



Model 1540E Shown  
(Rails and shaft protector sold separately)

## 15 Frame Plunger Pump

**Standard Brass  
Model**

**1540E**

**Flushed  
Model**

**1540EC**

**Stainless Steel  
Model**

**1541**

### FEATURES

- Triplex design offers high efficiency and low pulsation.
- Durable high pressure seals are lubricated and cooled by pumped liquid.
- Pre-set Lo-Pressure Seals provide secondary protection against external leaks and require no packing adjustment.
- Special high density, polished, concentric plungers provide a true wear surface and extended seal life.
- Optional FPM elastomers for compatibility with many liquids and temperatures up to 200°F.
- Wet-end easily serviced without entering crankcase.

### SPECIFICATIONS

	U.S. Measure	Metric Measure
Flow .....	18.0 gpm	(68 lpm)
Pressure Range.....	100 to 1200 psi	(7 to 85 bar)
RPM .....	1100 rpm	(1100 rpm)
Inlet Pressure Range.....	Flooded to 70 psi	(Flooded to 4.9 bar)
Bore .....	1.181"	(30 mm)
Stroke.....	1.181"	(30 mm)
Crankcase Capacity.....	42 oz.	(1.26 l)
Maximum Liquid Temperature .....	140°F	(60°C)
Above 130°F call CAT PUMPS for inlet conditions and elastomer recommendations.		
Inlet Ports (2) .....	1" NPTF	(1" NPTF)
Flush Ports (2) (1540EC) .....	1/8" NPTF	(1/8" NPTF)
Discharge Ports (2) .....	3/4" NPTF	(3/4" NPTF)
Pulley Mounting .....	Either Side	(Either Side)
Shaft Diameter .....	1.181"	(30 mm)
Weight.....	42.6 lbs.	(21 kg)
Dimensions.....	14.57 x 13.0 x 7.20"	(370 x 330 x 183 mm)

### ELECTRIC HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE			RPM
			psi 800	psi 1000	psi 1200	
	U.S. gpm	lpm	bar 55	bar 70	bar 85	
<b>1540E</b>	18	68	9.9	12.3	14.8	1100
<b>1540EC</b>	18	68	9.9	12.3	14.8	1100
<b>1541</b>	18	68	9.9	12.3	14.8	1100

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

**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 [Includes: 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](http://www.catpumps.com/cautions-warnings) or can be requested directly from CAT PUMPS.

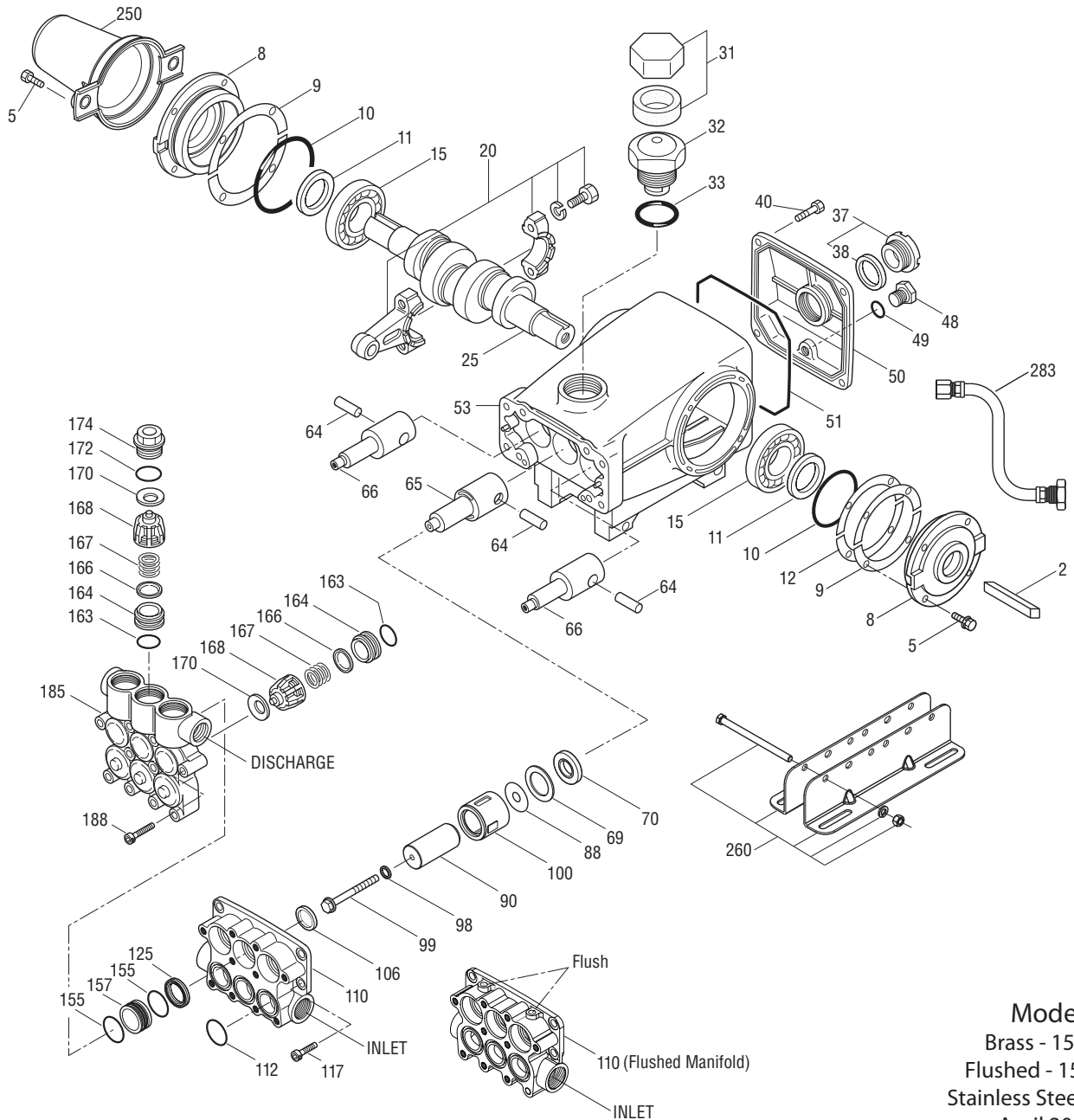
#### WARRANTY

View the Limited Warranty on-line at [www.catpumps.com/warranty](http://www.catpumps.com/warranty).

# PARTS LIST

ITEM	PART NUMBER		DESCRIPTION	QTY
	<b>1540E</b>			
	<b>1540EC MATL</b>	<b>1541 MATL</b>		
2	990036 STL	990036 STL	Key (M8x7x40) Use w/30059 and 990012	1
—	30067 STL	30067 STL	Key (M8x7.5x25) Use w/30059 "H" Hub	1
5	92538 S	92538 S	Screw, HHC Sems (M6x16)	8
8	<b>49535 ALE</b>	<b>43496 AL</b>	Cover, Bearing	2
9	815281 FBR	815281 FBR	Shim, Split 2-Pc	3
10	11340 NBR	11340 NBR	O-Ring, Bearing Cover - 70D	2
11	43495 NBR	43495 NBR	Seal, Oil, Crankshaft - 70D	2
12	814800 S	814800 S	Shim, Split, 2-Pc	2
15	39060 STL	39060 STL	Bearing, Roller	2
20	48600 TNM	48600 TNM	Rod, Connecting Assembly	3
25	43494 FCM	43494 FCM	Crankshaft, Dual-End (M30)	1
31	828710 PE	828710 PE	Protector, Oil Cap w/Foam Gasket	1
32	43211 ABS	43211 ABS	Cap, Oil Filler	1
33	14177 NBR	14177 NBR	O-Ring, Filler Cap - 70D	1
37	92241 —	92241 —	Gauge, Oil, Bubble w/Gasket - 80D	1
38	44428 NBR	44428 NBR	Gasket, Flat, Oil Gauge - 80D	1
40	92542 S	92542 S	Screw, HHC Sems (M6x20)	4
48	25625 STCP	25625 STCP	Plug, Drain (1/4"x19BSP)	1
49	23170 NBR	23170 NBR	O-Ring, Drain Plug - 70D	1
50	<b>49276 ALE</b>	<b>43491 AL</b>	Cover, Rear	1
51	44834 NBR	44834 NBR	O-Ring, Rear Cover - 70D	1
53	<b>49273 ALE</b>	<b>48925 AL</b>	Crankcase (Includes Guidepin)	1
64	43507 CM	43507 CM	Pin, Crosshead	3
65	<b>48933 SHS</b>	<b>49611 SS</b>	Rod, Plunger (Center)	1
66	<b>48931 SHS</b>	<b>49609 SS</b>	Rod, Plunger (Outside)	2
69	126596 STCP R	126596 STCP R	Washer, Oil Seal	3
70	43500 NBR	43500 NBR	Seal, Oil Crankcase - 80D	3
88	48937 S	48937 S	Washer, Flat	3
90	48938 CC	48938 CC	Plunger, Ceramic (M30x65)	3
98	46730 NBR	46730 NBR	Washer, Seal - 90D	3
	48394 FPM	48394 FPM	Washer, Seal - 90D	3
99	† 48201 SS	† 48201 SS	Retainer, Plunger	3
100	<b>48936 PVDF</b>	<b>48936 PVDF</b>	Retainer, Seal	3
106	<b>49067 SNG</b>	—	Seal, LPS w/S-Spg	3
	—	<b>49616 SNG</b>	Seal, LPS w/SS-Spg	3
	<b>702939 ST4</b>	—	Seal, w/NiH-Spg	3
110	<b>48940 FBB</b>	<b>49614 SS</b>	Manifold, Inlet	1
	<b>49853 FBB</b>	—	<i>Manifold, Inlet Flushed (1540EC)</i>	1
112	123903 NBR	123903 NBR	O-Ring, Inlet Manifold - 90D	3
	76903 FPM	76903 FPM	O-Ring, Inlet Manifold - 80D	3
117	49044 S	49044 S	Screw, HSH (M10x25)	4
125	<b>48944 SNG</b>	—	Seal, HPS w/S	3
	<b>49472 STG</b>	—	<i>Seal, HPS w/S</i>	3
	—	<b>49619 STG</b>	<i>Seal, HPS w/SS</i>	3
155	123903 NBR	123903 NBR	O-Ring, Spacer - 90D	6
	76903 FPM	76903 FPM	O-Ring, Inlet Manifold - 80D	6
157	<b>48946 BB</b>	<b>49621 SS</b>	Spacer, HPS	3
163	26143 NBR	26143 NBR	O-Ring, Seat - 80D	6
	14331 FPM	14331 FPM	O-Ring, Seat - 70D	6
164	<b>48951 S</b>	<b>49626 SS</b>	Seat	6
166	48686 SS	48686 SS	Valve	6
167	48687 SS	48687 SS	Spring, Valve	6
168	48994 PVDF	48994 PVDF	Retainer, Spring	6
170	<b>123764 S</b>	<b>49627 SS</b>	Washer, Spring Retainer	6
172	17629 NBR	17629 NBR	O-Ring, Valve Plug - 80D	3
	14183 FPM	14183 FPM	O-Ring, Valve Plug	3
174	<b>48952 FBB</b>	<b>49628 SS</b>	Plug, Valve	3
185	<b>48948 FBB</b>	<b>49623 SS</b>	Manifold, Discharge	1
188	87952 S	87952 S	Screw, HSH (M10x55)	10
250	<b>30764 NYR</b>	—	<i>Protector, Shaft w/2 Screws PN 125824</i>	1
	—	<b>30764S NY</b>	<i>Protector, Shaft w/2 Screws PN 92538</i>	1
260	30613 STZP	30613 STZP	<i>Mounting, Angle Rail</i>	1
269	30206 F	30206 F	<i>Pulley (10") [Tech Bulletin 003]</i>	1
270	30059 STL	30059 STL	<i>Hub, "H", M30 (Keyway M8) [See Tech Bulletin 003]</i>	1
	990012 STL	990012 STL	<i>Hub, "B", M30 (Keyway M8) [See Tech Bulletin 003]</i>	1
283	34334 —	34334 —	<i>Kit, Oil Drain (3/8" x 24")</i>	1

# EXPLODED VIEW



Model  
 Brass - 1540E  
 Flushed - 1540EC  
 Stainless Steel - 1541  
 April 2013

ITEM	PART NUMBER	DESCRIPTION	QTY
	<b>1540E</b>		
	<b>1540EC MATL</b>		
299	<b>816863 FBB</b>	<b>1541 MATL</b> <b>818443 SS</b> Head, Complete	1
300	<b>31770 NBR</b>	<b>31430 NBR*</b> Kit, Seal (Incls: 98,106,112,125,155)	1
	76430 FPM	76430 FPM Kit, Seal (Incls: 98,106,112,125,155) (.0110)	1
310	<b>31775 NBR</b>	<b>31450 NBR</b> Kit, Valve (Incls: 163,164,166,167,168,170,172)	2
	<b>76775 FPM</b>	<b>76450 FPM</b> Kit, Valve (Incls: 163,164,166,167,168,170,172) (.0110)	2
—	6107 —	6107 — Oil, Bottle (21 oz. Bottles) ISO-68 Hydraulic (Fill to specified crankcase capacity prior to start-up)	2
—	—	6119 — Lubricant, Antiseize (1 oz.)	1
—	701931 —	— — Sealant, Silicone (See Tech Bulletin 100)	1

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

†Production parts are different than replacement parts. R Components comply with RoHS Directive.

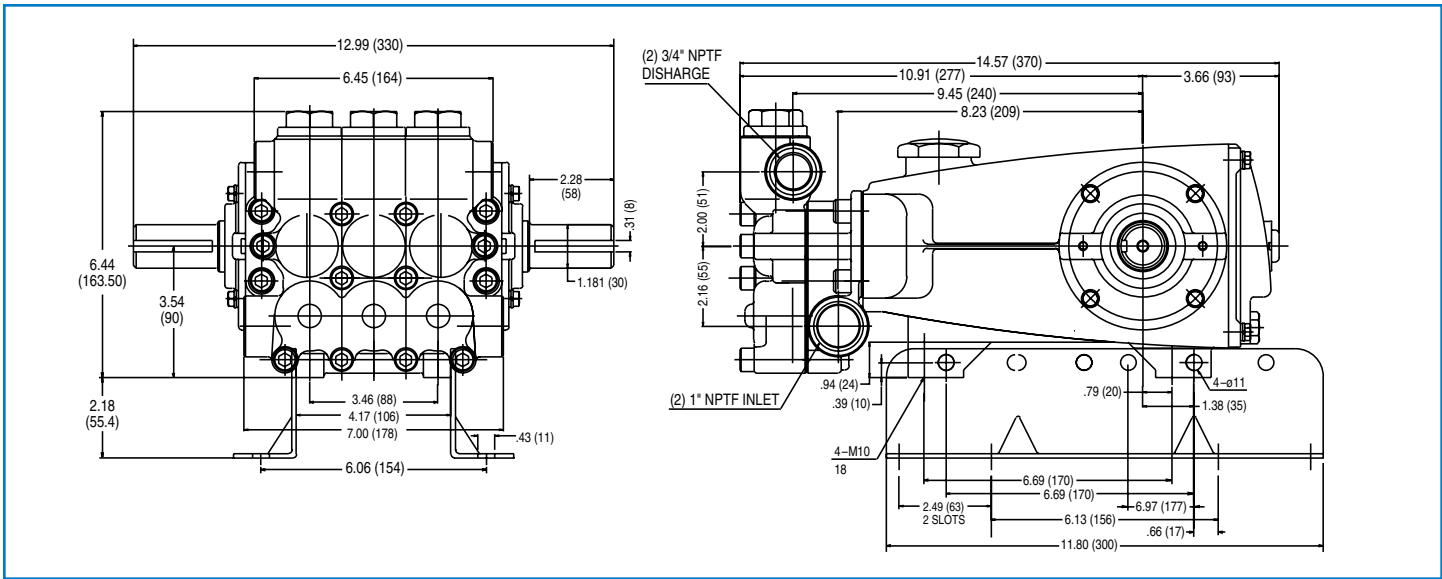
See Tech Bulletins 002, 003, 024, 035, 036, 043, 053, 074, 077, 083 and 100 for additional information.

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic ALE=Aluminum Epoxy BB=Brass CC=Ceramic CM=Chrome-moly F=Cast Iron

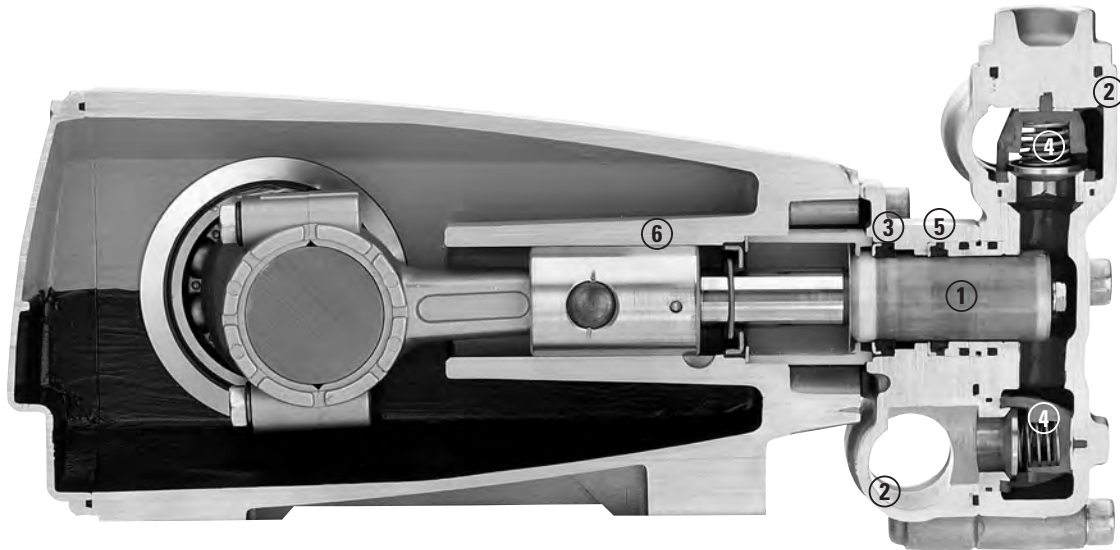
FBB=Forged Brass FCM=Forged Chrome-moly NBR=Medium N itrile (Buna-N) NY=Nylon PE=Polyethylene PVDF=Polyvinylidene Fluoride S=304SS

SHS=304SS/High Strength SS=316SS SNG=Special Blend (Buna) STG=Special Blend PTFE White ST4=Special PTFE 4 STCP=Steel/Chrome Plated STL=Steel

STZP=Steel/Zinc Plated TNM=Special High Strength



Models 1540E, 1540EC, 1541



- 1 Special concentric, high-density, polished, solid ceramic **plungers** provide a true wear surface and extended seal life.
- 2 **Manifolds** are a high strength forged brass or stainless steel 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 of seals.
- 4 Stainless steel **valves, seats and springs** provide corrosion-resistance, ultimate seating and extended life.
- 5 Specially formulated, Cat Pump exclusive, **Hi-Pressure Seals** offer unmatched performance and seal life.
- 6 Special flushed **inlet manifolds** permits external flush for added cooling with high temperature liquids and lubrication with low lubricity liquids. (1540EC)



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