

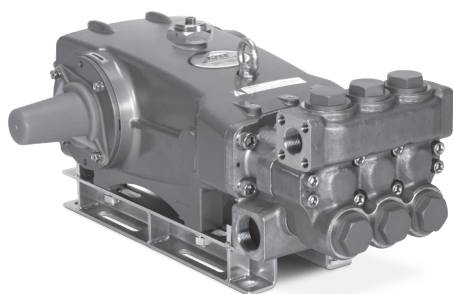
# DATA SHEET

## 35 FRAME PLUNGER PUMPS



**Stainless Steel Model:** **3521DHS.44101**

**Stainless Steel Flushed Model:** **3521CHS.44101**



Model 3521DHS.44101 Shown  
(Shaft protector included, mounting rails sold separately)

### FEATURES

- Field tested, high-pressure triplex pump is configured for high-temperature TEG (triethylene glycol) applications up to 240° F/115° C. May be used in other high-temperature applications with fluids possessing adequate lubrication properties. Contact Cat Pumps for more information.
- Positive displacement technology promotes optimum energy efficiency.
- TEG\* pump configuration option is designed to withstand high temperatures and demanding continuous-duty environments:
  - Elastomers and O-ring materials made from heat-resistant FPM material
  - Stainless steel vented oil filler cap assembly and aluminum seal retainers resist melting and misshaping
  - Stainless steel oil sight gauge with aluminum adapter holds up against higher-temperature drive-end operation
  - Special PTFE-blended V-packings and low-pressure seals increase durability and longevity with high-temperature fluids

\* TEG pump configuration is denoted by adding ".44101" to the end of the pump model.

SPECIFICATIONS	U.S.	Metric
Flow	25 gpm	94.6 lpm
Pressure Range	100–2000 psi	6.9–138 bar
Inlet Pressure Range	Flooded to 70 psi	Flooded to 4.8 bar
Pump RPM*	870 rpm	870 rpm
Bore	1.260"	32 mm
Stroke	1.890"	48 mm
Crankcase Capacity	4.2 qts	4 l
Max. Liquid Temperature	240° F	115° C
Inlet Ports (2)	1½" NPT(F)	1½" NPT(F)
Flush Ports (2) (Model CHS***)	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.

\*\*\* The flushed inlet manifold requires an external flush, which aids in cooling the seals when pumping high-temperature liquids and lubricating them when pumping low-lubricity liquids.

### ELECTRIC HORSEPOWER REQUIREMENTS

FLOW		PRESSURE								PUMP RPM	
GPM	LPM	PSI	BAR	PSI	BAR	PSI	BAR	PSI	BAR		
		1200	83	1500	103	1800	124	2000	138		
Horsepower											
25	94.6	20.5 hp		25.7 hp		30.8 hp		34.2 hp			870
20	76	16.5 hp		20.6 hp		24.7 hp		27.4 hp			696
18	68	14.8 hp		18.5 hp		22.2 hp		24.7 hp		626	

$$\frac{\text{DETERMINING THE PUMP RPM}}{\text{Rated gpm}} = \frac{\text{Desired gpm}}{\text{Rated rpm}}$$

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

$$\frac{\text{DETERMINING MOTOR PULLEY SIZE}}{\text{Motor Pulley OD}} = \frac{\text{Pump Pulley OD}}{\text{Pump rpm}}$$

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

## PARTS LIST

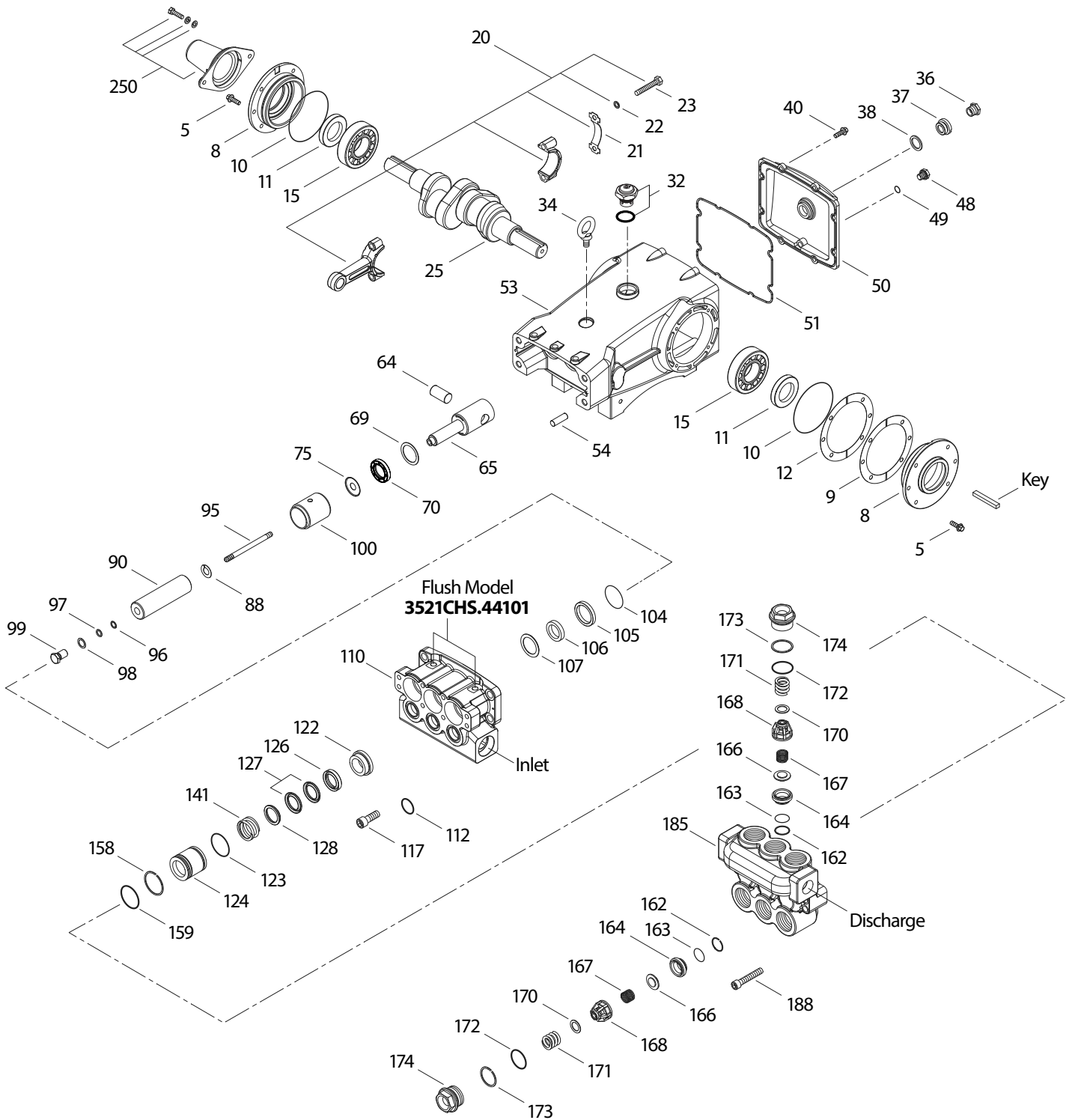
ITEM	PART NUMBER 3521DHS.44101 3521CHS.44101	MATL	DESCRIPTION	QTY
5	96049	S	Screw, HHC Sems (M10 x 25) (See Tech Bulletin 074)	8
8	134604	ALE	Cover, Bearing	2
9	815279	FBR	Shim, Split 2-Piece	2
10	76173	FPM	O-Ring, Bearing Cover	2
11	76172	FPM	Seal, Oil, Crankshaft	2
12	855049	S	Shim, Split 2-Piece	0-2
15	29326	STL	Bearing, Roller	2
20	126725	BZ	Rod, Connecting Assembly (Includes: 21, 22, 23) (See Tech Bulletin 074)	3
21	126749	STCP R	Washer, Locking	3
22	126593	STCP R	Shim, Washer (M10)	6
23	122045	STZP	Screw, HH (M10 x 55) (See Tech Bulletin 074)	6
25	29325	FCM	Crankshaft, Dual-End (M48)	1
32	997574	SS	Cap, Filler with O-Ring	1
34	126743	STCP R	Bolt, Eye (M12 x 1.75) (For Lifting Pump Only)	1
36	76792	SS	Gauge, Sight	1
37	76791	AL	Adapter, Sight	1
38	44428	NBR	Gasket, Flat, Adapter-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	30322	FPM	O-Ring, Drain Plug	1
50	45936	ALE	Cover, Rear	1
51	76174	FPM	O-Ring, Rear Cover-75D	1
53	134784	ALE	Crankcase Assembly (Includes: 54)	1
54	27488	S	Pin, Guide	2
64	43864	CM	Pin, Crosshead	3
65	49166	SSHB	Rod, Plunger	3
69	126587	STCP R	Washer, Oil Seal	3
70	44739	FPM	Seal, Oil, Crankcase	3
75	43865	S	Slinger, Barrier	3
88	45676	S	Washer, Keyhole	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	11375	FPM	O-Ring, Plunger Retainer	3
98	44085	SS	Gasket, Plunger Retainer	3
99	44084	SS	Retainer, Plunger (M10) (See Tech Bulletin 074)	3
100	999324	AL	Retainer, Seal	3
104	44826	FPM	O-Ring, Inlet Adapter-70D	3
105	45562	SS	Adapter, Inlet	3
106	76298	ST2	Seal, Low-Pressure with S-Spring	3
107	44101	SS	Washer, Low-Pressure Seal	3
110	<b>45365</b>	SS	Manifold, Inlet	1
	<b>125397</b>	SS	Manifold, Inlet, Flushed (1/4" Flush Ports) (Model 3521CHS.44101)	1
112	14183	FPM	O-Ring, Inlet Manifold	3
117	44585	S	Screw, HSH (M14 x 40) (See Tech Bulletin 074)	4
122	49782	SS	Spacer	3
123	13266	FPM	O-Ring, V-Packing Cylinder-70D	3
124	49783	SS	Cylinder, V-Packing	3
126	45564	SS	Adapter, Female	3
127	76608	ST4	V-Packing	6
128	45565	SS	Adapter, Male	3
141	49743	SS	Spring, Coil	3
158	20464	PTFE	Backup Ring, V-Packing Cylinder	3
159	20137	FPM	O-Ring, V-Packing Cylinder-70D	3
162	44614	PTFE	Backup Ring, Valve Seat	6
163	14330	FPM	O-Ring, Valve Seat	6
164	44612	SS	Seat	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	Spring, Coil	6
172	11747	FPM	O-Ring, Valve Plug-90D	6
173	20388	PTFE	Backup Ring, Valve Plug	6
174	49300	SSD	Plug, Valve	6
185	49299	SSD	Manifold, Discharge	1
188	89981	S	Screw, HSH (M12 x 70) (See Tech Bulletin 074)	8
250	855042	NY	Protector, Shaft with Two (2) Screws, Lockwashers and Washers	1

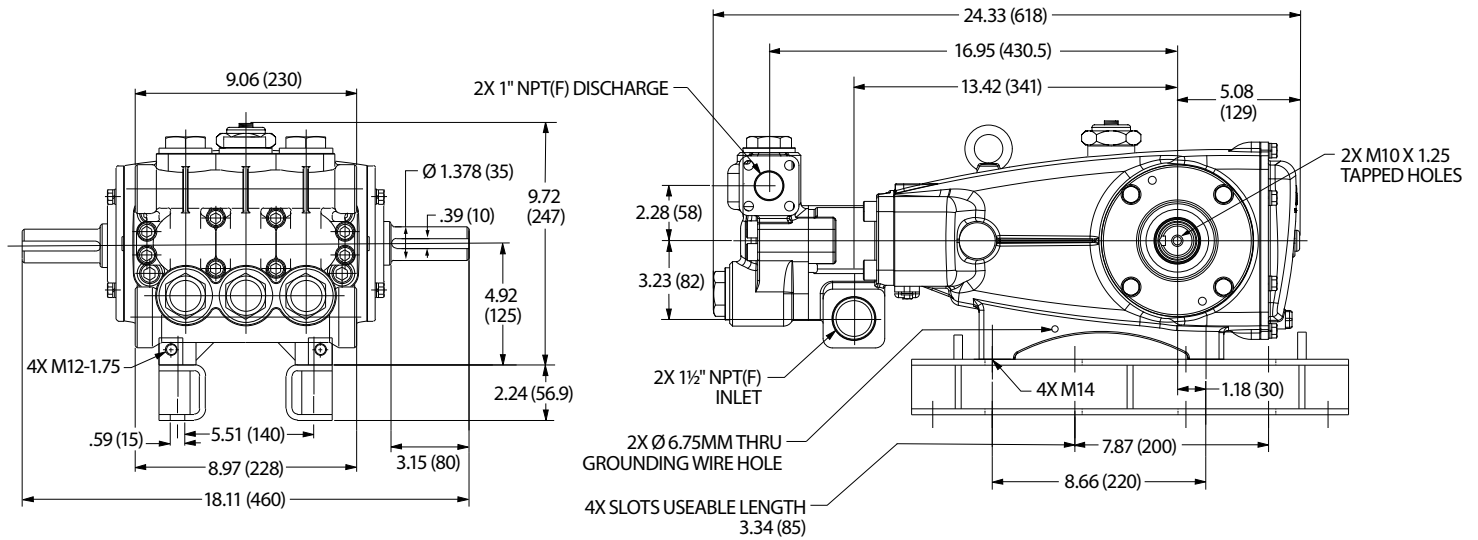
**Bold print part numbers are unique to a particular pump model** R Components comply with RoHS Directive.

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):

AL=Aluminum ALE=Aluminum Epoxy BB=Brass BZ=Bronze CC=Ceramic CM=Chrome-Moly FBR=Fiber FCM=Forged Chrome-moly FPM=Fluorocarbon  
 NBR=Medium Nitrile (Buna-N) NY=Nylon PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS SS=316SS SSD=Duplex Stainless Steel FPM  
 STL=Steel ST2=Special PTFE2 ST4=Special PTFE4 STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated SSHB=316SS/High Strength Brass ZP=Zinc Plated

# EXPLODED VIEW





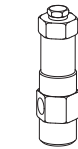
## REPAIR KITS AND PARTS

PART NUMBER	DESCRIPTION	QTY
77028*	Kit, Seal (Includes Items: 97, 104, 106, 112, 127, 158, 159)	1
77029	Kit, Valve (Includes Items: 162, 163, 164, 166, 167, 168, 170, 172, 173)	2
6107	Oil, Bottle (21 oz) (Fill to Specified Crankcase Capacity Prior to Start-up)	7
34021	Key (M10 x 8 x 70)	1
6139	Lubricant, Anti-Seize (8 oz) (See Tech Bulletin 095)	1

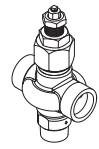
\*Review material codes for individual items (ST4 generally may be used as alternate).

## OPTIONAL PARTS AND ACCESSORIES

PART NUMBER	DESCRIPTION	QTY
7022.100	Regulator (Primary Pressure Control)	1
890709	Valve, Relief (Secondary Pressure Control)	1
9941.0110	Valve, Pop-Off (Secondary Pressure Control)	1
6073	Gauge, Pressure	1
6013	Dampener, Pulsation	1
76514	Mount, Rail Assembly (S) (Includes: 34039)	1
76074	Kit, Oil Indicator See Individual Data Sheet	1
34314	Kit, Oil Drain (3/8" x 24") See Individual Data Sheet	1
30696	Reverse Pliers (Not Shown)	1
44050	Tool, Sight Gauge Removal (Not Shown)	1



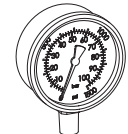
7022.100



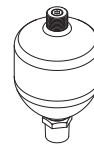
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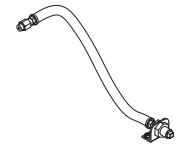
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6073



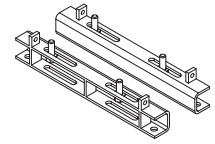
6013



34314



6107



76514

### ⚠ CAUTIONS AND WARNINGS

All high-pressure systems require a primary pressure regulating device (e.g. regulator, unloader) and a secondary pressure relief device (e.g. 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)