

5PP Plunger Pump

Models 5PP3140G1
5PP3140
5PP3150G1

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 Seals 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 stainless steel valves and seats are hardened and polished for ultimate seating and extended valve life.
- Forged brass 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 mean longer bearing life.

Easy Maintenance

- Convenient "press-in" style seal case for ease in servicing.
- 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.

⚠ 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.

SPECIFICATIONS

	U.S.	Metric	U.S.	Metric
MODEL	5PP3140G1		5PP3150G1	
Flow	4.0 GPM	(15 L/M)	4.5 GPM	(17 L/M)
Pressure Range	100-4000 PSI	(7-275 BAR)	100-4000 PSI	(7-275 BAR)
Pump RPM	1652 RPM	(1652 RPM)	1645 RPM	(1645 RPM)
Max. Engine RPM	3353 RPM	(3353 RPM)	3339 RPM	(3339 RPM)
Bore	0.630"	(16 mm)	0.630"	(16 mm)
Stroke	0.650"	(16.5 mm)	0.709"	(18 mm)
Weight	26.4 lbs.	(12.0 kg)	26.4 lbs.	(12.0 kg)

MODEL

	U.S.	Metric
MODEL	5PP3140	
Flow	4.0 GPM	(15 L/M)
Pressure Range	100-4000 PSI	(7-275 BAR)
RPM	1460 RPM	(1460 RPM)
Bore	0.630"	(16 mm)
Stroke	0.709"	(18 mm)
Weight	19.9 lbs.	(9.0 kg)

Alternate Specifications

Flow	4.7 GPM	(17.8 L/M)
Pressure Range	100-3500 PSI	(7-245 BAR)
RPM	1725 RPM	(1725 RPM)

COMMON SPECIFICATIONS

Inlet Pressure Range	-2.5 to 60 PSI	(-2 to 4 BAR)
Crankcase Capacity	17 oz.	(0.51 L)
Max. Liquid Temperature	160°F	(71°C)
Above 130°F call CAT PUMPS for inlet conditions and elastomer recommendations.		
Inlet Ports (2)	1/2" NPTF	(1/2" NPTF)
Discharge Ports (2)	3/8" NPTF	(3/8" NPTF)
Shaft Diameter	0.787"	(20 mm)
Dimensions	10.35 x 10.0 x 5.78"	(263 x 254 x 147 mm)

ELECTRIC HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE					MOTOR PULLEY SIZE Using 1725 RPM Motor & 8" Std. Pump Pulley	
	U.S. GPM	L/M	PSI 2000 BAR 140	PSI 2500 BAR 175	PSI 3000 BAR 210	PSI 3500 BAR 245	PSI 4000 BAR	Pump RPM	Pulley O.D.
5PP3140G1	4.0	15	5.5	6.8	8.2	9.6	11.0	1652	Gearbox
5PP3140 Alternate	4.0	15	5.5	6.8	8.2	9.6	11.0	1462	6.8
5PP3150G	4.5	17	6.2	7.7	9.2	10.8	12.3	1645	Gearbox

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. $\frac{\text{GPM} \times \text{PSI}}{1460}$ = 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**.

"Customer confidence is our greatest asset"

PARTS LIST

ITEM	PART NUMBER		DESCRIPTION	QTY	
	5PP3140G1				
	5PP3150G1	MATL	5PP3140	MATL	
2	30057	STL	30057 STL	Key (M6x6x25)	1
5	126542	STCP R	126542 STCP R	Screw, HHC, Sems (M8x16)	8
8	46910	AL	46910 AL	Cover, Bearing	1/2
10	14028	NBR	14028 NBR	O-Ring, Bearing Cover - 70D	2
11	43222	NBR	43222 NBR	Seal, Oil, Crankshaft - 70D	2
15	14480	STL	14480 STL	Bearing, Ball	2
20	48742	TNM	48742 TNM	Rod, Connecting Assy	3
25	—	—	46928 FCM	Crankshaft, Dual End (M18) - 5PP3140	1
	48368 FCM	—	—	Crankshaft, Single End (M16.5) - 5PP3140G1	1
	48233 FCM	—	—	Crankshaft, Single End (M18) - 5PP3150G1	1
30	48224 AL	—	—	Cover, Bearing Blind	1
32	46798	—	46798 —	Cap, Oil Filler, Domed	1
33	14179	NBR	14179 NBR	O-Ring, Oil 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	125824	STCP R	125824 STCP R	Screw, HHC, Sems (M6x16)	4
48	25625	STCP	25625 STCP	Plug, Drain (1/4"x19BSP)	1
49	23170	NBR	23170 NBR	O-Ring, Drain Plug - 70D	1
50	46940	AL	46940 AL	Cover, Rear	1
51	14044	NBR	14044 NBR	O-Ring, Rear Cover	1
53	48617	AL	48617 AL	Crankcase	1
64	46746	CM	46746 CM	Pin, Crosshead	3
65	48458	BBNP	48458 BBNP	Rod, Plunger	3
70	46838	NBR	46838 NBR	Seal, Oil, Crankcase - 70D	3
75	43900	S	43900 S	Slinger, Barrier	3
88	45697	S	45697 S	Washer, Keyhole (M18)	3
90	46884	CC	46884 CC	Plunger (M16x50)	3
98	46730	NBR	46730 NBR	Washer, Seal - 90D	3
99	† 48201	SS	† 48201 SS	Retainer, Plunger w/Stud (M6)	3
100	46749	PVDF	46749 PVDF	Retainer, Seal	3
106	43316	NBR	43316 NBR	Seal, LPS w/S-Spg	3
120	46888	BB	46888 BB	Case, Seal (Press-in-style)	3
121	13978	NBR	13978 NBR	O-Ring, Seal Case - 70D	3
127	43319	SNG	43319 SNG	V-Packing	6
128	46618	NY	46618 NY	Adapter, Male	3
139	22179	BBCP	22179 BBCP	Plug, Inlet (1/2"NPTM)	1
163	17547	NBR	17547 NBR	O-Ring, Seat - 85D	6
164	45790	S	45790 S	Seat	6
166	46429	S	46429 S	Valve	6
167	43750	S	43750 S	Spring	6
168	† 44565	PVDF	† 44565 PVDF	Retainer, Spring (White)	6
172	17549	NBR	17549 NBR	O-Ring, Valve Plug - 70D	6
173	48365	D	48365 D	Back-up-Ring, Valve Plug	6
174	45900	BB	45900 BB	Plug, Valve	6
185	46886	FBB	46886 FBB	Manifold, Head	1
188	126513	STCP R	126513 STCP R	Screw, HSH (M8x70)	8
196	22187	BBCP	22187 BBCP	Plug, Discharge (3/8"NPTM)	1
250	—	—	118672 STCP	Protector, Shaft	1
255	—	—	30243 STZP	Mount, Direct	1
260	—	—	30611 STZP R	Assembly, Angle Rail	1
	—	—	30637 STZP	Mount, Angle Assy-Retro Fit	1
265	—	—	30659 —	Kit, Complete Mounting (Incls: 30611, 30633, 118672)	1
275	—	—	30944 STL	Assembly, Hub & Key (Incls: 30945, 30057)	1
277	—	—	34424 AL	Bell Housing Assy (10 Hp-184TC)	1
278	—	—	8230 AL	Flexible Coupling Assy (20mm to 1-1/8")	1
	—	—	8275 AL	Flexible Coupling Assy (20mm to 1-3/8")	1
279	—	—	990213 AL	Kit, Adapter (must be used with 34424 to connect to motor frame 213-215T)	1
283	34334	—	34334 —	Kit, Oil Drain (3/8" x 24")	1
300	899410	NBR	899410 NBR	Kit, Seal (Incls: 106,127)	1
310	899110	NBR	899110 NBR	Kit, Valve (Incls: 163,164,166,167,168,172,173)	1
350	30696	STZP	30696 STZP	Pliers, Reverse	1
500	8076	—	—	Gearbox (See Individual Data Sheet)	1
—	6107	—	6107 —	Oil, Bottle (21 oz.) ISO-68 Hydraulic (Fill to specified crankcase capacity prior to start-up)	1

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

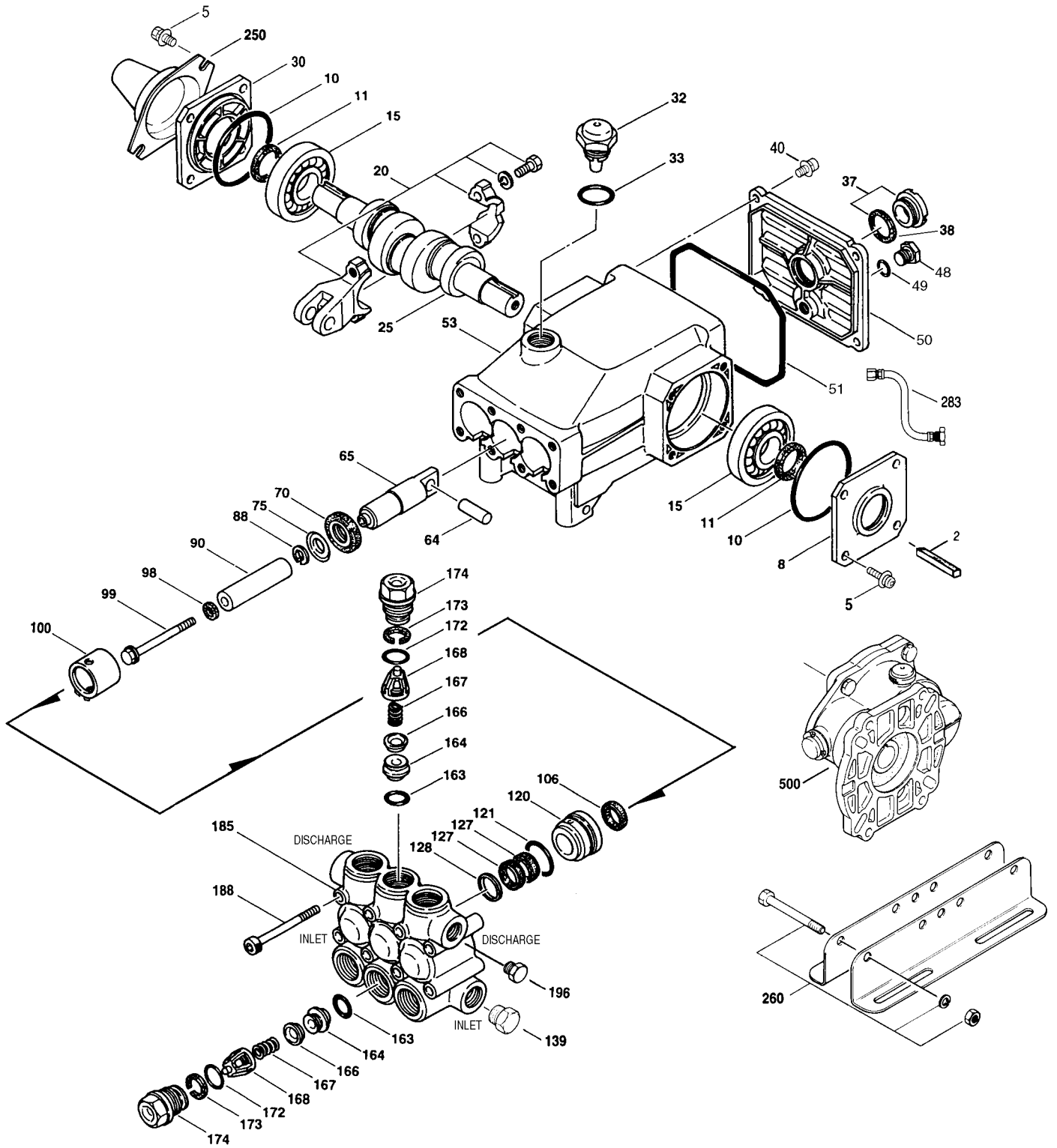
† Production parts are different than repair parts. R Components comply with RoHS Directive.

See Tech Bulletins 002, 003, 024, 036, 043, 053, 060, 061, 064, 073, 074, 077, 078 and 083 for additional information.

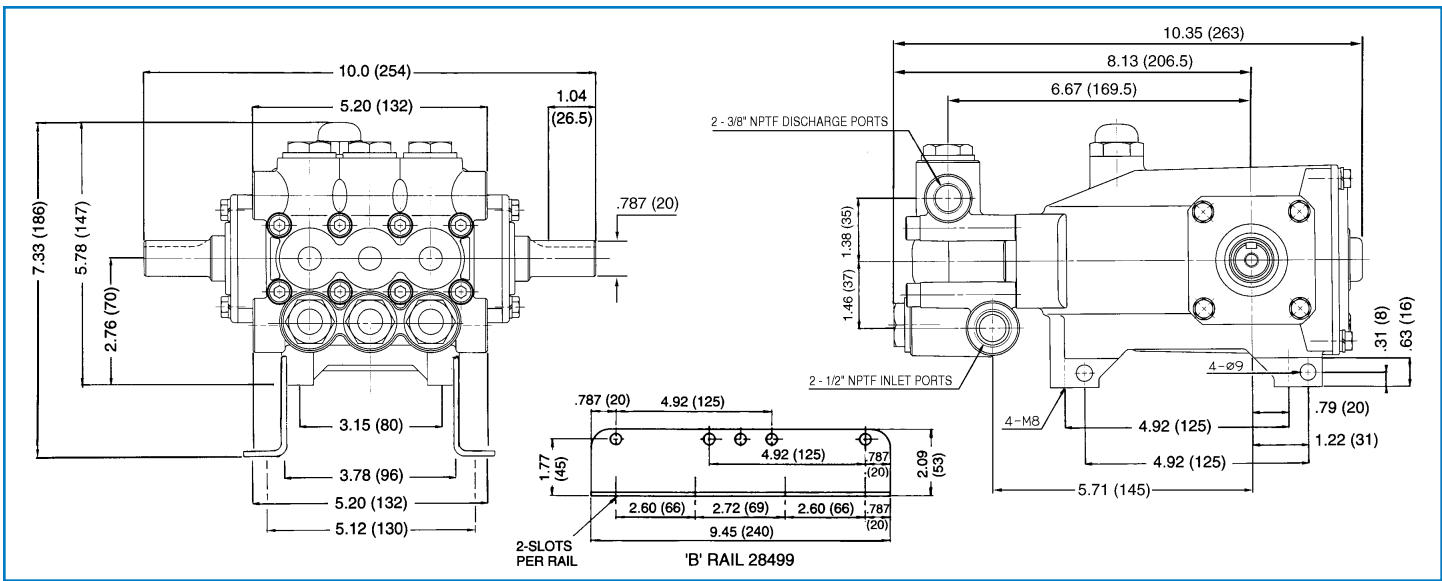
MATERIAL CODES (Not Part of Part Number): AL=Aluminum BB=Brass BBCP=Brass/Chrome Plated BBNP=Brass/Nickel Plated CC=Ceramic CM=Chrome-moly
D=Acetal FBB=Forged Brass FCM=Forged Chrome-moly NBR=Medium Nitrile (Buna-N) NY=Nylon PTFE=Pure Polytetrafluoroethylene

PVDF=Polyvinylidene Fluoride S=304SS SNG=Special Blend (Buna) STL=Steel STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated TNM=Special High Strength

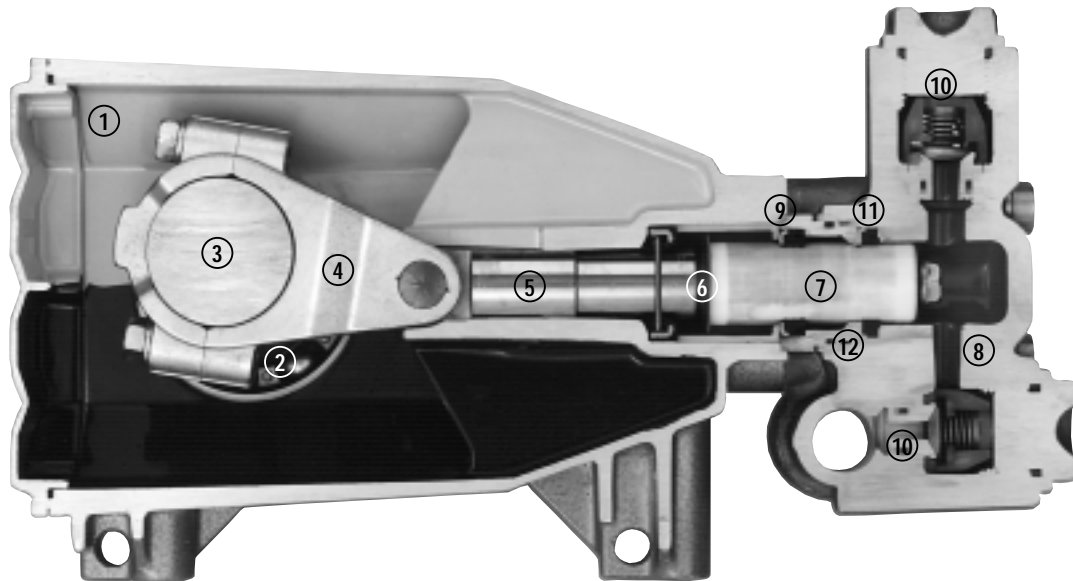
EXPLODED VIEW



Models
5PP3140G1, 5PP3140,
5PP3150G1



Models 5PP3140G1, 5PP3140, 5PP3150G1



- 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 high strength **connecting rods** noted for strength and superior bearing quality.
- 5 The **plunger rods** with hardened surfaces offer wear resistance and Zamak cross-heads for high load capacity.
- 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 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 of the seals.
- 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 Press-in style **seal case** offers alignment and support for seals and "no tools" servicing.

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