

# DATA SHEET

## 35 FRAME PLUNGER PUMPS



**Standard and Flushed  
Brass**

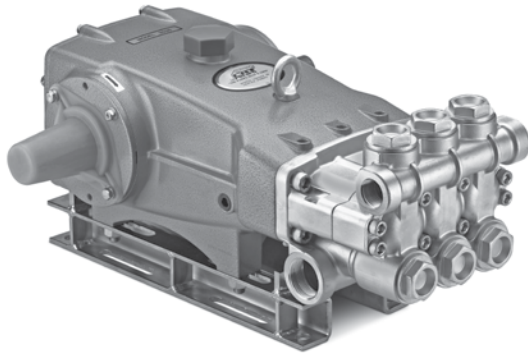
**3535, 3535C**

**Standard and Flushed  
Stainless Steel**

**3531D, 3531C**

**Nickel Aluminum  
Bronze**

**3537**



Model 3535 Shown  
(Mounting rails sold separately, shaft protector included)

### SPECIFICATIONS

	U.S. Measure	Metric Measure
Flow	36 gpm	136 lpm
Pressure Range	100 to 1200 psi	6.9 to 83 bar
Pump RPM*	800 rpm	800 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 high temp up to 200° F

Bore	1.575"	40 mm
Stroke	1.890"	48 mm
Crankcase Capacity	4.2 qts.	4 l
Inlet Ports (2)	1-1/2" NPT(F)	1-1/2" NPT(F)
Flush Ports (2) (3531C, 3535C)	1/4" NPT(F)	1/4" NPT(F)
Discharge Ports (2)	1" NPT(F)	1" NPT(F)
Pulley Mounting	Either Side	Either Side
Shaft Diameter	1.378"	35 mm
Weight	139 lbs.	63 kg
Dimensions (3535, 3535C)	23.89 x 18.11 x 9.72"	607 x 460 x 247 mm
Dimensions (3531D, 3531C, 3537)	24.33 x 18.11 x 9.72"	618 x 460 x 247 mm

\*Pump minimum is 100 RPM.

### 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 flushed inlet manifold on model 3535C permits external flush for added cooling with high temperature liquids or lubrication with low lubricity liquids.
- Standard NBR seals with alternative options for temperature and chemical compatibility.

### 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 Reference Document 99REF017 for inlet conditions and RPM at high temperature.

$$\text{DETERMINING THE PUMP R.P.M.} = \frac{\text{Rated gpm}}{\text{Rated rpm}} = \frac{\text{"Desired" gpm}}{\text{"Desired" rpm}}$$

$$\text{DETERMINING THE REQUIRED H.P.} = \frac{\text{Hp (Electric Brake)}}{\text{gpm x psi}} = \frac{1460}{1460}$$

$$\text{DETERMINING MOTOR PULLEY SIZE} = \frac{\text{Motor Pulley O.D.}}{\text{Pump rpm}} = \frac{\text{Pump Pulley O.D.}}{\text{Motor rpm}}$$

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

# PARTS LIST

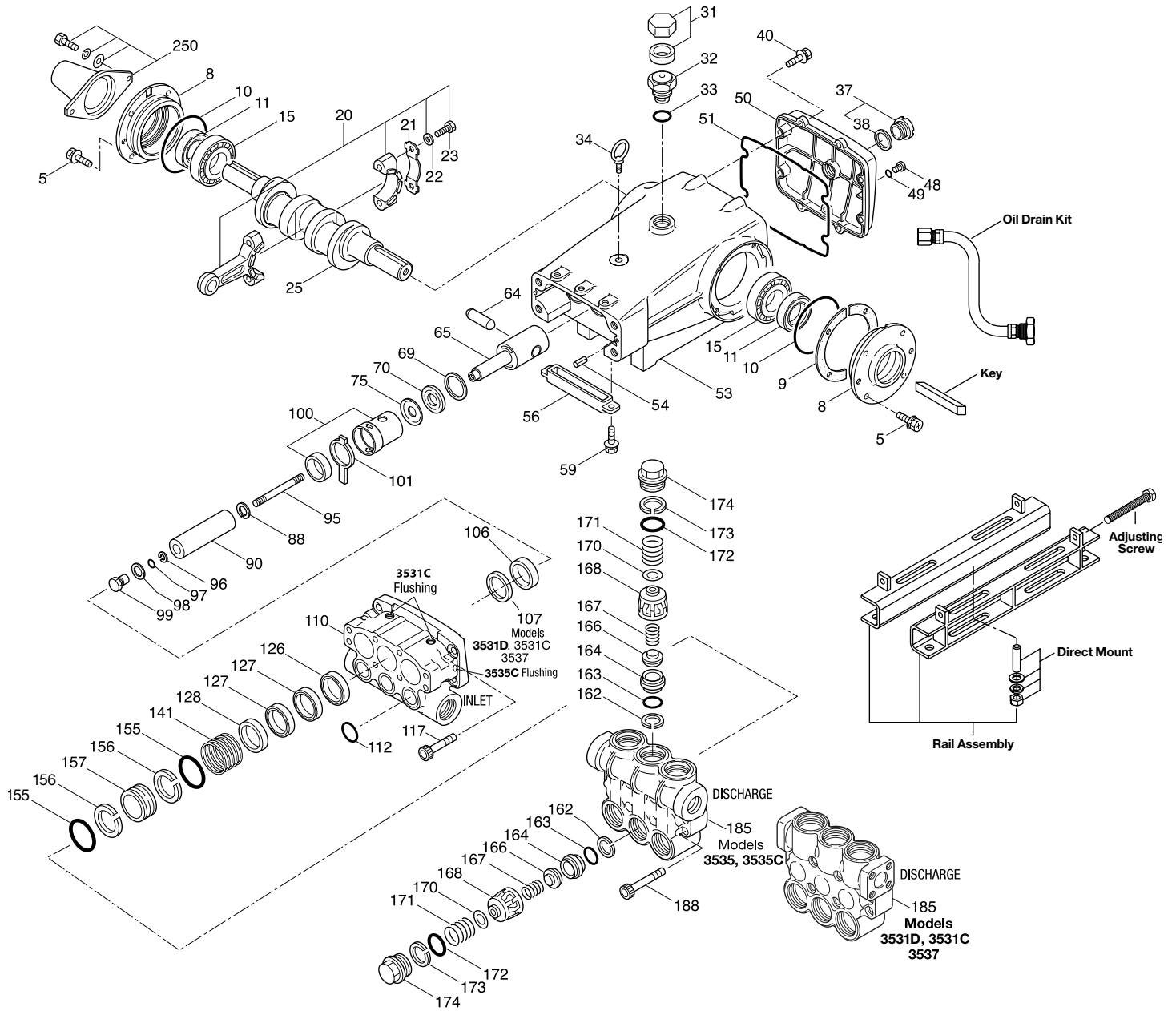
ITEM	PART NUMBER				DESCRIPTION	QTY		
	3535/C	MATL	3531D/C	MATL			3537	MATL
5	96049	S	96049	S	96049	S	Screw, HHC Sems (M10x25) (See Tech Bulletin 125) [06/18]	8
8	134604	AL	134604	AL	134604	AL	Cover, Bearing (See Tech Bulletin 118, 125) [06/18]	2
9	815279	FBR	815279	FBR	815279	FBR	Shim, Split 2-Pc (See Tech Bulletin 125) [06/18]	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	Locking Washer (M10)	3
22	126593	STCP R	126593	STZP R	126593	STZP R	Washer, Flat (M10.5)	6
23	122045	STZP	122045	STZP	122045	STZP	Screw, HH (M10x55)	6
25	29325	FCM	29325	FCM	29325	FCM	Crankshaft, Dual End (M48)	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	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 (See Tech Bulletin 118)	1
51	16612	NBR	16612	NBR	16612	NBR	O-Ring, Crankcase Cover - 70D	1
53	134784	AL	134784	AL	134784	AL	Crankcase Assy (Incls: 34, 54) (See Tech Bulletin 118, 125) [06/18]	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
75	43865	S	43865	S	43865	S	Slinger, Barrier	3
88	45676	S	45676	S	45676	S	Washer, Keyhole (M16)	3
90	43921	CC	43921	CC	43921	CC	Plunger (M40x145)	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
98	44085	SS	44085	SS	44085	SS	Gasket, Retainer	3
99	† 44084	SS	44084	SS	44084	SS	Retainer, Plunger (M10)	3
100	814279	PVDF	814279	PVDF	814279	PVDF	Retainer, Seal, 2 Pc. (See Tech Bulletin 105)	3
101	44112	—	44112	—	44112	—	Wick, Long Tab	3
106	† 44113	NBR	44113	NBR	44113	NBR	Seal, LPS w/SS-Spg	3
107	—	—	<b>45381</b>	SS	<b>44115</b>	NAB	Spacer, Lo-Pressure Seal	3
110	<b>49464</b>	BBCP R	<b>45365</b>	SS	<b>45124</b>	NAB	Manifold, Inlet	1
	<b>49464C</b>	BBCP R	<b>125397</b>	SS	—	—	<i>Manifold, Inlet, Flushed (1/4" Flush Ports)</i>	1
112	11379	NBR	11379	NBR	11379	NBR	O-Ring, Inlet Manifold - 70D	3
117	44585	S	44585	S	44585	S	Screw, HSH (M14x40)	4
126	<b>46494</b>	BB	<b>48391</b>	D	<b>48391</b>	D	Adapter, Female (See Tech Bulletin 087)	3
	—	—	<b>45367</b>	SS	<b>45367</b>	SS	<i>Adapter Female</i>	3
127	44609	STG	44609	STG	44609	STG	V-Packing	6
128	<b>43928</b>	BB	<b>45368</b>	SS	<b>45368</b>	SS	Adapter, Male	3
141	49519	SS	49519	SS	49519	SS	Spring, Large Coil (See Tech Bulletin 108)	3
155	48860	NBR	48860	NBR	48860	NBR	O-Ring, V-Packing Spacer - 90D	6
156	48362	D	48362	D	48362	D	Back-up-Ring, V-Packing Spacer	6
157	<b>49478</b>	BB	<b>49520</b>	SS	<b>49521</b>	NAB	Spacer, V-Packing (See Tech Bulletin 108)	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
164	<b>44727</b>	S	<b>44612</b>	SS	<b>44612</b>	SS	Seat, Stepped	6
166	<b>43932</b>	S	<b>44108</b>	SS	<b>44108</b>	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
173	48364	D	48364	D	48364	D	Back-up-Ring, Valve Plug	6
174	<b>46444</b>	FBB	<b>49300</b>	SSD	<b>44643</b>	NAB	Plug, Valve	6
185	<b>49465</b>	BBCP R	<b>49299</b>	SSD	<b>76335</b>	NAB	Manifold, Discharge (See Tech Bulletin 099 and 109)	1
188	89981	S	89981	S	89981	S	Screw, HSH (M12x70)	8
250	855042	NY	855042	NY	855042	NY	Protector, Shaft w/2 Screws, Lockwashers and Washers (Included With Pump) (See Tech Bulletin 125) [06/18]	1

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

◆Silicone oil/grease required. †Production parts differ from service parts.\* Review individual parts in each kit for material identification. R Components comply with RoHS Directive View Tech Bulletins: 024, 035, 036, 040, 041, 043, 050, 052, 053, 069, 074, 083, 095, 099, 105, 108, 109, 118, 125 and 127 for additional information. See Service Bulletin 001.

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 FBB=Forged Brass FBR=Fiber FCM=Forged Chrome-moly FPM=Fluorocarbon NAB=Nickel Aluminum Bronze NBR=Medium Nitrile (Buna-N) NBR5=Buna, Silicone Free NY=Nylon PE=Polyethylene POP=Polypropylene PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS SS=316SS SSD=Duplex Stainless Steel SSZZ=316SS/Zamak STCP=Steel/Chrome Plated SFG=Special Blend (FPM) STG=Special Blend (PTFE) White STL=Steel STZP=Steel/Zinc Plated TNM=Special High Strength ZP=Zinc Plated

# EXPLODED VIEW



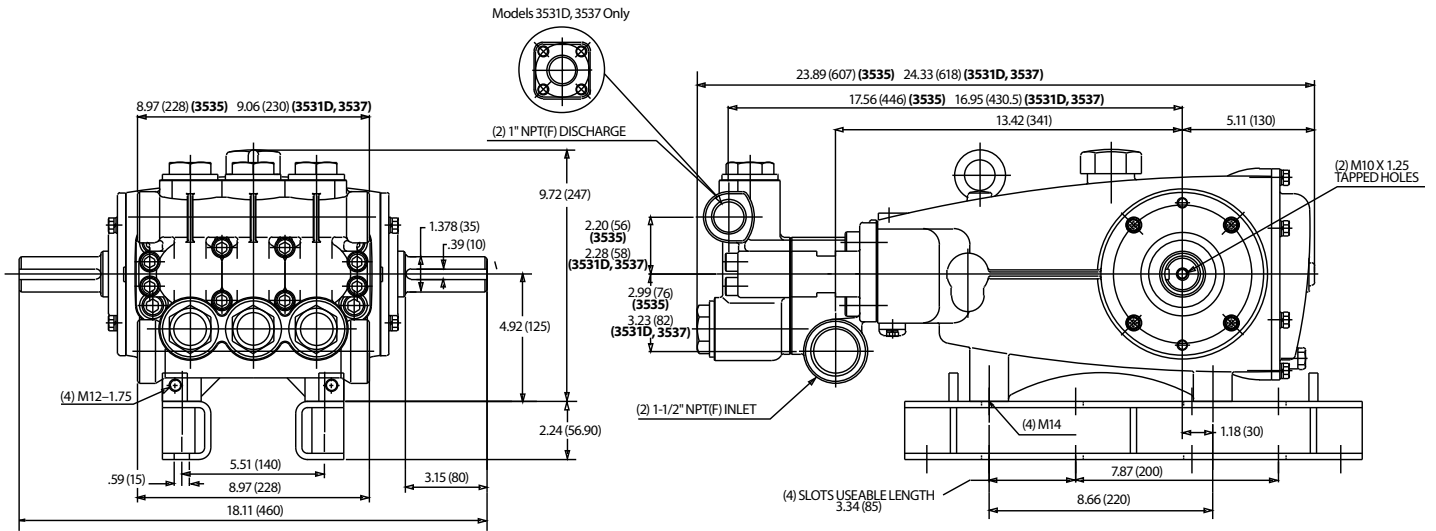
Models  
 Brass and Flushed - 3535, 3535C  
 SS and Flushed - 3531D, 3531C  
 NAB and Flushed - 3537  
 September 2018

## OPTIONAL PARTS AND ACCESSORIES

PART	DESCRIPTION	QTY
31040	Kit, Seal - Standard NBR	1
<b>34235</b>	Kit, Valve (3535,3535C) - Standard NBR	2
<b>34017</b>	Kit, Valve (3531D,3531C,3537) - Standard NBR	2
92674	Mount, Rail Assembly (STZP R)	1
76514	Mount, Rail Assembly (S)	1
34018	Mount, Direct (STZP R)	1
34039	Mount, Direct (S)	1
990013	Hub, "B", 35 mm (STL)	1
80540	Screw, Adjusting M12 x 100	1
30278	Oiler (1 oz) (Not Shown)	3
34314	Kit, Oil Drain	1
30696	Plier, Reverse	1

## SERVICE PARTS

PART	DESCRIPTION	QTY
6100	Oil, Case (12 - 21 oz. bottle)	1
34021	Key, M10 x 8 x 70	1
6119	Lubricant, Anti-Seize (2 oz) (3531D, 3531C)	1
6124	Gasket, Liquid (3 oz)	1
<b>818427</b>	Head, Complete - 3535 w/NBR Seals and O-Rings	1
<b>818372</b>	Head, Complete - 3531D w/NBR Seals and O-Rings	1
<b>814522</b>	Head, Complete - 3537 w/NBR Seals and O-Rings	1
819000	Assy, Crankcase, Cast Iron Conversion	1



Models 3535, 3535C, 3531D, 3531C, 3537

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

PUMP MODELS	NBR (STD)	FPM (.0110)	EPDM (.0220)◆
3535, 3535C, 3531D, 3531C, 3537	31040 *	33055	33262 *

ITEM (Included in Seal Kits)				DESCRIPTION	QTY
97	11345	11375	701490	O-Ring, Plunger Retainer	3
106	44113	44740	46955	Seal, LPS w/SS-Spg	3
112	11379	14183	701491	O-Ring, Inlet Manifold	3
127	44609	44741	44609	V-Packing	6
155	48860	20137	701492	O-Ring, V-Packing Spacer	6
156	48362	48362	48362	Backup-Ring, V-Packing Spacer	6

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

## VALVE KITS Two (2) valve kits required per pump

PUMP MODELS	NBR (STD)	FPM (.0110)	EPDM (.0220)◆
3535, 3535C	34235	31955	31952
3531D, 3531C, 3537	34017	31955	31952

ITEM (Included in Valve Kits)				DESCRIPTION	QTY
162	48363	48363	48363	Backup-Ring, Valve Seat	3
163	26142	14330	701493	O-Ring, Valve Seat	3
164	44727			Seat (3535,3535C)	3
		44612	44612	Seat (3531D,3531C,3537)	3
166	43932			Valve (3535,3535C)	3
		44108	44108	Valve (3531D,3531C,3537)	3
167	44109	44109	44109	Spring	3
168	44728	44728	44728	Retainer, Spring	3
170	44729	44729	44729	Washer, Spring Retainer	3
172	89827	11747	701494	O-Ring, Valve Plug	3
173	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/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).