

35 Frame Plunger Pump

Forged Brass Model

3545

Stainless Steel Model

3541

FEATURES

Superior Design

- Triplex plunger design gives smoother liquid flow.
- V-Packings are completely lubricated and cooled by the liquid being pumped.
- Inlet and discharge valve assemblies interchange for easier maintenance.
- Lubricated Lo-Pressure Seal provides double protection against external leakage.
- Oil bath crankcase assures optimum lubrication.
- Close tolerance concentricity of the ceramic plunger maximizes seal life.

Quality Materials

- All stainless steel valves are heat treated and seats are roller burnished for a positive seal and extended valve life.
- Forged brass and 316L stainless steel manifolds for strength and corrosion resistance.
- Special concentric, high density, polished, graphite impregnated, solid ceramic plungers are abrasion resistant and result in extended seal life.
- Specially formulated, CAT PUMP exclusive, V-Packings offer unmatched performance and seal life.
- Die cast aluminum crankcase provides high strength, minimum weight and precision tolerance control.
- Chrome-moly crankshaft gives unmatched strength and surface hardness.
- Oversized crankshaft bearings with greater loading capacity means longer bearing life.

Easy Maintenance

- Wet-end is easily serviced without entering crankcase, requiring less time and effort.
- Valve assemblies are accessible without disturbing piping, for quick service.
- Preset packings mean no packing gland adjustment is necessary, reducing maintenance costs.

CAUTION

All systems require both a primary pressure regulating device (i.e., regulator, unloader) and a secondary pressure safety relief device (i.e., pop-off valve, safety valve). Failure to install such relief devices could result in personal injury or damage to the pump or to system components. CAT PUMPS does not assume any liability or responsibility for the operation of a customer's high pressure system.

SPECIFICATIONS

	U.S. Measure	Metric Measure
Flow.....	45 GPM	(170 L/M)
Pressure Range.....	100 to 1000 PSI	(7 to 70 BAR)
Inlet Pressure Range	Flooded to 70 PSI	(Flooded to 4.9 BAR)
RPM	800 RPM	(800 RPM)
Bore.....	1.772"	(45 mm)
Stroke.....	1.890"	(48 mm)
Crankcase Capacity.....	4.2 Qts.	(4 L)
Maximum Liquid Temperature	140°F	(60°C)
Inlet Ports (2)	1-1/2" NPTF	(1-1/2" NPTF)
Discharge Ports (2).....	1" NPTF	(1" NPTF)
Pulley Mounting	Either Side	(Either Side)
Shaft Diameter	1.378"	(35 mm)
Weight.....	139 lbs.	(63 kg)
Dimensions.....	24.11 x 18.11 x 9.72"	(612.5 x 460 x 247 mm)

HORSEPOWER REQUIREMENTS

FLOW		PRESSURE			RPM
		PSI 800	PSI 900	PSI 1000	
U.S. GPM	L/M	BAR 55	BAR 63	BAR 70	
45	170	24.7	27.8	30.9	800
40	151	22.0	24.7	27.4	712
35	133	19.2	21.6	24.0	622

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

DETERMINING THE REQUIRED H.P. $\frac{\text{GPM x PSI}}{1460} = \text{Electric Brake H. P. Required}$

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

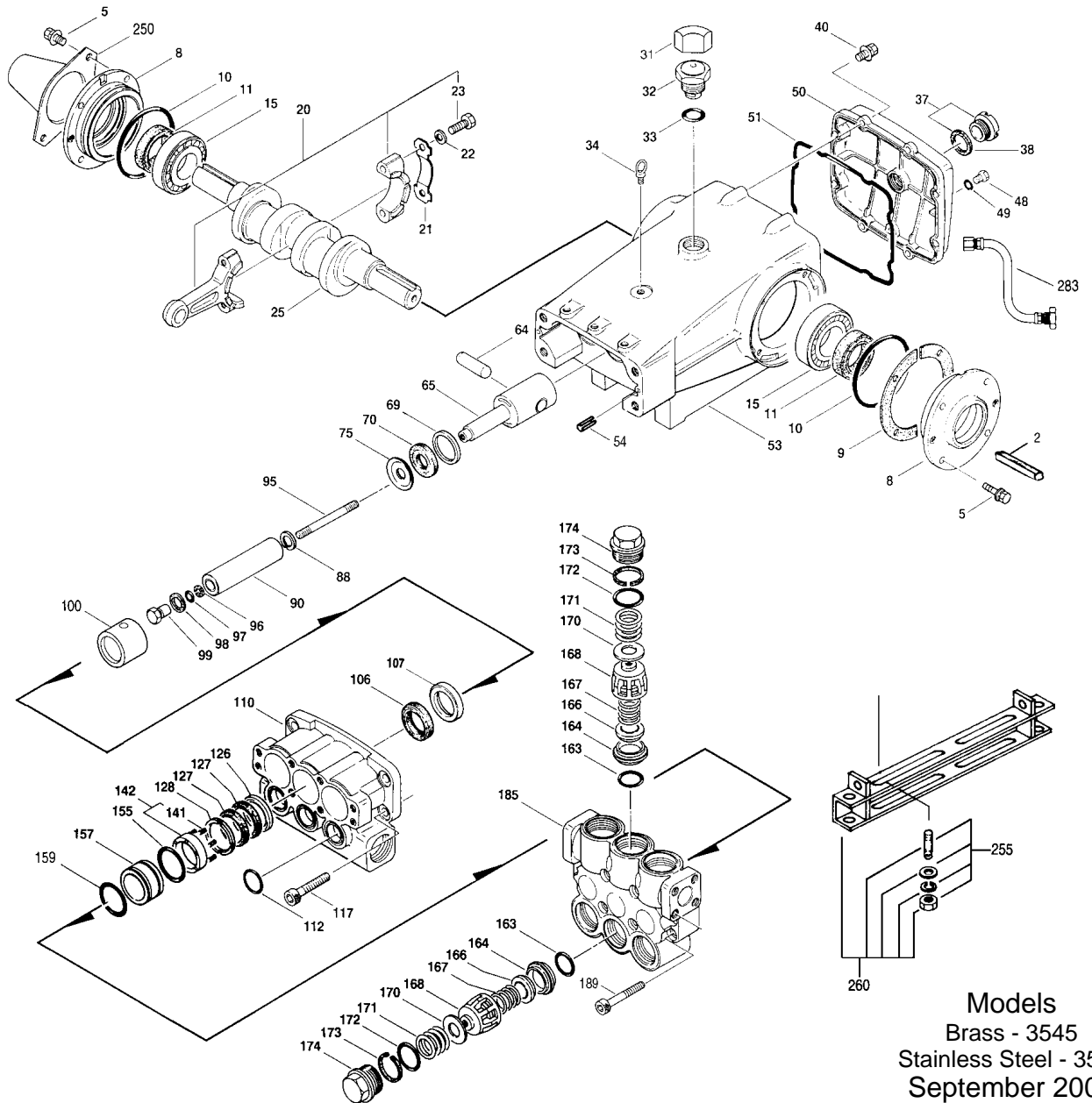
See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 003.
Refer to pump Service Manual for repair procedure and additional technical information.

"Customer confidence is our greatest asset"

PARTS LIST

ITEM	PART NUMBER		MATL		DESCRIPTION	QTY
● 2	3545	30055	3541	30055	Key (M10x6x32)	1 ●
● 5		34021		34021	Key (M10x8x70)	1 ●
8		118824		118824	Screw, HH Sems (M8x25)	8
● 9		44542		44542	Cover, Bearing	2
10		701138		701138	Cover, Bearing (Use w/701139, 40, 45, 47, 428)	2 ●
11		44543		44543	Shim, Bearing Cover	4
15		12398		12398	O-Ring, Bearing Cover - 70D	2
20		13296		13296	Seal, Oil, Crankshaft	2
21		29326		29326	Bearing, Roller	2
22		121467		121467	Rod, Connecting Assembly [10/00]	3
23		44940		44940	Washer, Locking (M10)	3
25		43641		43641	Washer (M10.5x1.5)	6
31		88155		88155	Screw, HH (M10x60F) Replace as a set	3
32		29325		29325	Crankshaft, Dual End	1
33		828710		828710	Protector, Cap	1
34		43211		43211	Cap, Oil Filler	1
35		14177		14177	O-Ring, Oil Filler Cap - 70D	1
36		44319		44319	Bolt, Eye (M12)	1
37		701145		701145	Rivet, Serial Plate (Use w/701138, 39, 40, 47, 428)	4
38		701147		701147	Name Plate (Use w/701138, 39, 40, 45, 428)	1
40		92241		92241	Gauge, Oil, Bubble w/Gasket - 80D	1
48		44428		44428	Gasket, Flat	1
49		118824		118824	Screw, HH Sems (M8x25)	8
50		25625		25625	Plug, Drain (1/4"x19 BSP)	1
51		23170		23170	O-Ring, Drain Plug - 70D	1
53		45936		45936	Cover, Rear	1
54		701139		701139	Cover, Rear (Use w/701138, 40, 45, 47, 428)	1 ●
64		16612		16612	O-Ring, Rear Cover - 70D	1
65		44559		44559	Crankcase w/Guide Pins	1 ●
66		701428		701428	Crankcase (Use w/701138, 39, 40, 45, 47)	1 ●
69		27488		27488	Pin, Guide	2
70		43864		43864	Pin, Crosshead	3
75		45116		45116	Rod, Plunger	3
88		29338		29338	Washer, Oil Seal	3
90		100488		100488	Seal, Oil, Crankcase	3
95		44739		44739	Seal, Oil, Crankcase	3
96		43865		43865	Slinger, Barrier	3
97		45676		45676	Washer, Keyhole (M16)	3
106		46806		46806	Plunger (M45x145)	3
107		89778		89778	Stud, Plunger Retainer (M10x135)	3
110		20189		20189	Back-up-Ring, Plunger Retainer	3
112		11345		11345	O-Ring, Plunger Retainer - 70D	3
117		11375		11375	O-Ring, Plunger Retainer	3
126		701490		701490	O-Ring, Plunger Retainer	3
127		44085		44085	Gasket, Plunger Retainer	3
128		44084		44084	Retainer, Plunger (M10)	3
141		44119		44119	Retainer, Seal	3
142		46809		—	Seal, LPS w/S-Spg	3
155		—		48384	Seal, LPS w/SS-Spg	3
157		702013		702013	Seal, LPS w/SS-Spg	3
159		46945		46945	Seal, LPS w/SS-Spg	3
163		46811		48380	Spacer, LPS	3
164		46808		48375	Manifold, Inlet	1 ●
166		18688		18688	O-Ring, Inlet Manifold - 70D	3
167		11739		11739	O-Ring, Inlet Manifold	3
168		701659		701659	O-Ring, Inlet Manifold - 70D	3
169		44585		44585	Screw, HSH (M14x40)	4
170		46812		48383	Adapter, Female	3
171		46813		46813	V-Packing	6
172		46814		48386	Adapter, Male	3
173		45113		45113	Spring, Coil	6/18
174		46824		48382	Spacer w/Coil Springs	3
175		17784		17784	O-Ring, Spacer - 80D	3
176		20138		20138	O-Ring, Spacer - 80D	3
177		701658		701658	O-Ring, Spacer - 80D	3
178		46816		48381	Spacer, V-Packing	3
179		17784		17784	O-Ring, Spacer - 80D	3
180		20138		20138	O-Ring, Spacer - 80D	3
181		701658		701658	O-Ring, Spacer - 80D	3
182		26143		26143	O-Ring, Seat - 80D	6
183		14331		14331	O-Ring, Seat	6
184		701660		701660	O-Ring, Seat	6
185		46822		48393	Seat	6
186		43932		44108	Valve	6
187		44109		44109	Spring, Valve	6
188		44728		44728	Retainer, Spring	6
189		44729		44729	Washer, Spring Retainer	6
190		44644		44644	Coil Spring (70kg), Valve Plug	6
191		89827		89827	O-Ring, Valve Plug - 90D	6
192		11747		11747	O-Ring, Valve Plug - 90D	6
193		701494		701494	O-Ring, Valve Plug - 70D	6
194		48364		48364	Back-up-Ring, Valve Plug	6
195		46444		48419	Plug, Valve	6

EXPLODED VIEW



Models
 Brass - 3545
 Stainless Steel - 3541
 September 2001

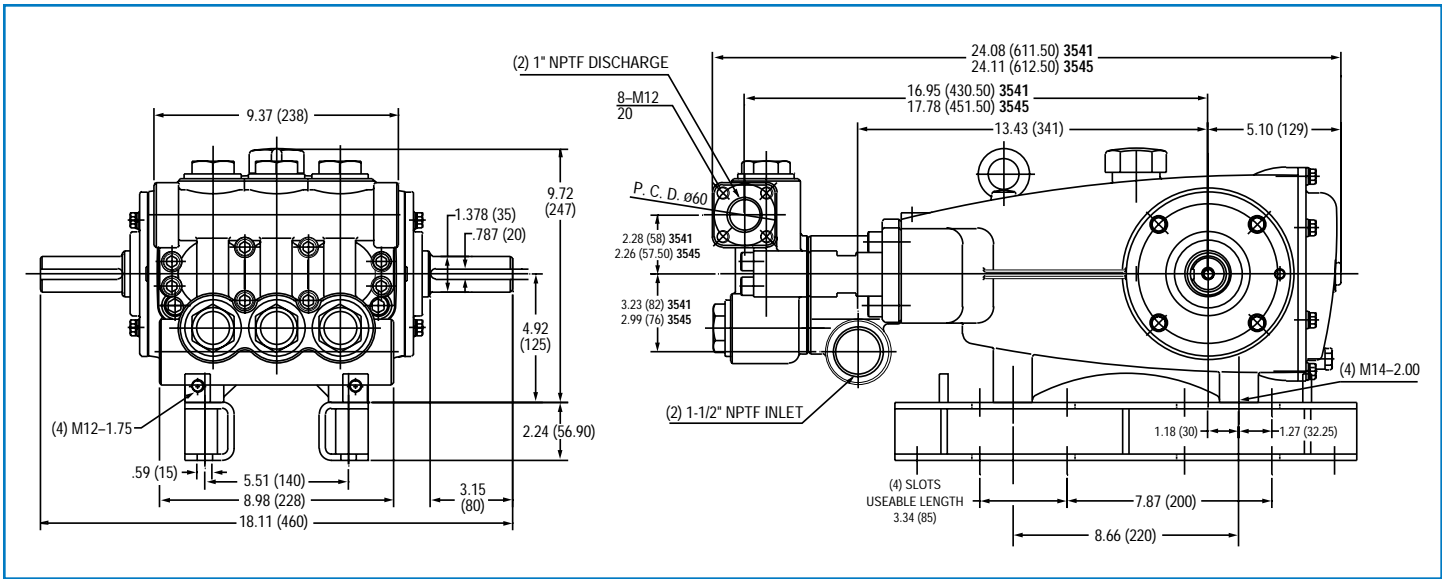
	3545	MATL	3541	MATL			
●	185	46820	BBCP	48376	SS	Manifold, Discharge	1 ●
●	189	89981	S	89981	S	Screw, HSH (M12x70)	8 ●
●	250	44516	NY	44516	NY	Protector, Shaft w/2 89283 Screws (Included with Pump)	1 ●
●	255	701140	F	701140	F	Protector, Shaft (Use w/701138, 39, 45, 47, 428)	1 ●
●	260	34039	SS	34039	SS	Kit, Stud Mount	1 ●
●	275	92674	STZP	92674	STZP	Assy, Box Mounting	1 ●
●	283	990013	STL	990013	STL	Hub, "B", (M35), (Keyway M10x8x70) [See Drive Packages Tech Bulletin 003]	1 ●
●	283	34334		34334		Kit, Oil Drain	1 ●
●	290	6104		6104		Gasket, Liquid (1 oz.)	1 ●
●	299	814834	BBCP	816669	SS	Head, Complete	1 ●
●	300	33234	NBR*	33834	NBR*	Kit, Seal (Incls: 97, 106, 112, 127, 155, 159)	1 ●
●	310	31261	FPM	31261	FPM	Kit, Seal (Incls: 97, 106, 112, 127, 155, 159)	1 ●
●	310	◆ 33223	EPDM*	◆ 33223	EPDM*	Kit, Seal (Incls: 97, 106, 112, 127, 155, 159)	1 ●
●	310	33235	NBR	33835	NBR	Kit, Valve (Incls: 163, 164, 166, 167, 168, 170, 172, 173)	2 ●
●	310	31262	FPM	31262	FPM	Kit, Valve (Incls: 163, 164, 166, 167, 168, 170, 172, 173)	1 ●
●	310	◆ 31235	EPDM	◆ 31264	EPDM	Kit, Valve (Incls: 163, 164, 166, 167, 168, 170, 172, 173)	1 ●
●	—	714500	SS	714500	SS	C.A.T. (For R.O. or Industrial Applications)	1 ●
●	—	714506	SS	714506	SS	Adapter, 1-1/2" (2 per C.A.T.) (See Data Sheet for complete selection)	2 ●
●	—	6565.3		6565.3		Plunger Pump Service Video	1 ●

● Industrial discount. **Bold print part numbers are unique to a particular pump model.** *Italics are optional items.* ◆ Silicone oil/grease required
 [] Date of latest production change. * Review material codes for individual items (STG and SFTB generally may be used as alternates).

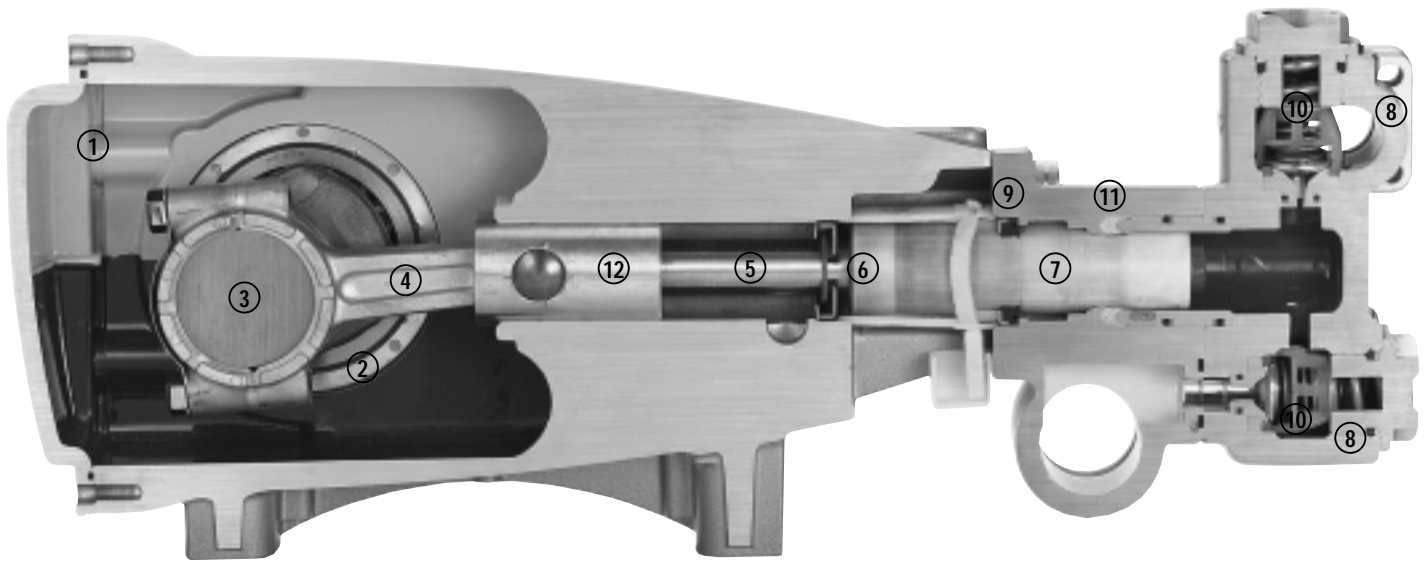
Pressurized Inlet and C.A.T. highly recommended for Hi-Temp, R.O. and industrial applications.

See Tech Bulletins 002, 003, 024, 036, 041, 043, 053, 074, 077 and 083 for additional information. † Production Parts Nickel Aluminum Bronze or 304SS, Replacement Parts are 316SS

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum BB=Brass Plated CC=Ceramic CM=Chrome-Moly D=Delrin®
 EPDM=Ethylene Propylene Diene Monomer F=Cast Iron FBB=Forged Brass FBR=Fiber FCM=Forged Chrome-moly FPM=Fluorocarbon (Viton®)
 NBR=Medium Nitrile (Buna-N) NBRs=Buna, Silicone Free NY=Nylon PTFE=Pure Teflon® PVDF=Fluoroplastic (High Strength) S=304SS SS=316SS
 SFTB=Special Blend (Teflon®) Black SSNP=316SS/Nickel Plated SSZZ=316SS/Zamak STG=Special Blend (Teflon®) White STL=Steel
 STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated TNM=Special High Strength



Models 3545, 3541



- 1 Die cast aluminum **crankcase** means high strength, lightweight, and excellent tolerance control.
- 2 Oversized crankshaft **bearings** provide extended bearing life and pump performance.
- 3 Chrome-moly **crankshaft** provides unmatched strength and surface hardness for long life.
- 4 Matched oversized high strength **connecting rods** are noted for superior strength and bearing quality.
- 5 Special stainless steel **plunger rods** with high strength crossheads for longevity and corrosion resistance.
- 6 The stainless steel **slinger** provides back-up protection for the crankcase seal, keeping pumped liquids out of the crankcase.
- 7 Special concentric, high density, polished, graphite impregnated, solid ceramic **plungers** are abrasion resistant and result in extended seal life.
- 8 **Manifolds** are a high tensile strength forged brass or 316 stainless steel for long term, continuous duty.
- 9 100% wet **seal** design adds to service life by allowing pumped liquids to cool and lubricate on both sides.
- 10 Stainless steel **valves, seats and springs** provide corrosion-resistance, positive seating and long life.
- 11 Specially formulated, CAT PUMP exclusive, **V-Packings** offer unmatched performance and seal life.
- 12 **Crossheads** are 360° supported for uncompromising alignment.

Products described hereon are covered by one or more of the following U.S. patents 3558244, 3652188, 3809508, 3920356, 3930756 and 5035580

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