

35 Frame Plunger Pump

Forged Brass Model

3545

Stainless Steel Model

3541

SS Flushed Model

3541C

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

- Precision design 304 and 316 stainless steel valves and seats are hardened and polished for ultimate seating and extended valve life.
- Forged brass, 316 stainless steel and duplex stainless steel manifolds for strength and corrosion resistance.
- Special concentric, high-density, polished, solid ceramic plungers provide a true wear surface and 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.

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	765 RPM	(765 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)
Above 130°F call CAT PUMPS for inlet conditions and elastomer recommendations.		
Inlet Ports (2)	1-1/2" NPTF	(1-1/2" NPTF)
Flushing Ports (2) (3541C)	1/4" NPTF	(1/4" 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)

ELECTRIC 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	765
40	151	22.0	24.7	27.4	680
35	133	19.2	21.6	24.0	595

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. $\frac{\text{GPM} \times \text{PSI}}{1460} = \text{Electric Brake H. P. Required}$

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, additional technical information and **pump warranty**.

⚠ WARNING

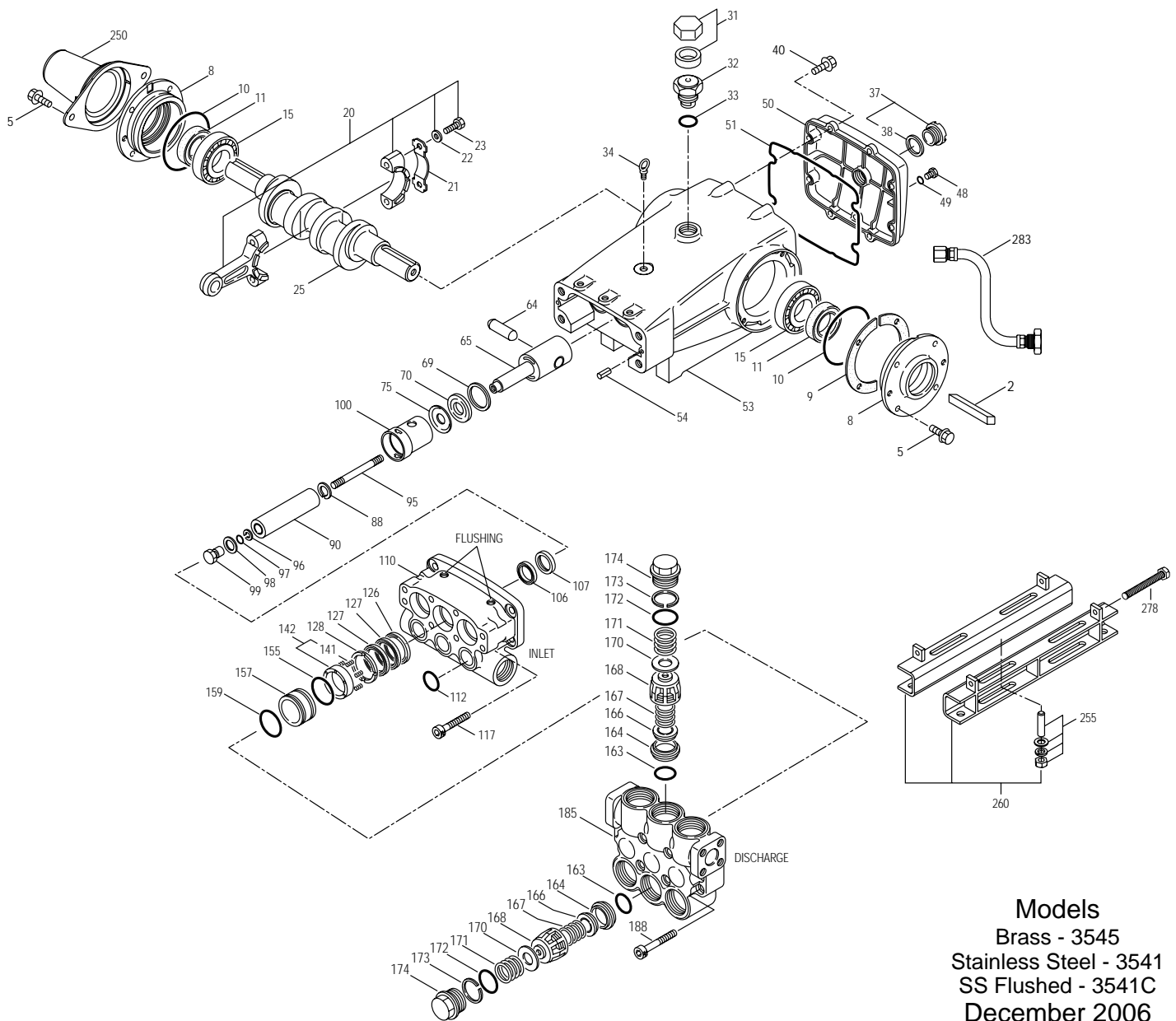
All systems require both a primary pressure regulating device (i.e., regulator, unloader) and a secondary pressure safety relief device (i.e., pop-off valve, safety valve). Failure to install such relief devices could result in personal injury or damage to the pump or to system components. CAT PUMPS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

"Customer confidence is our greatest asset"

PARTS LIST

ITEM	PART NUMBER		DESCRIPTION		QTY	
2	3545	MATL	3541	MATL		
5	34021	STL	34021	STL	Key (M10x8x70)	1
8	125753	S	125753	S	Screw, HHC Sems (M8x25)	8
9	44542	AL	44542	AL	Cover, Bearing	2
10	815279	FBR	815279	FBR	Shim, Split 2-PC	4
11	12398	NBR	12398	NBR	O-Ring, Bearing Cover - 70D	2
15	13296	NBR	13296	NBR	Seal, Oil, Crankshaft	2
20	29326	STL	29326	STL	Bearing, Roller	2
21	121467	TNM	121467	TNM	Rod, Connecting Assembly (Incls: 21, 22, 23) [10/00]	3
22	44940	STZP	44940	STZP	Washer, Locking (M10)	3
	126749	STCP R	126749	STCP R	Washer, Flat (M18)	6
	12490	STZP	12490	STZP	Washer, Flat (M10)	6
	126574	STCP R	126574	STCP R	Washer, Flat (M10)	6
	122045	STZP	122045	STZP	Screw, HH (M10x55)	3
	29325	FCM	29325	FCM	Crankshaft, Dual End	1
	828710	—	828710	—	Protector, Cap w/Foam Gasket	1
	43211	ABS	43211	ABS	Cap, Oil Filler	1
	14177	NBR	14177	NBR	O-Ring, Oil Filler Cap - 70D	1
	126473	STCP R	126473	STCP R	Bolt, Eye (M12x1.75) (For Lifting Pump Only)	1
	92241	—	92241	—	Gauge, Oil, Bubble w/Gasket	1
	44428	NBR	44428	NBR	Gasket, Flat, Oil Gauge - 80D	1
	125753	S	125753	S	Screw, HHC Sems (M8x25)	8
	25625	STCP	25625	STCP	Plug, Drain (1/4"x19 BSP)	1
	23170	NBR	23170	NBR	O-Ring, Drain Plug - 70D	1
	45936	AL	45936	AL	Cover, Rear	1
	16612	NBR	16612	NBR	O-Ring, Crankcase Cover - 70D	1
	44487	AL	44487	AL	Crankcase Assy (Incls: 34, 54) [05/05]	1
	27488	S	27488	S	Pin, Guide	2
	43864	CM	43864	CM	Pin, Crosshead	3
	45116	SSZZ	45116	SSZZ	Rod, Plunger	3
	29338	STZP	29338	STZP	Washer, Oil Seal	3
	126587	STCP R	126587	STCP R	Washer, Oil Seal	3
	100488	NBRS	100488	NBRS	Seal, Oil, Crankcase	3
	44739	FPM	44739	FPM	Seal, Oil, Crankcase	3
	43865	S	43865	S	Slinger, Barrier	3
	45676	S	45676	S	Washer, Keyhole (M16)	3
	46806	CC	46806	CC	Plunger (M45x145)	3
	89778	SS	89778	SS	Stud, Plunger Retainer (M10x135)	3
	20189	PTFE	20189	PTFE	Back-up-Ring, Plunger Retainer	3
	11345	NBR	11345	NBR	O-Ring, Plunger Retainer - 70D	3
	11375	FPM	11375	FPM	O-Ring, Plunger Retainer	3
	701490	EPDM	701490	EPDM	O-Ring, Plunger Retainer	3
	44085	SS	44085	SS	Gasket, Retainer	3
	44084	SS	44084	SS	Retainer, Plunger (M10)	3
	44119	PPG	44119	PPG	Retainer, Seal	3
	46809	NBR	—	—	Seal, LPS w/S-Spg	3
	—	—	48384	NBR	Seal, LPS w/SS-Spg	3
	702013	SFTB*	702013	SFTB*	Seal, LPS w/SS-Spg	3
	46945	EPDM	46945	EPDM	Seal, LPS w/SS-Spg	3
	46811	BB	48380	D	Spacer, LPS	3
	46808	BBCP	48375	SS	Manifold, Inlet	1
	—	—	49304	SSD	Manifold, Inlet, Flushed (1/4" Inlet Port) 3541C ONLY	1
	18688	NBR	18688	NBR	O-Ring, Inlet Manifold - 70D	3
	11739	FPM	11739	FPM	O-Ring, Inlet Manifold	3
	701659	EPDM	701659	EPDM	O-Ring, Inlet Manifold - 70D	3
	44585	S	44585	S	Screw, HSH (M14x40)	4
	46812	BB	48383	D	Adapter, Female	3
	46813	STG*	46813	STG*	V-Packing	6
	46814	BB	48386	SS	Adapter, Male	3
	45113	SS	45113	SS	Spring, Coil	6/18
	46824	BB	48382	SS	Spacer w/Coil Springs	3
	17784	NBR	17784	NBR	O-Ring, V-Packing Spacer - 80D	3
	20138	FPM	20138	FPM	O-Ring, V-Packing Spacer - 80D	3
	701658	EPDM	701658	EPDM	O-Ring, V-Packing Spacer - 80D	3
	46816	BB	48381	SS	Spacer, V-Packing	3
	17784	NBR	17784	NBR	O-Ring, V-Packing Spacer - 80D	3
	20138	FPM	20138	FPM	O-Ring, V-Packing Spacer - 80D	3
	701658	EDPM	701658	EDPM	O-Ring, V-Packing Spacer - 80D	3
	26143	NBR	26143	NBR	O-Ring, Seat	6
	14331	FPM	14331	FPM	O-Ring, Seat - 70D	6
	701660	EPDM	701660	EPDM	O-Ring, Seat	6
	46822	S	48393	SS	Seat	6
	43932	S	44108	SS	Valve	6
	44109	SS	44109	SS	Spring, Valve	6
	44728	PVDF	44728	PVDF	Retainer, Spring	6
	44729	SS	44729	SS	Washer, Spring Retainer	6
	44644	SS	44644	SS	Coil Spring (70kg), Valve Plug	6
	89827	NBR	89827	NBR	O-Ring, Valve Plug - 90D	6
	11747	FPM	11747	FPM	O-Ring, Valve Plug - 90D	6
	701494	EPDM	701494	EPDM	O-Ring, Valve Plug - 70D	6
	48364	D	48364	D	Back-up-Ring, Valve Plug	6
	46444	FBB	49300	SSD	Plug, Valve	6
	46820	BBCP	49302	SSD	Manifold, Discharge	1
	89981	S	89981	S	Screw, HSH (M12x70)	8
	44516	NY	44516	NY	Protector, Shaft w/2 89283 Screws, 34864 Washers, 15846 Lockwashers	1
	34018	STCP R	34018	STCP R	Kit, Direct Mount	1
	34039	SS	34039	SS	Kit, Direct Mount	1

EXPLODED VIEW



Models
 Brass - 3545
 Stainless Steel - 3541
 SS Flushed - 3541C
 December 2006

	3545	MATL	3541	MATL		
260	92674	STZP	92674	STZP	Mounting, Box Assy (Incls 34018)	1
275	990013	STL	990013	STL	Hub, 'B' 35mm w/Keyway [See Drive Packages Tech Bulletin 003]	1
278	80540	ZP	80540	ZP	Screw, HH (M12x100) (Rail Adjusting Screw)	1
283	34314	—	34314	—	Kit, Oil Drain	1
290	6124	—	6124	—	Gasket, Liquid (3 oz.)	1
299	814834	BBCP	818371	SS	Head, Complete	1
300	33234	NBR*	33834	NBR*	Kit, Seal (Incls: 97, 106, 112, 127, 155, 159)	1
	31261	FPM	31261	FPM	Kit, Seal (Incls: 97, 106, 112, 127, 155, 159)	1
	◆ 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
	31262	FPM	31262	FPM	Kit, Valve (Incls: 163, 164, 166, 167, 168, 170, 172, 173)	1
	◆ 31235	EPDM	◆ 31264	EPDM	Kit, Valve (Incls: 163, 164, 166, 167, 168, 170, 172, 173)	1
—	819000	F	819000	F	Assy, Crankcase, Cast Iron Conversion	1
—	714500	SS	714500	SS	C.A.T. (For R.O. or Industrial Applications)	1
—	714506	SS	714506	SS	Adapter, (2 per C.A.T.) (See Data Sheet for complete selection)	2
—	6575	—	6575	—	Plunger Pump Service DVD	1
—	6100	—	6100	—	Oil, Case (12 Bottles) ISO 68 Multi-viscosity Hydraulic (Fill to specified crankcase capacity prior to start-up)	1
—	—	—	6119	—	Lubricant, Antisize (1 oz.)	1

Bold print part numbers are unique to a particular pump model. Italics are optional items. [] Date of latest production change. ◆ Silicone oil/grease required.

* Review material codes for individual items (STG and SFTB generally may be used as alternates). † Production parts are different than repair parts.

R Components comply with RoHS Directive. See Tech Bulletins 002, 003, 024, 036, 041, 043, 053, 074, 077, 083 and 099 for additional information.

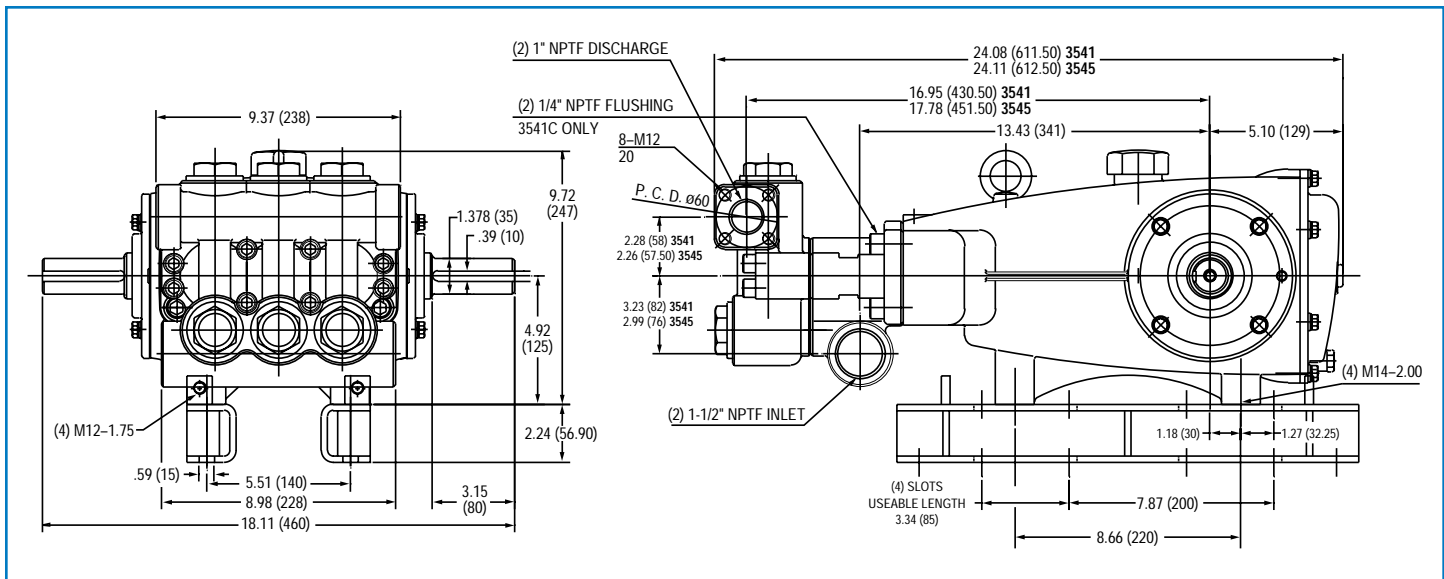
Pressurized Inlet and C.A.T. highly recommended for Hi-Temp, R.O. and industrial applications.

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

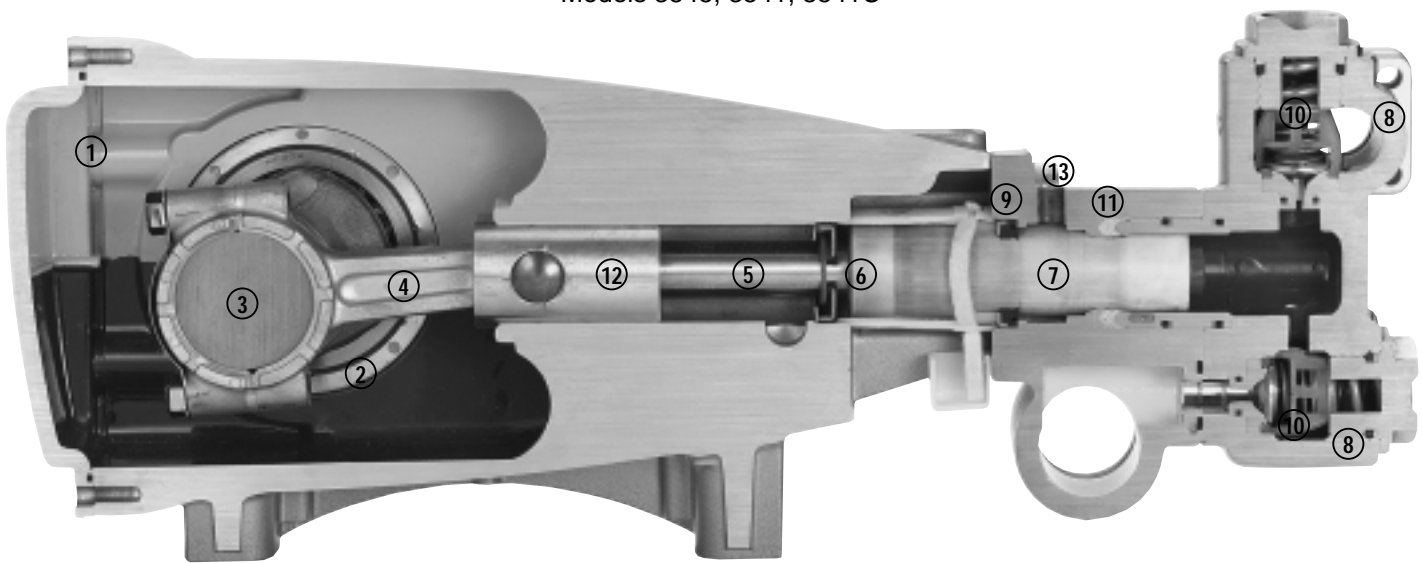
NBR=Medium Nitrile (Buna-N) NBRs=Buna, Silicone Free NY=Nylon PPG=Glass Filled Polypropylene PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride

S=304SS SS=316SS SFTB=Special Blend PTFE Black SSNP=316SS/Nickel Plated SSZZ=316SS/Zamak STG=Special Blend PTFE White STL=Steel

STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated TNM=Special High Strength ZP=Zinc Plated



Models 3545, 3541, 3541C



- 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 TNM **connecting rods** noted for superior tensile 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, solid ceramic **plungers** provide a true wear surface and extended seal life.
- 8 **Manifolds** are a high tensile strength forged brass, 316 stainless steel or duplex 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, ultimate seating and extended life.
- 11 Specially formulated, CAT PUMP exclusive, **V-Packings** offer unmatched performance and seal life.
- 12 **Crossheads** are 360° supported for uncompromising alignment.
- 13 Optional special **ported Flushed Inlet Manifold** permits external flush for lubricating and cooling seals when pumping liquids such as DI water, Hi-Temp or low lubricity.

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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