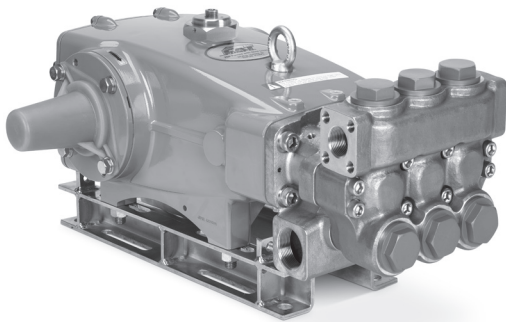


# DATA SHEET

## 35 FRAME PLUNGER PUMPS



**Stainless Steel Model:** **3521DHS**  
**Flushed Stainless Steel Model:** **3521C**



Model 3521DHS Shown  
 (Shaft protector included, mounting rails sold separately)

### FEATURES

- Triplex plunger design ensures 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 3521C offers external flush for high-temperature or low-lubricity liquids.
- Pump comes standard with NBR seals. Alternative seal materials are available for higher 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
<b>Alternative seals available for higher temperatures up to 200° F</b>		
Bore	1.260"	32 mm
Stroke	1.890"	48 mm
Crankcase Capacity	4.2 qts	4 l
Inlet Ports (2)	1½" NPT(F)	1½" 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	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)

See **Tech Bulletin 002** for inlet conditions and RPM at higher temperatures.

**DETERMINING THE PUMP RPM**

$$\frac{\text{Rated gpm}}{\text{Rated rpm}} = \frac{\text{Desired gpm}}{\text{Desired rpm}}$$

**DETERMINING THE REQUIRED HP**

$$\text{hp (Electric Brake)} = \frac{\text{gpm} \times \text{psi}}{1460}$$

**DETERMINING MOTOR PULLEY SIZE**

$$\frac{\text{Motor Pulley OD}}{\text{Pump rpm}} = \frac{\text{Pump Pulley OD}}{\text{Motor rpm}}$$

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

# PARTS LIST

ITEM	P/N	MATL	DESCRIPTION	QTY
5	96049	S	Screw, HHC Sems (M10 x 25) (See Tech Bulletins 074, 125)	8
8	134604	ALE	Cover, Bearing (See Tech Bulletins 118, 125)	2
9	815279	FBR	Shim, Split, 2-Piece (See Tech Bulletins 125)	2
10	12398	NBR	O-Ring, Bearing Cover-70D	2
11	13296	NBR	Seal, Oil, Crankshaft	2
12	855049	S	Shim, Split, 2-Piece	0-2
15	29326	STL	Bearing, Roller	2
20	<b>126725</b>	BZ	Rod, Connecting Assembly (Includes: 21, 22, 23) (Model 3521DHS) (See Tech Bulletin 074)	3
	<b>121467</b>	TNM	Rod, Connecting Assembly (Includes: 21, 22, 23) (Model 3521C) (See Tech Bulletin 074)	3
21	126749	STCP R	Washer, Locking	3
22	126593	STCP R	Washer, Flat (M10.5)	6
23	122045	STZP	Screw, HH (M10 x 55)	6
25	29325	FCM	Crankshaft, Dual End (M48)	1
31	828710	PE	Protector, Oil Cap with Foam Gasket	1
32	43211	ABS	Cap, Oil Filler	1
33	14177	NBR	O-Ring, Oil Filler Cap-70D	1
34	126743	STCP R	Bolt, Eye (M12 x 1.75) (For Lifting Pump Only)	1
37	92241	PC	Gauge, Oil, Bubble with Gasket-80D	1
38	44428	NBR	Gasket, Flat Oil Gauge-80D	1
40	125753	S	Screw, HHC Sems (M8 x 25) (See Tech Bulletin 074)	8
48	25625	STCP	Plug, Drain (1/4" x 19 BSP)	1
49	23170	NBR	O-Ring, Drain Plug-70D	1
50	45936	ALE	Cover, Rear (See Tech Bulletin 118)	1
51	16612	NBR	O-Ring, Cover-70D	1
53	134784	ALE	Crankcase Assembly (Includes 54) (See Tech Bulletins 118, 125, 126)	1
54	27488	S	Pins, Guide	2
56	27790	POP	Pan, Oil	1
59	92538	S	Screw, HHC Sems (M6 x 16)	2
64	43864	CM	Pin, Crosshead	3
65	<b>49166</b>	SSHB	Rod, Plunger (Model 3521DHS)	3
	<b>45116</b>	SSZZ	Rod, Plunger (Model 3521C)	3
69	126587	STCP R	Washer, Oil Seal	3
70	100488	NBR S	Seal, Oil, Crankcase	3
75	43865	S	Slinger, Barrier	3
88	45676	S	Washer, Keyhole (M16)	3
90	43957	CC	Plunger (M32 x 145)	3
95	89778	SS	Stud, Plunger Retainer (M10 x 135)	3
96	20189	PTFE	Backup Ring, Plunger Retainer	3
97	11345	NBR	O-Ring, Plunger Retainer-70D	3
98	44085	SS	Gasket, Retainer	3
99	44084	SS	Retainer, Plunger (M10) (See Tech Bulletin 074)	3
100	814279	PVDF	Retainer, Seal (See Tech Bulletin 105)	3
101	44106	—	Wick, Long Tab	3
104	43875	NBR	O-Ring, Inlet Adapter-70D	3
105	45562	SS	Adapter, Inlet	3
106	44098	NBR	Seal, Low-Pressure, with SS-Spring	3
107	44101	SS	Washer	3
110	<b>45365</b>	SS	Manifold, Inlet (Model 3521DHS)	1
	<b>125397</b>	SS	Manifold, Inlet, Flushed (1/4" Flush Ports) (Model 3521C)	1
112	11379	NBR	O-Ring, Inlet Manifold-70D	3
117	44585	S	Screw, HSH (M14 x 40)	4
122	49782	SS	Spacer (See Tech Bulletin 114)	3
123	12391	NBR	O-Ring, V-Packing Cylinder-70D	3
124	49783	SS	Cylinder, V-Packing (See Tech Bulletin 114)	3
126	48390	D	Adapter, Female	3
	45564	SS	Adapter, Female	3
127	44608	STG	V-Packing	6
128	45565	SS	Adapter, Male	3
141	49743	SS	Spring, Coil (See Tech Bulletin 114)	3
158	48362	D	Backup Ring, V-Packing Cylinder	3
159	48860	NBR	O-Ring, V-Packing Cylinder-90D	3
162	48363	D	Backup Ring, Valve Seat	6
163	26142	NBR	O-Ring, Seat-80D	6
164	44612	SS	Seat, Stepped	6
166	44108	SS	Valve	6
167	44109	SS	Spring	6
168	44728	PVDF	Retainer, Spring	6
170	44729	SS	Washer, Spring Retainer	6
171	44644	SS	Coil Spring (70 kg), Valve Plug	6
172	89827	NBR	O-Ring, Valve Plug-90D	6
173	48364	D	Backup Ring, Valve Plug	6
174	49300	SSD	Plug, Valve (See Tech Bulletins 074, 099)	6
185	49299	SSD	Manifold, Discharge (See Tech Bulletin 099)	1
188	89981	S	Screw, HSH (M12 x 70) (See Tech Bulletin 074)	8
250	855042	NY	Protector, Shaft with 2 Screws, Lockwashers and Washers (Included with Pump) (See Tech Bulletin 125)	1

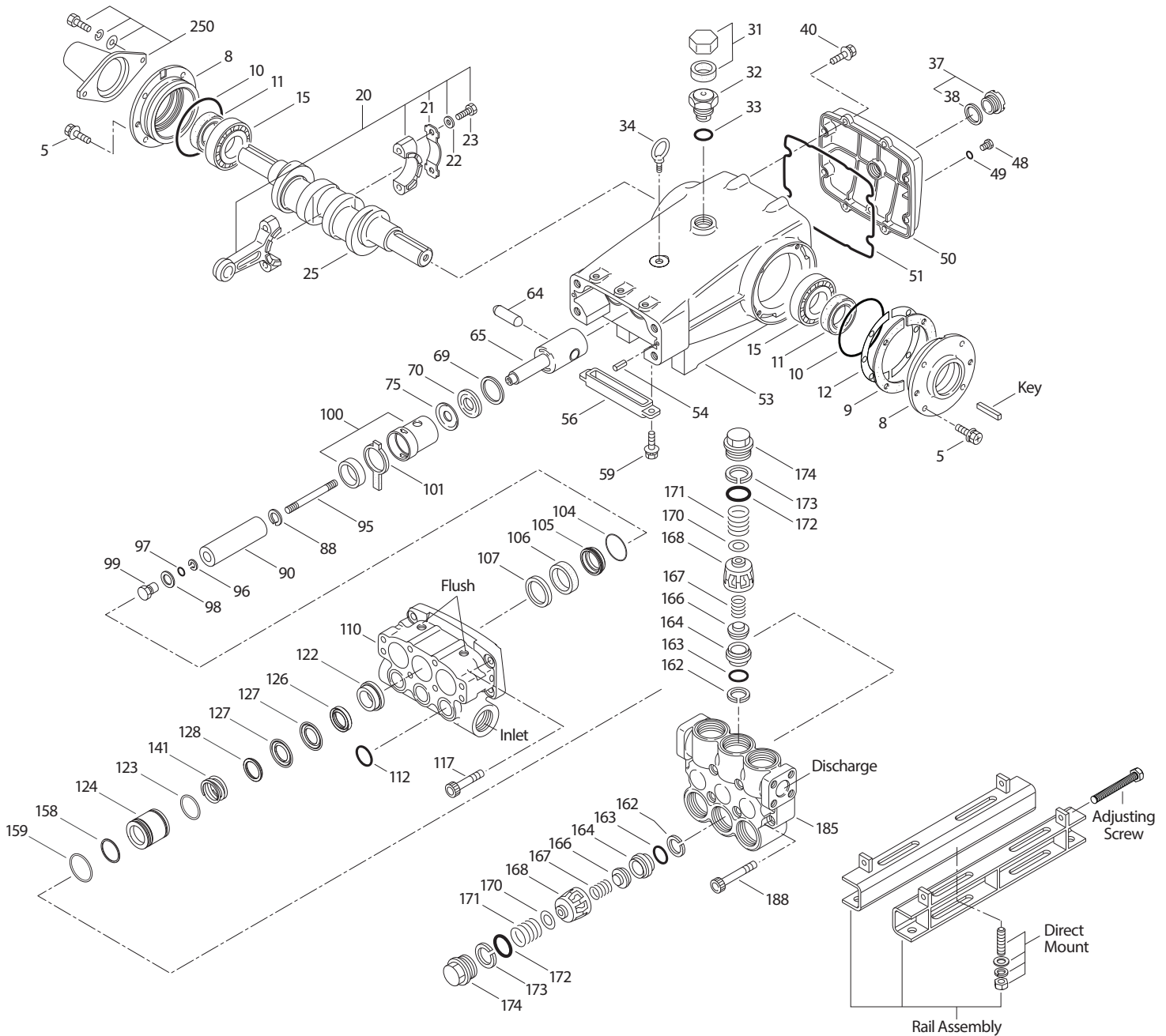
**Bold print part numbers are unique to a particular pump model. Italics are optional items.**

† Production Parts different from service parts. R Components comply with RoHS Directive. For additional technical information see [www.catpumps.com/literature/tech-bulletins](http://www.catpumps.com/literature/tech-bulletins).

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum ALE=Aluminum Epoxy BZ=Bronze 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 NBR=Medium Nitrile (Buna-N) NBR S=Buna, Silicone Free NY=Nylon PC=Poly Carbonate PE=Polyethylene POP=Polypropylene PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS SS=316SS SSD=Duplex Stainless Steel SFG=Special Blend FPM PPG=Glass Filled Polypropylene ST 2=Special PTFE 2 STG=Special Blend PTFE White STCP=Steel/Chrome Plated STL=Steel STZP=Steel/Zinc Plated SSHB=316SS/High Strength Brass SSZZ=316SS/Zamak TNM=Special High Strength

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

# EXPLODED VIEW



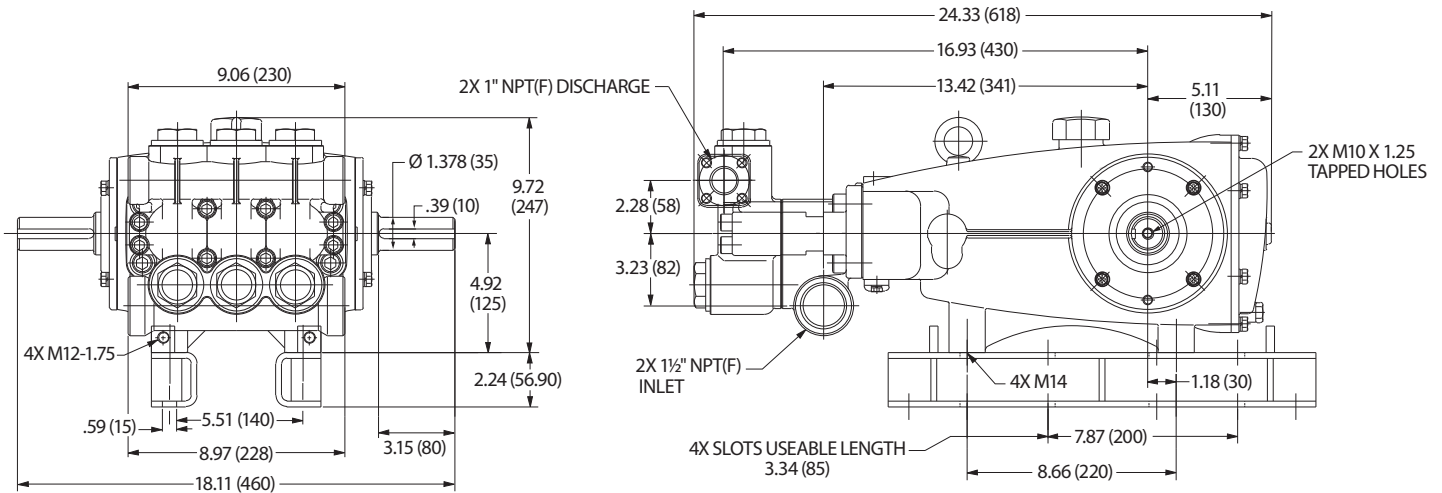
Models  
Stainless Steel 3521DHS, 3521C  
March 2022

## OPTIONAL PARTS AND ACCESSORIES

PART	DESCRIPTION	QTY
34021	Key (M10 x 8 x 70)	1
92674	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 (3/8" x 48") (Not Shown)	1
30696	Pliers, Reverse (Not Shown)	1
819000	Assembly, Crankcase, Cast Iron Conversion (Not Shown)	1

## SERVICE PARTS

PART	DESCRIPTION	QTY
<b>76841</b>	Seal Kit – Standard NBR	1
<b>34017</b>	Valve Kit – Standard NBR	2
6100	Oil, Case (12–21 oz bottles) (Fill to Specified Crankcase Capacity Prior to Start-up)	1
6124	Gasket, Liquid (3 oz)	1
6139	Lubricant, Anti-Seize (8 oz) (See Tech Bulletin 095)	1
818373	Head, Complete with NBR Seals and O-Rings (3521DHS)	1



Models 3521DHS, 3521C

### SEAL KITS One (1) seal kit required per pump

PUMP MODELS	NBR (STD)	FPM (.0110)	EPDM (.0220) ◆	IPFE (.0770)
3521DHS, 3521C	<b>76841*</b>	<b>76842</b>	<b>76843 *</b>	<b>76844 *</b>

ITEM (Included in Seal Kits)	DESCRIPTION				QTY	
97	11345	11375	701490	702961	O-Ring, Plunger Retainer	3
104	43875	44826	701656	702977	O-Ring, Inlet Adapter	3
106	44098	44827	48244	76298	Seal, Low-Pressure, with SS-Spring	3
112	11379	14183	701491	702705	O-Ring, Inlet Manifold	3
123	12391	13266	701657	703481	O-Ring, V-Packing Cylinder	3
127	44608	44829	44608	44608	V-Packing	6
158	48362	48362	48362	48362	Backup Ring, V-Packing Cylinder	3
159	48860	20137	701492	703159	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)
3521DHS, 3521C	<b>34017</b>	<b>31955</b>	<b>31952</b>	<b>76617</b>

ITEM (Included in Valve Kits)	DESCRIPTION				QTY	
162	48363	48363	48363	44614	Backup Ring, Valve Seat	3
163	26142	14330	701493	702808	O-Ring, Valve Seat	3
164	44612	44612	44612	44612	Seat, Stepped	3
166	44108	44108	44108	44108	Valve	3
167	44109	44109	44109	44109	Spring	3
168	44728	44728	44728	44728	Retainer, Spring	3
170	44729	44729	44729	44729	Washer, Spring Retainer	3
172	89827	11747	701494	703169	O-Ring, Valve Plug	3
173	48364	48364	48364	20388	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](http://www.catpumps.com/dynamic-literature/cautions-and-warnings) or can be requested directly from Cat Pumps.

#### WARRANTY

View the Limited Warranty online at [www.catpumps.com/literature/cat-pumps-limited-warranty](http://www.catpumps.com/literature/cat-pumps-limited-warranty)