

DATA SHEET

3CP PLUNGER PUMPS

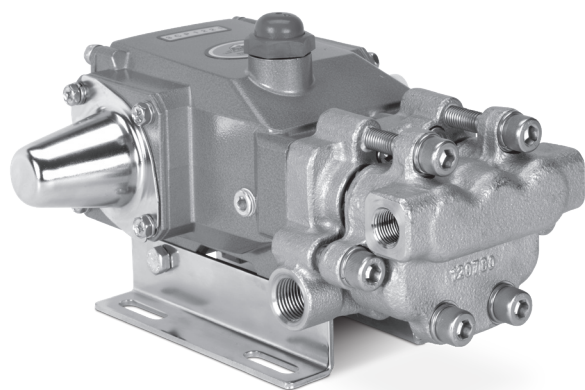


**Stainless Steel
Models:**

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

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
Alternative seals available for high temp up to 200° F		
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

SPECIFICATIONS

	U.S. Measure	Metric Measure
3CP1221		
Flow	4.2 gpm	16 lpm
Pressure Range	100 — 2000 psi	6.9 — 138 bar
Stroke	0.500"	12.7 mm
3CP1231		
Flow	2.3 gpm	8.7 lpm
Pressure Range	100 — 2000 psi	6.9 — 138 bar
Stroke	0.287"	7.3 mm
3CP1241		
Flow	3.6 gpm	13.6 lpm
Pressure Range	100 — 2000 psi	6.9 — 138 bar
Stroke	0.433"	11 mm
3CP1241G		
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

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

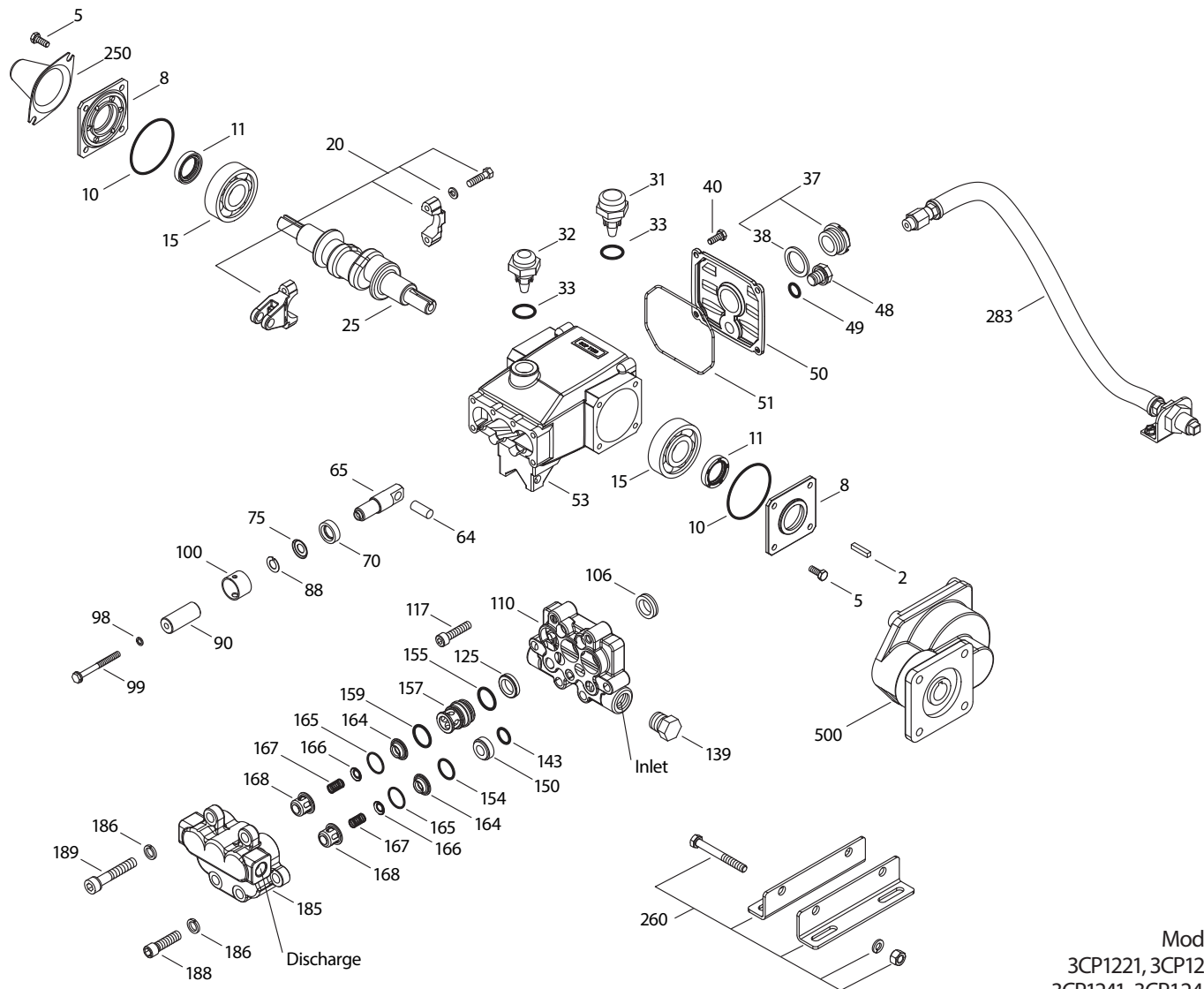
$$\frac{\text{Motor Pulley O.D.}}{\text{Pump rpm}} = \frac{\text{Pump Pulley O.D.}}{\text{Motor rpm}}$$

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

PARTS LIST

ITEM	PART NUMBER				DESCRIPTION		QTY	
	3CP1221	MATL	3CP1231	MATL	3CP1241	MATL		
					3CP1241G			
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
	—	—	—	—	48259	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	46927	FCM	—	—	—	—	Crankshaft, Dual End - 3CP1221 (M12.7)	1
	—	—	46994	FCM	—	—	Crankshaft, Dual End - 3CP1231 (M7.3)	1
	—	—	—	—	46991	FCM	Crankshaft, Dual End - 3CP1241 (M11)	1
	—	—	—	—	48484	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	PART NUMBER				DESCRIPTION		QTY	
	3CP1221	MATL	3CP1231	MATL	3CP1241	MATL		
	3CP1241G							
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) Std	1
	33309	FPM	33309	FPM	33309	FPM	Kit, Seal (Incls: 98,106,125,143,154,155,159) .0110	1
	◆ 33944	EPDM*	◆ 33944	EPDM*	◆ 33944	EPDM*	Kit, Seal (Incls: 98,106,125,143,154,155,159) .0220	1
	76136	HT	76136	HT	76136	HT	Kit, Seal (Incls: 98,106,125,143,154,155,159) .3000	1
	76167	STHT	76167	STHT	76167	STHT	Kit, Seal (Incls: 98,106,125,143,154,155,159) .3400	1
	76985	IPFE	76985	IPFE	76985	IPFE	Kit, Seal (Incls: 97,98,106,125,143,154,155,159) .0770	1
310	30982	NBR	30982	NBR	30982	NBR	Kit, Valve (Incls: 143,154,159,164,165,166,167,168) Std, .3000, .3400	1
	31216	FPM	31216	FPM	31216	FPM	Kit, Valve (Incls: 143,154,159,164,165,166,167,168) .0110	1
	◆ 31217	EPDM	◆ 31217	EPDM	◆ 31217	EPDM	Kit, Valve (Incls: 143,154,159,164,165,166,167,168) .0220	1
500	—	—	—	—	8075	—	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

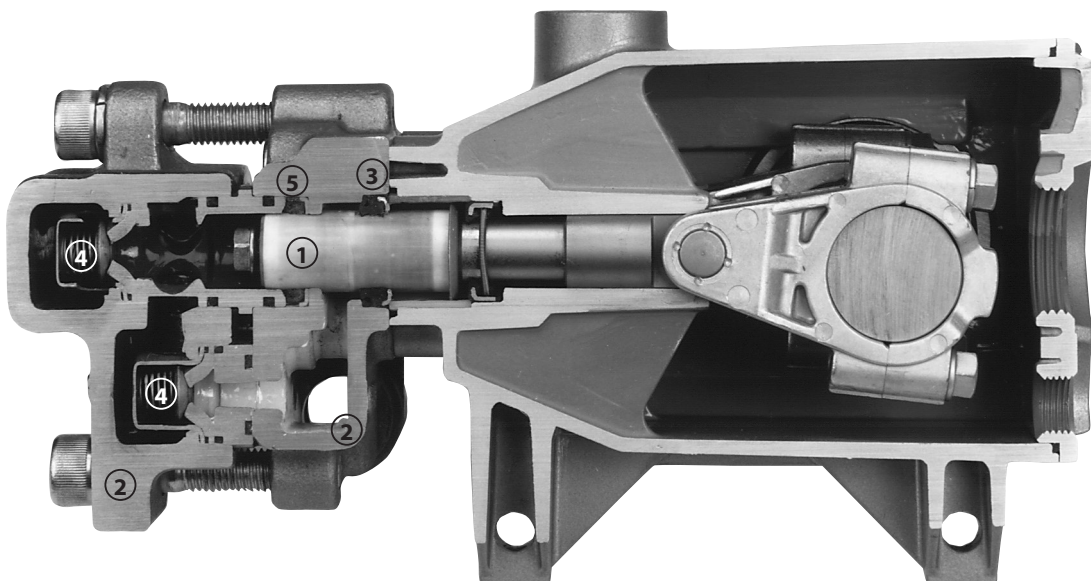
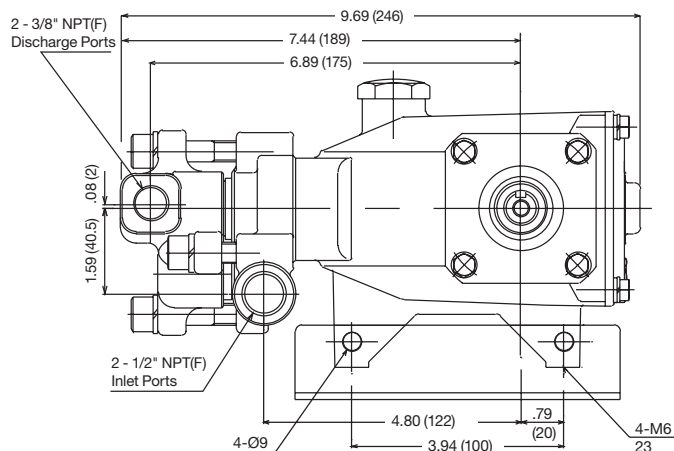
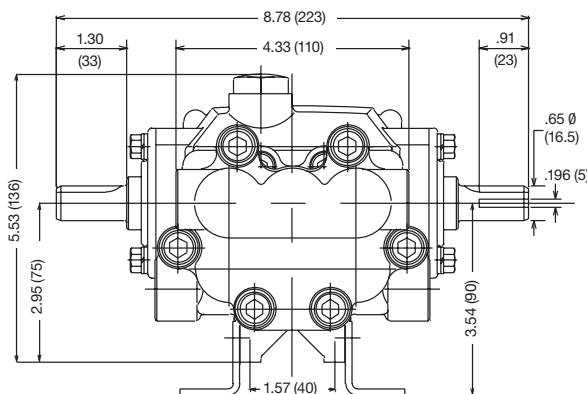
Bold print part numbers are unique to a particular pump model. Italics are optional items. ◆ Silicone oil/grease required.

† 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.

MATERIAL CODES (Not Part of Part Number): AL=Aluminum BB=Brass BBBCP=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.

⚠ 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 or can be requested directly from Cat Pumps.

WARRANTY

View the Limited Warranty on-line at www.catpumps.com/warranty.