

# DATA SHEET

## 3CP PLUNGER PUMPS

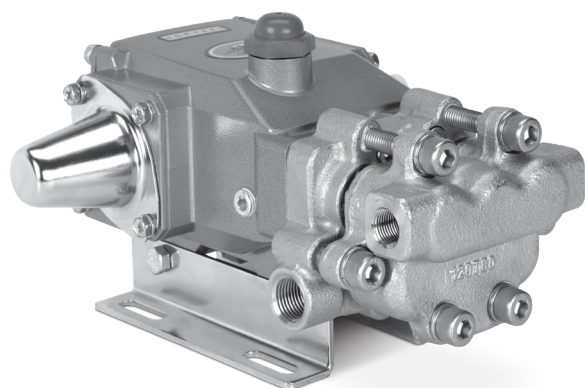


**Stainless Steel Models:**

**3CP1221, 3CP1231, 3CP1241**

**Gearbox Model:**

**3CP1241G**



Model 3CP1221 Shown  
(Rails and shaft protector sold separately)

### FEATURES

- 316 Stainless Steel wet end
- Various Drive configurations including direct drive bell housing to electric motor, belt drive to engine or motor, and direct drive to hydraulic motor
- Standard NBR seals with alternative options for temperature and chemical compatibility

### SPECIFICATIONS

	U.S. Measure	Metric Measure
<b>3CP1221</b>		
Flow	4.2 gpm	16 lpm
Pressure Range	100 — 2000 psi	6.9 — 138 bar
Stroke	0.500"	12.7 mm
<b>3CP1231</b>		
Flow	2.3 gpm	8.7 lpm
Pressure Range	100 — 2000 psi	6.9 — 138 bar
Stroke	0.287"	7.3 mm
<b>3CP1241</b>		
Flow	3.6 gpm	13.6 lpm
Pressure Range	100 — 2000 psi	6.9 — 138 bar
Stroke	0.433"	11 mm
<b>3CP1241G</b>		
Flow	3.0 gpm	11.4 lpm
Pressure Range	100 — 2000 psi	6.9 — 138 bar
Engine RPM	3600 rpm	3600 rpm
Stroke	0.433"	11 mm

\*Pump minimum is 100 RPM



### COMMON SPECIFICATIONS

	U.S.	Metric
Pump RPM*	1725	1725
Inlet Pressure Range	Flooded to 70 psi	Flooded to 4.8 bar
Standard Liquid Temp. (NBR)	160°F	71°C
<b>Alternative seals available for high temp up to 200° F</b>		
Bore	0.708"	18 mm
Crankcase Capacity	12 oz.	0.35 l
Inlet Ports (2)	1/2" NPT(F)	1/2" NPT(F)
Discharge Ports (2)	3/8" NPT(F)	3/8" NPT(F)
Shaft Diameter	0.650"	16.5mm
Pulley Mounting	Either Side	Either Side
Weight	14.84 lbs.	6.7 kg
Dimensions	9.69 x 8.78 x 5.53"	246 x 223 x 136mm

### 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)
HT	.3000	180° F (82° C)
STHT	.3400	190° F (88° C)

See Reference Document 99TCH002 for inlet conditions and RPM at high temperature.

**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.**

$$\frac{\text{Hp (Electric Brake)}}{1460} = \frac{\text{gpm x psi}}{1460}$$

**DETERMINING MOTOR PULLEY SIZE**

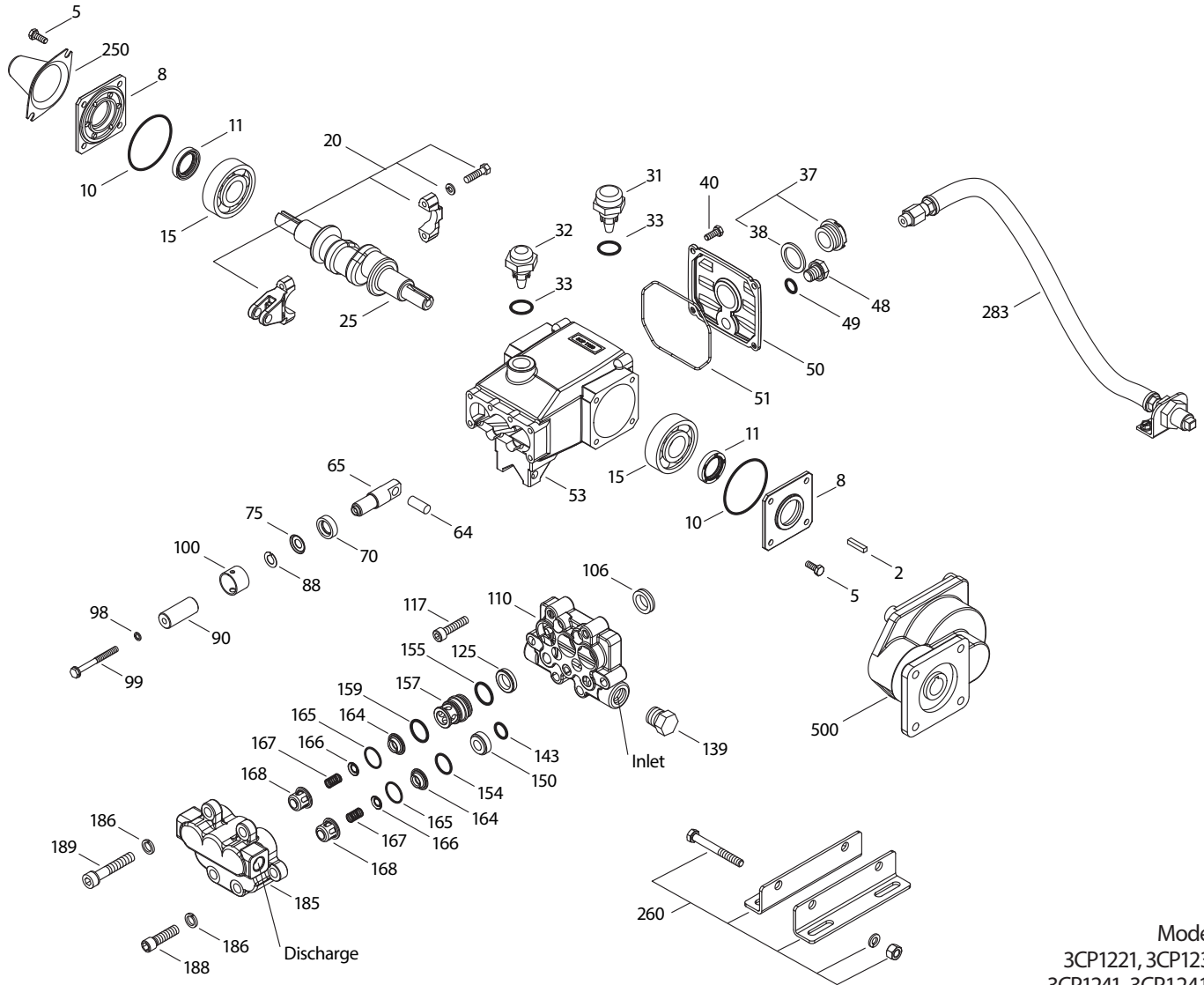
$$\frac{\text{Motor Pulley O.D.}}{\text{Pump rpm}} = \frac{\text{Pump Pulley O.D.}}{\text{Motor rpm}}$$

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

# PARTS LIST

ITEM	PART NUMBER				DESCRIPTION	QTY		
	3CP1221	MATL	3CP1231	MATL				
					<b>3CP1241</b>			
					<b>3CP1241G</b>			
2	30047	STL	30047	STL	30047	STL	Key (M5x5x24)	1
5	92538	S	92538	S	92538	S	Screw, HHC Sems (M6x16)	8
8	46901	AL	46901	AL	46901	AL	Cover, Bearing	2
	—	—	—	—	<b>48259</b>	AL	Cover, Blind (3CP1241G)	1
10	14028	NBR	14028	NBR	14028	NBR	O-Ring, Cover, Bearing - 70D	2
11	43222	NBR	43222	NBR	43222	NBR	Seal, Oil, Crankshaft	2
15	14480	STL	14480	STL	14480	STL	Bearing, Ball	2
20	48730	TNM	48730	TNM	48730	TNM	Rod Assembly, Connecting	3
25	<b>46927</b>	FCM	—	—	—	—	Crankshaft, Dual End - 3CP1221 (M12.7)	1
	—	—	<b>46994</b>	FCM	—	—	Crankshaft, Dual End - 3CP1231 (M7.3)	1
	—	—	—	—	<b>46991</b>	FCM	Crankshaft, Dual End - 3CP1241 (M11)	1
	—	—	—	—	<b>48484</b>	FCM	Crankshaft, Single End - 3CP1241G (M11)	1
31	127409	—	127409	—	127409	—	Cap, Vented w/ O-ring (Rain Cap)	1
32	46798	—	46798	—	46798	—	Cap, Oil Filler	1
33	14179	NBR	14179	NBR	14179	NBR	O-Ring, Oil Filler Cap - 70D	1
37	92241	—	92241	—	92241	—	Gauge, Oil, Bubble w/Gasket - 80D	1
38	44428	NBR	44428	NBR	44428	NBR	Gasket, Flat, Oil Gauge - 80D	1
40	92538	S	92538	S	92538	S	Screw, HHC Sems (M6x16)	4
48	25625	STCP	25625	STCP	25625	STCP	Plug, Drain (1/4"x19 BSP)	1
49	23170	NBR	23170	NBR	23170	NBR	O-Ring, Drain Plug - 70D	1
50	46939	AL	46939	AL	46939	AL	Cover, Rear	1
51	14041	NBR	14041	NBR	14041	NBR	O-Ring, Rear, Cover - 70D	1
53	48644	AL	48644	AL	48644	AL	Crankcase	1
64	46615	CM	46615	CM	46615	CM	Pin, Crosshead	3
65	48459	BBNP	48459	BBNP	48459	BBNP	Rod, Plunger	3
70	46839	NBR	46839	NBR	46839	NBR	Seal, Oil, Crankcase	3
75	43900	S	43900	S	43900	S	Slinger, Barrier	3
88	45697	S	45697	S	45697	S	Washer, Keyhole (M18x10)	3
90	46976	CC	46976	CC	46976	CC	Plunger (M18x43)	3
97	76729	SS	76729	SS	76729	SS	Washer, Flat (Not shown, use with 76730)	3
98	46730	NBR	46730	NBR	46730	NBR	Washer, Seal - 90D	3
	48394	FPM	48394	FPM	48394	FPM	Washer, Seal - 90D	3
	◆ 48432	EPDM	◆ 48432	EPDM	◆ 48432	EPDM	Washer, Seal	3
	76730	PTFE	76730	PTFE	76730	PTFE	Ring, Sealing	3
99	† 48201	SS	† 48201	SS	† 48201	SS	Retainer, Plunger	3
100	46541	PVDF	46541	PVDF	46541	PVDF	Retainer, Seal	3
106	44053	NBR	44053	NBR	44053	NBR	Seal, LPS w/SS-Spg	3
	44926	FPM	44926	FPM	44926	FPM	Seal, LPS w/SS-Spg	3
	76243	ST2	76243	ST2	76243	ST2	Seal, LPS w/S-Spg	3
	◆ 46651	EPDM	◆ 46651	EPDM	◆ 46651	EPDM	Seal, LPS w/SS-Spg	3
110	48556	SS	48556	SS	48556	SS	Manifold, Inlet	1
117	119034	S	119034	S	119034	S	Screw, HSH (M8x35)	4
125	44652	SNG	44652	SNG	44652	SNG	Seal, HPS w/SS	3
	44925	FPM	44925	FPM	44925	FPM	Seal, HPS w/SS	3
	46652	HT	46652	HT	46652	HT	Seal, HPS w/SS, 2-PC w/S-Support	3
	76052	ST4	76052	ST4	76052	ST4	Seal, HPS w/S	3
139	45156	SS	45156	SS	45156	SS	Plug, Inlet, [1/2"-14 NPT(M)]	1
143	17547	NBR	17547	NBR	17547	NBR	O-Ring, Adapter, Valve, Rear - 85D	3
	11685	FPM	11685	FPM	11685	FPM	O-Ring, Adapter, Valve, Rear - 85D	3
	◆ 46648	EPDM	◆ 46648	EPDM	◆ 46648	EPDM	O-Ring, Adapter, Valve, Rear - 70D	3
	703308	IPFE	703308	IPFE	703308	IPFE	O-Ring, Adapter, Valve, Rear - 85D	3
150	44060	SS	44060	SS	44060	SS	Adapter, Valve	3
154	43893	NBR	43893	NBR	43893	NBR	O-Ring, Adapter, Valve, Front - 80D	3
	44927	FPM	44927	FPM	44927	FPM	O-Ring, Adapter, Valve, Front	3
	◆ 46649	EPDM	◆ 46649	EPDM	◆ 46649	EPDM	O-Ring, Adapter, Valve, Front - 80D	3
	703307	IPFE	703307	IPFE	703307	IPFE	O-Ring, Adapter, Valve, Front - 80D	3
155	26089	NBR	26089	NBR	26089	NBR	O-Ring, Adapter, Valve, Rear - 80D	3
	11377	FPM	11377	FPM	11377	FPM	O-Ring, Adapter, Valve, Rear - 80D	3
	◆ 46647	EPDM	◆ 46647	EPDM	◆ 46647	EPDM	O-Ring, Adapter, Valve, Rear - 80D	3
	703244	IPFE	703244	IPFE	703244	IPFE	O-Ring, Adapter, Valve, Rear - 75D	3
157	44059	SS	44059	SS	44059	SS	Adapter, Valve	3
159	26089	NBR	26089	NBR	26089	NBR	O-Ring, Adapter, Valve, Front - 80D	3
	11377	FPM	11377	FPM	11377	FPM	O-Ring, Adapter, Valve, Front - 80D	3
	◆ 46647	EPDM	◆ 46647	EPDM	◆ 46647	EPDM	O-Ring, Adapter, Valve, Front - 80D	3
	703244	IPFE	703244	IPFE	703244	IPFE	O-Ring, Adapter, Valve, Rear - 75D	3
164	44058	SS	44058	SS	44058	SS	Seat	6
165	44001	NBR	44001	NBR	44001	NBR	O-Ring, Seat - 80D	6
	44928	FPM	44928	FPM	44928	FPM	O-Ring, Seat - 80D	6
	◆ 46650	EPDM	◆ 46650	EPDM	◆ 46650	EPDM	O-Ring, Seat - 80D	6
166	44057	SS	44057	SS	44057	SS	Valve	6
167	44056	SS	44056	SS	44056	SS	Spring	6
168	44055	SS	44055	SS	44055	SS	Retainer, Spring	6
185	48558	SS	48558	SS	48558	SS	Manifold, Discharge	1
186	15847	S	15847	S	15847	S	Lockwasher (M10)	6
188	87950	S	87950	S	87950	S	Screw, HSH (M10x35)	2

# EXPLODED VIEW



Models  
3CP1221, 3CP1231,  
3CP1241, 3CP1241G  
February 2020

ITEM	3CP1221		3CP1231		3CP1241 3CP1241G		DESCRIPTION	QTY
	MATL		MATL		MATL			
189	87952	S	87952	S	87952	S	Screw, HSH (M10x55)	4
250	118672	STCP	118672	STCP	118672	STCP	Protector, Shaft	1
260	30612	STZP	30612	STZP	30612	STZP	Rail, Angle Assy (Belt Drive)	1
283	34334	—	34334	—	34334	—	Kit, Oil Drain (3/8" x 24")	1
299	816719	SS	816719	SS	816719	SS	Head, Complete w/NBR Seals and O-rings	1
300	33985	NBR	33985	NBR	33985	NBR	Kit, Seal (Incls: 98,106,125,143,154,155,159) <b>.Std</b>	1
	33309	FPM	33309	FPM	33309	FPM	Kit, Seal (Incls: 98,106,125,143,154,155,159) <b>.0110</b>	1
	◆ 33944	EPDM*	◆ 33944	EPDM*	◆ 33944	EPDM*	Kit, Seal (Incls: 98,106,125,143,154,155,159) <b>.0220</b>	1
	76136	HT	76136	HT	76136	HT	Kit, Seal (Incls: 98,106,125,143,154,155,159) <b>.3000</b>	1
	76167	STHT	76167	STHT	76167	STHT	Kit, Seal (Incls: 98,106,125,143,154,155,159) <b>.3400</b>	1
	76985	IPFE	76985	IPFE	76985	IPFE	Kit, Seal (Incls: 97,98,106,125,143,154,155,159) <b>.0770</b>	1
310	30982	NBR	30982	NBR	30982	NBR	Kit, Valve (Incls: 143,154,159,164,165,166,167,168) <b>.Std, .3000, .3400</b>	1
	31216	FPM	31216	FPM	31216	FPM	Kit, Valve (Incls: 143,154,159,164,165,166,167,168) <b>.0110</b>	1
	◆ 31217	EPDM	◆ 31217	EPDM	◆ 31217	EPDM	Kit, Valve (Incls: 143,154,159,164,165,166,167,168) <b>.0220</b>	1
500	—	—	—	—	<b>8075</b>	—	Gearbox (See Individual Data Sheet)	1
—	6107	—	6107	—	6107	—	Oil, Bottle (21 oz.) ISO 68 Hydraulic (Fill to specified crankcase capacity prior to start-up)	1

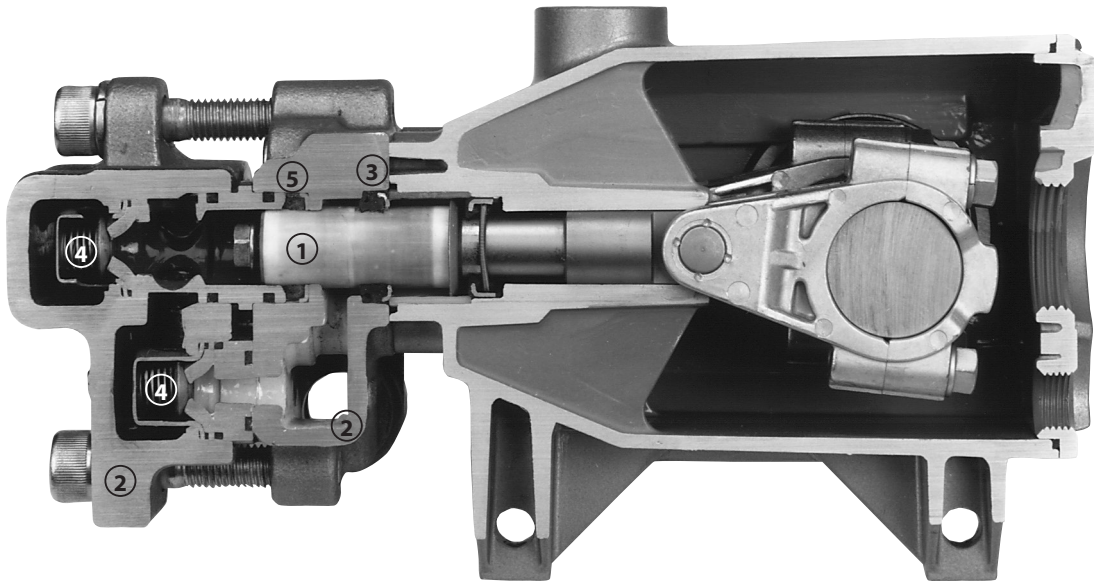
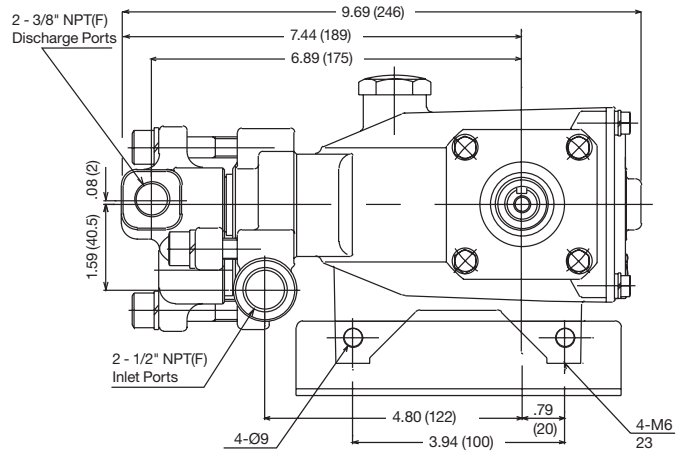
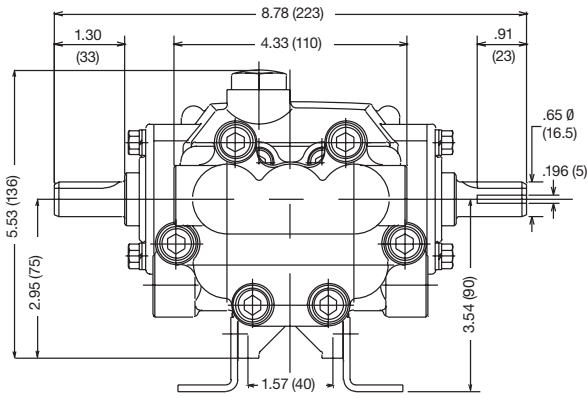
**Bold print part numbers are unique to a particular pump model. Italics are optional items. ◆ Silicone oil/grease required.**

† Production parts are different than repair parts. R Components comply with RoHS Directive. [ ] Date of latest production change.

\*Review individual parts in each kit for material code identification. For Gearbox version see 8075 Data Sheet.

For additional technical information see [www.catpumps.com/literature/tech-bulletins](http://www.catpumps.com/literature/tech-bulletins).

MATERIAL CODES (Not Part of Part Number): AL=Aluminum BB=Brass BBCP=Brass/Chrome Plated BBNP=Brass/Nickel Plated CC=Ceramic CM=Chrome-moly  
EPDM=Ethylene Propylene Diene Monomer FCM=Forged Chrome-moly FPM=Fluorocarbon HS=High Strength HT=High-Temp (EPDM Alternative) IPFE=I-Perfluoroelastomer  
NBR=Medium Nitrile (Buna-N) PTFE=Polytetra Fluoroethylene PVDF=Polyvinylidene Fluoride S=304SS SNG=Special Blend (Buna) SS=316SS ST2=Special PTFE2  
ST4=Special PTFE4 STL=Steel STHT=Special PTFE High Temp STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated TNM=Special High Strength



1. Special concentric, high-density, polished, solid ceramic plungers provide a true wear surface and extended seal life.
2. Manifolds are high tensile strength 316 stainless steel for liquid compatibility and long term, continuous duty.
3. 100% wet seal design adds to service life by allowing pumped liquids to cool and lubricate on both sides.
4. 316 stainless steel valves, seats and springs provide corrosion-resistance, ultimate seating and extended life.
5. Specially formulated, Cat Pumps exclusive, High-Pressure Seals offer unmatched performance and seal life.



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*The Pumps with Nine Lives*