QTY
		3520/C		**3527**			
5		96049	S	96049	S	Screw, HHC Sems (M10 x 25) (See Tech Bulletin 074, 125)	8
8		134604	ALE	134604	ALE	Cover, Bearing (See Tech Bulletin 118, 125)	2
9		815279	FBR	815279	FBR	Shim, Split, 2 Piece (See Tech Bulletin 125)	2
10		12398	NBR	12398	NBR	O-Ring, Bearing Cover–70D	2
11		13296	NBR	13296	NBR	Seal, Oil, Crankshaft	2
12		855049	S	855049	S	Shim, Split, 2-Piece	0–2
15		29326	STL	29326	STL	Bearing, Roller	2
20		121467	TNM	121467	TNM	Rod, Connecting Assembly (Includes: 21, 22, 23) [10/00] (See Tech Bulletin 074)	3
21		126749	STCP R	126749	STCP R	Washer, Locking	3
22		126593	STCP R	126593	STCP R	Washer, Flat (M10.5)	6
23		122045	STZP	122045	STZP	Screw, HH (M10 x 55)	6
25		29325	FCM	29325	FCM	Crankshaft, Dual End (M48)	1
31		828710	PE	828710	PE	Protector, Oil Cap with Foam Gasket	1
32		43211	ABS	43211	ABS	Cap, Oil Filler	1
33		14177	NBR	14177	NBR	O-Ring, Oil Filler Cap–70D	1
34		126743	STCP R	126743	STCP R	Bolt, Eye (M12 x 1.75) (For Lifting Pump Only)	1
37		92241	—	92241	—	Gauge, Oil, Bubble with Gasket–80D (See Tech Bulletin 074)	1
38		44428	NBR	44428	NBR	Gasket, Flat Oil Gauge–80D	1
40		125753	S	125753	S	Screw, HHC Sems (M8 x 25) (See Tech Bulletin 074)	8
48		25625	STCP	25625	STCP	Plug, Drain (¼" x 19 BSP)	1
49		23170	NBR	23170	NBR	O-Ring, Drain Plug–70D	1
50		45936	ALE	45936	ALE	Cover, Rear (See Tech Bulletin 118)	1
51		16612	NBR	16612	NBR	O-Ring, Cover–70D	1
53		134784	ALE	134784	ALE	Crankcase Assembly (Includes: 34, 54) (See Tech Bulletin 118, 125, 126)	1
54		27488	S	27488	S	Pins, Guide	2
56		27790	POP	27790	POP	Pan, Oil	1
59		92538	S	92538	S	Screw, HHC Sems (M6 x 16)	2
64		43864	CM	43864	CM	Pin, Crosshead	3
65	†	45116	SSZZ	45116	SSZZ	Rod, Plunger	3
69		126587	STCP R	126587	STCP R	Washer, Oil Seal	3
70		100488	NBRS	100488	NBRS	Seal, Oil, Crankcase	3
75		43865	S	43865	S	Slinger, Barrier	3
88		45676	S	45676	S	Washer, Keyhole (M16)	3
90		43957	CC	43957	CC	Plunger (M32 x 145)	3
95	†	89778	SS	89778	SS	Stud, Plunger Retainer (M10 x 135)	3
96		20189	PTFE	20189	PTFE	Backup-Ring, Plunger Retainer	3
97		11345	NBR	11345	NBR	O-Ring, Plunger Retainer–70D	3
98		44085	SS	44085	SS	Gasket, Retainer	3
99	†	44084	SS	44084	SS	Retainer, Plunger (M10) (See Tech Bulletin 074)	3
100		**44119**	PPG	**814279**	PVDF	Retainer, Seal (See Tech Bulletin 105)	3
101		44106	—	44106	—	Wick, Long Tab	3
104		43875	NBR	43875	NBR	O-Ring, Inlet Adapter–70D	3
105		**49741**	BB	**45562**	SS	Adapter, Inlet	3
106		44098	NBR	44098	NBR	Seal, LPS with SS–Spring	3
107		**43962**	S	**44101**	SS	Washer	3
110		**49464**	BBCP R	**45124**	NAB	Manifold, Inlet	1
		49464C	BBCP R	—	—	Manifold, Inlet, Flushed (Model 3520C)	1
112		11379	NBR	11379	NBR	O-Ring, Inlet Manifold–70D	3
117		44585	S	44585	S	Screw, HSH (M14 x 40) (See Tech Bulletin 074)	4
122		**49744**	BB	**49782**	SS	Spacer (See Tech Bulletin 114)	3
123		12391	NBR	12391	NBR	O-Ring, V-Packing Cylinder–70D	3
124		**49742**	BB	**49783**	SS	Cylinder, V-Packing (See Tech Bulletin 114)	3
126		**43963**	BB	**48390**	D	Adapter, Female	3
		—	—	*45564*	*SS*	*Adapter, Female*	*3*
127	†	44608	STG	44608	STG	V-Packing	6
128		**43965**	BB	**45565**	SS	Adapter, Male	3
141		49743	SS	49743	SS	Spring, Coil (See Tech Bulletin 114)	3
158		48362	D	48362	D	Backup-Ring, V-Packing Cylinder	3
159		48860	NBR	48860	NBR	O-Ring, V-Packing Cylinder–90D	3
162		48363	D	48363	D	Backup-Ring, Valve Seat	6
163		26142	NBR	26142	NBR	O-Ring, Seat–80D	6
164		**44727**	S	**44612**	SS	Seat, Stepped	6
166		**43932**	S	**44108**	SS	Valve	6
167		44109	SS	44109	SS	Spring	6
168		44728	PVDF	44728	PVDF	Retainer, Spring	6
170		44729	SS	44729	SS	Washer, Spring Retainer	6
171		44644	SS	44644	SS	Coil Spring (70 kg), Valve Plug	6
172		89827	NBR	89827	NBR	O-Ring, Valve Plug–90D	6
173		48364	D	48364	D	Backup-Ring, Valve Plug	6
174		**46444**	FBB	**44643**	NAB	Plug, Valve [02/06] (See Tech Bulletin 074)	6
185		**49465**	BBCP R	**49249**	NAB	Manifold, Discharge (See Tech Bulletins 099 and 109)	1
188		89981	S	89981	S	Screw, HSH (M12 x 70) (See Tech Bulletin 074)	8
250		855042	NY	855042	NY	Protector, Shaft with Two (2) Screws Lockwashers and Washers (Included with Pump) (See Tech Bulletin 125)	1

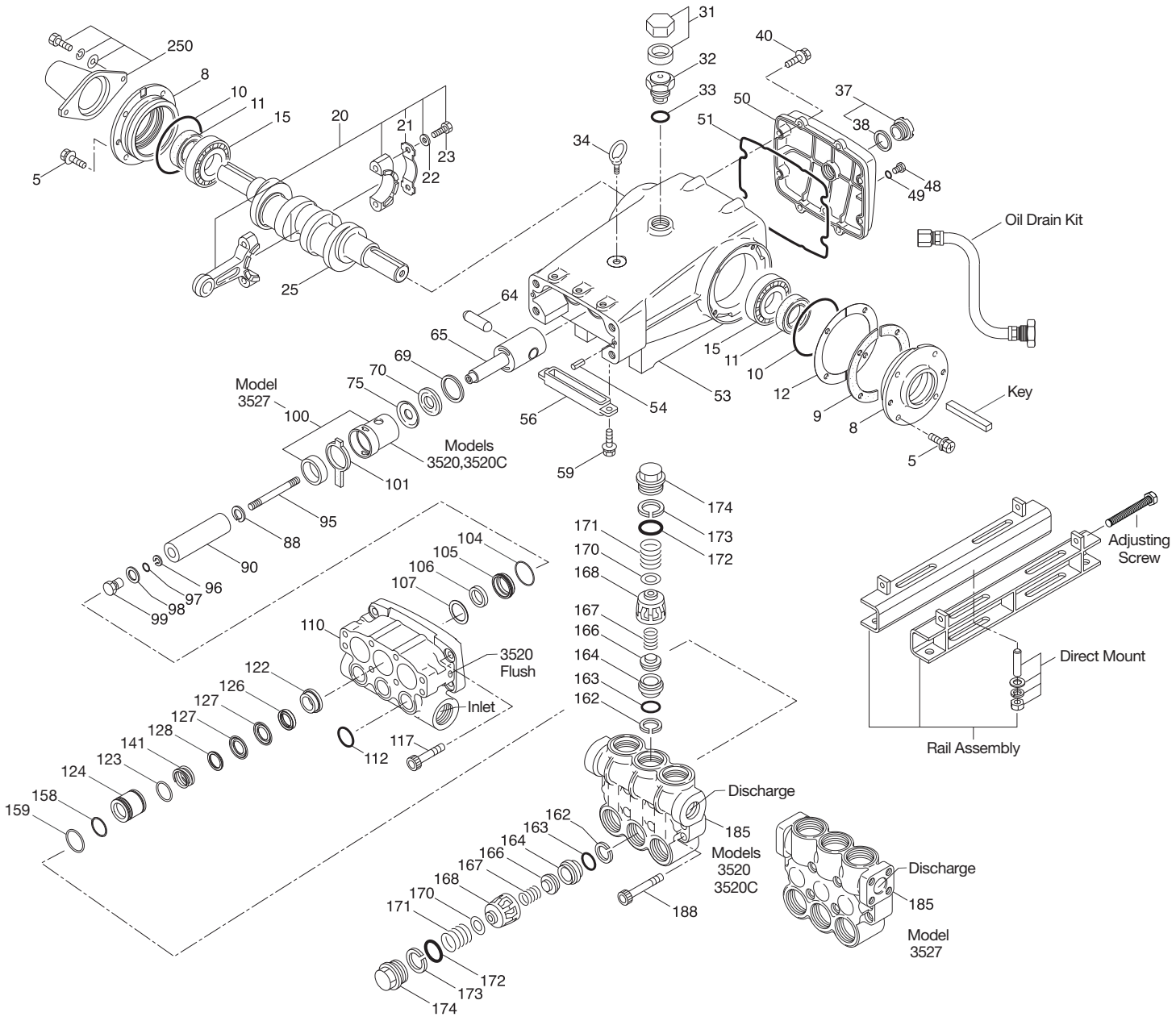
Bold print part numbers are unique to a particular pump model. *Italics are optional items.* [ ] Date of latest production change.

† Production Parts different from service parts. R Compoments comply with RoHS Directive. For additional technical information see www.catpumps.com/literature/tech-bulletins.

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum ALE=Aluminum Epoxy 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 IPFE=I-Perfluoroelastomer 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 SFG=Special Blend FPM ST 2=Special PTFE 2 STG=Special Blend PTFE White STCP=Steel/Chrome Plated STL=Steel STZP=Steel/Zinc Plated SSZZ=316SS/Zamak TNM=Special High Strength ZP=Zinc Plated

Standard and optional Seal Kits and Valve Kits listed on pages 3 and 4. Optional Parts and Accessories and Service parts listed on Page 3.

EXPLODED VIEW



Models
Brass 3520, 3520C
Nickel Aluminum Bronze 3527
January 2021

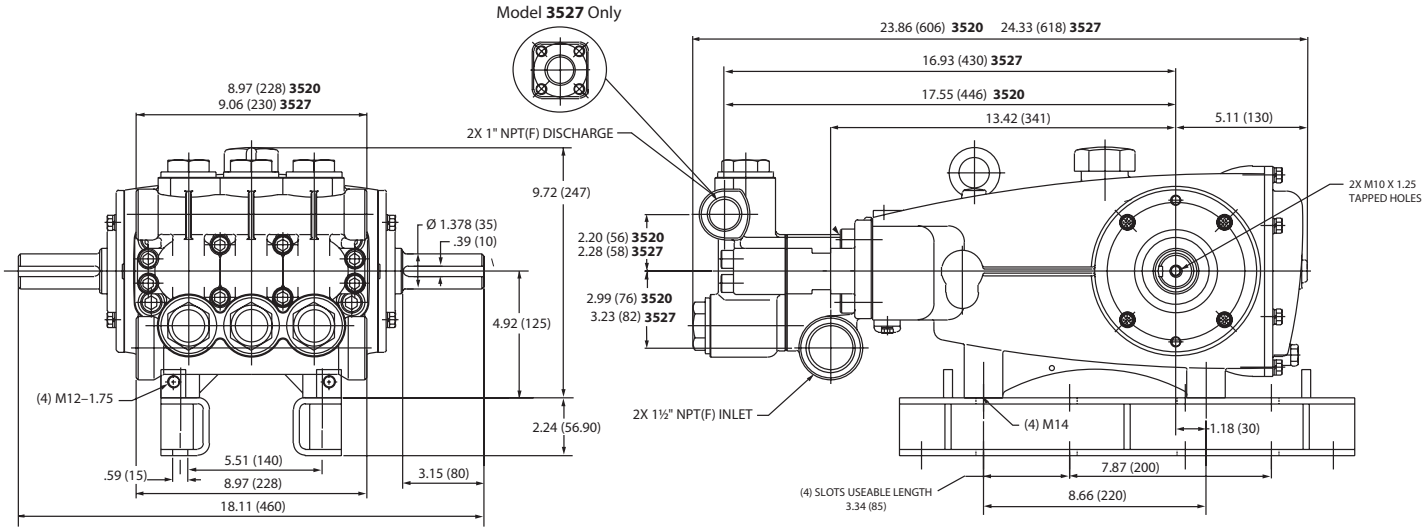
OPTIONAL PARTS AND ACCESSORIES

PART	DESCRIPTION	QTY
34021	Key, M10 x 8 x 70	1
92674	Mount, Rail Assembly	1
34018	Mount, Direct (STZP R)	1
34039	Mount, Direct (S)	1
990013	Hub, "B", 35 mm (STL) (Not Shown)	1
80540	Screwing, Adjusting M12 x 100	1
30278	Oiler (1 oz) (Not Shown)	3
34314	Kit, Oil Drain	1
30696	Plier, Reverse (Not Shown)	1

SERVICE PARTS

PART	DESCRIPTION	QTY
76841	Seal Kit – Standard NBR	1
34235	Valve Kit (3520, 3520C) – Standard NBR	2
34017	Valve Kit (3527) – Standard NBR	2
6100	Oil, Case (12–21 oz bottle)	1
6124	Gasket, Liquid (3 oz)	1
818473	Head, Complete – 3520 with NBR Seals and O-Rings	1
815438	Head, Complete – 3527 with NBR Seals and O-Rings	1
819000	Assembly, Crankcase, Cast Iron Conversion	1

Kits – FPM (.0110), EPDM (.0220), IPFE (.0770), STHT (.3400) listed on Page 4.



Models 3520, 3520C, 3527

SEAL KITS One (1) seal kit required per pump

PUMP MODELS	NBR (STD)	FPM (.0110)	EPDM (.0220)◆	IPFE (.0770)	STHT (.3400)
3520,3520C,3527	76841*	76842	76843 *	76844 *	76877

ITEM (Included in Seal Kits)						DESCRIPTION	QTY
97	11345	11375	701490	702961	11345	O-Ring, Plunger Retainer	3
104	43875	44826	701656	702977	43875	O-Ring, Inlet Adapter	3
106	44098	44827	48244	76298	76298	Seal, LPS with SS–Spring	3
112	11379	14183	701491	702705	11379	O-Ring, Inlet Manifold	3
123	12391	13266	701657	703481	12391	O-Ring, V-Packing Cylinder	3
127	44608	44829	44608	44608	44608	V-Packing	6
158	48362	48362	48362	20464	48362	Backup-Ring, V-Packing Cylinder	3
159	48860	20137	701492	703159	48860	O-Ring, V-Packing Cylinder	3

◆ Silicone oil/grease required *Review material codes for individual items (STG generally may be used as alternative)

VALVE KITS Two (2) valve kits required per pump

PUMP MODELS	NBR (STD)	FPM (.0110)	EPDM (.0220)◆	IPFE (.0770)	STHT (.3400)
3520,3520C	34235	31955	31952	76617	34325
3527	34017	31955	31952	76617	34017

ITEM (Included in Valve Kits)						DESCRIPTION	QTY
162	48363	48363	48363	48363	48363	Backup-Ring, Valve Seat	3
163	26142	14330	701493	702808	26142	O-Ring, Valve Seat	3
164	44727	44612	44612	44612	44727	Seat, Stepped (3520, 3520C)	3
	44612	44612	44612	44612	44612	Seat, Stepped (3527)	3
166	43932	44108	44108	44108	43932	Valve (3520, 3520C)	3
	44108	44108	44108	44108	44108	Valve (3527)	3
167	44109	44109	44109	44109	44109	Spring	3
168	44728	44728	44728	44728	44728	Retainer, Spring	3
170	44729	44729	44729	44729	44729	Washer, Spring Retainer	3
172	89827	11747	701494	703169	89827	O-Ring, Valve Plug	3
173	48364	48364	48364	48364	48364	Backup-Ring, Valve Plug	3

◆ Silicone oil/grease required

⚠ 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/dynamic-literature/cautions-and-warnings or can be requested directly from Cat Pumps.

WARRANTY

View the Limited Warranty on-line at www.catpumps.com/literature/cat-pumps-limited-warranty

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PN 993119 Rev G 21018 1/21