

3CP Stainless Steel Plunger Pump

Models **3CP1221**
3CP1231
3CP1241.77

FEATURES

Superior Design

- Triplex plunger design gives smoother liquid flow.
- Hi-Pressure Seals 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 offers perfect alignment and maximizes seal life.

Quality Materials

- All 316 stainless steel valves are heat treated and seats are roller burnished for a positive seal and extended valve life.
- 316 stainless steel manifold is strong and corrosion resistant.
- Special concentric, high density, polished, graphite impregnated, solid ceramic plungers are abrasion resistant and result in extended seal life.
- Specially formulated, CAT PUMP exclusive, Hi-Pressure Seals 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 capacity mean longer bearing life.

Easy Maintenance

- Wet-end is easily serviced without entering crankcase, requiring less time and effort.
- Preset packings mean no packing gland adjustment is necessary, reducing maintenance costs.

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

Note: Consult engine manufacturer when using gas or diesel engine. Refer to pump Service Manual for important Inlet Condition Check-List, Start-up Procedure, Tech Bulletins and Pump Maintenance information.

SPECIFICATIONS

MODEL 3CP1221

	U.S. Measure	Metric Measure
Flow	4.2 GPM	(16 L/M)
Pressure Range	100 to 2000 PSI	(7 to 140 BAR)
RPM	1725 RPM	(1725 RPM)
Stroke	0.500"	(12.7 mm)

MODEL 3CP1231 Direct Drive

	U.S. Measure	Metric Measure
Flow	2.3 GPM	(8.7 L/M)
Pressure Range	100 to 2000 PSI	(7 to 140 BAR)
RPM	1725 RPM	(1725 RPM)
Stroke	0.276"	(7 mm)

MODEL 3CP1241.77 Direct Drive

	U.S. Measure	Metric Measure
Flow	3.6 GPM	(13.6 L/M)
Pressure Range	100 to 2000 PSI	(7 to 140 BAR)
RPM	1725 RPM	(1725 RPM)
Stroke	0.433"	(11 mm)

COMMON SPECIFICATIONS

Maximum Inlet Pressure	Flushed to 70 PSI	(Flushed to 4.9 BAR)
Bore	0.709"	(18 mm)
Crankcase Capacity	10 oz.	(0.3 L)
Maximum Liquid Temperature	160°F	(71°C)
Inlet Ports (2)	1/2" NPT	(1/2" NPT)
Discharge Ports (2)	3/8" NPT	(3/8" NPT)
Pulley Mounting	Either Side	(Either Side)
Shaft Diameter	0.650"	(16.5 mm)
Weight	14.84 lbs.	(6.7 kg)
Dimensions	9.69 x 8.78 x 5.35"	(246 x 223 x 136 mm)

HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE			MOTOR PULLEY SIZE	
			PSI 1200	PSI 1500	PSI 2000	Using 1750 RPM Motor 5.0" Pump Pulley O.D.	
	U.S. GPM	L/M	BAR 85	BAR 105	BAR 140	RPM O.D.	Pulley
3CP1221	4.2	16	3.5	4.3	5.8	1725	5.0
	3.5	13.2	2.9	3.6	4.8	1531	4.4
	3.0	11.4	2.5	3.1	4.2	1313	3.8
3CP1231	2.3	8.7	1.9	2.4	3.2	1725	Direct Drive
3CP1241	3.6	13.6	3.0	3.7	5.0	1725	Direct Drive

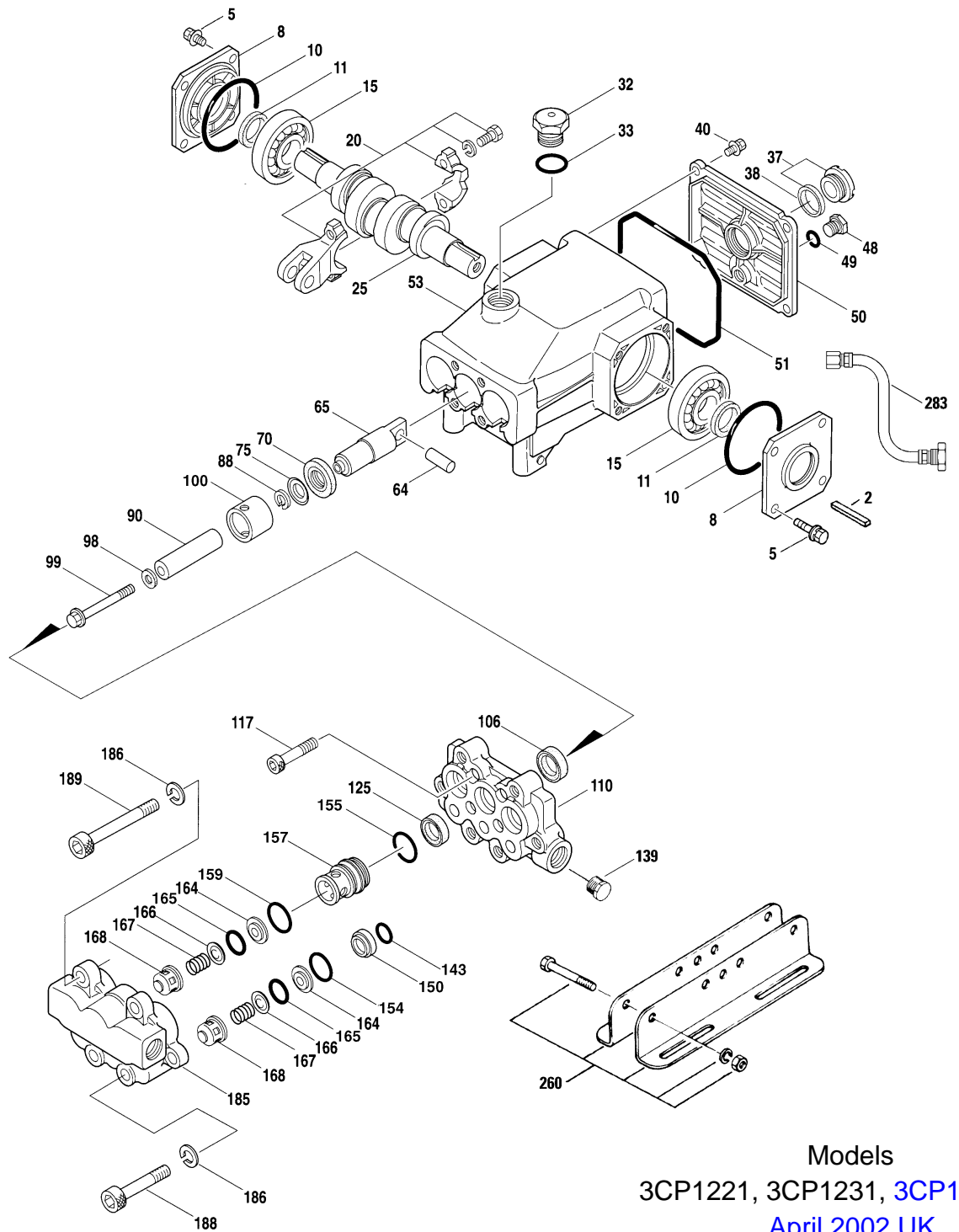
See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 03.

"Customer confidence is our greatest asset"

PARTS LIST

ITEM	P/N	MATL	DESCRIPTION	QTY
● 2	30047	STL	Key (M5x5x24)	1 ●
5	92538	S	Screw, Sems (M6x16)	8
8	46901	AL	Cover, Bearing	2
10	14028	NBR	O-Ring, Cover, Bearing - 70D	2
11	43222	NBR	Seal, Oil, Crankshaft - 70D	2
15	14480	STL	Bearing, Ball	2
20	48659	HS	Rod Assembly, Connecting	3
25	46927	FCM	Crankshaft, Dual End - 3CP1221	1
	46994	FCM	Crankshaft, Dual End - 3CP1231	1
	46991	FCM	Crankshaft, Dual End - 3CP1241	1
32	45690	RTP	Cap, Oil Filler	1
33	14179	NBR	O-Ring, Oil Filler Cap - 70D	1
37	92241		Gauge, Oil, Bubble w/Gasket	1
38	44428	NBR	Gasket, Flat, Oil Gauge	1
40	92538	S	Screw, Sems (M6x16)	4
48	25625	STCP	Plug, Drain (1/4"x19 BSP)	1
49	23170	NBR	O-Ring, Drain Plug - 70D	1
50	46939	AL	Cover, Rear	1
51	14041	NBR	O-Ring, Rear, Cover - 70D	1
● 53	48644	AL	Crankcase	1 ●
64	46615	CM	Pin, Crosshead	3
65	48459	BBNP	Rod, Plunger	3
70	46839	NBR	Seal, Oil, Crankcase - 70D	3
75	43900	S	Slinger, Barrier	3
88	45697	S	Washer, Keyhole (M18)	3
90	46976	CC	Plunger (M18x43)	3
98	46730	NBR	Washer, Seal	3
	48394	FPM	Washer, Seal	3
	◆ 48432	EPDM	Washer, Seal	3
99	48201	SS	Retainer, Plunger	3
100	46541	PVDF	Retainer, Seal	3
106	702390	PTFE	Seal, LPS w/S-Spg	3
	44926	FPM	Seal, LPS w/S-Spg	3
	◆ 46651	EPDM	Seal, LPS w/S-Spg	3
● 110	48556	SSL	Manifold, Inlet	1 ●
117	119034	S	Screw, HSH (M8x35)	4
125	701382	PTFE	Seal, HPS w/SS	3
	44925	FPM	Seal, HPS w/SS	3
	46652	HT	Seal, HPS w/SS (ALTERNATE EPDM)	3
139	45156	SS	Plug, Inlet, (1/2"-14 NPT)	1
143	17547	NBR	O-Ring, Adapter, Inner - 85D	3
	11685	FPM	O-Ring, Adapter, Inner - 85D	3
	◆ 46648	EPDM	O-Ring, Adapter, Inner - 85D	3
150	44060	SS	Adapter, Inlet Valve	3
154	43893	NBR	O-Ring, Adapter, Outer - 80D	3
	44927	FPM	O-Ring, Adapter, Outer	3
	◆ 46647	EPDM	O-Ring, Adapter, Outer - 80D	3
155	26089	NBR	O-Ring, Spacer - 80D	3
	11377	FPM	O-Ring, Spacer - 80D	3
	◆ 46649	EPDM	O-Ring, Spacer - 80D	3
157	44059	SS	Spacer, Discharge Valve	3
159	26089	NBR	O-Ring, Spacer - 80D	3
	11377	FPM	O-Ring, Spacer - 80D	3
	◆ 46649	EPDM	O-Ring, Spacer - 80D	3
164	44058	SS	Seat	6
165	44001	NBR	O-Ring, Seat - 80D	6
	44928	FPM	O-Ring, Seat - 80D	6
	◆ 46650	EPDM	O-Ring, Seat - 80D	6
166	44057	SS	Valve	6
167	44056	SS	Spring	6
168	44055	SS	Retainer, Spring	6
● 185	48558	SSL	Manifold, Discharge	1 ●
186	15847	S	Lockwasher, Split (M10)	6
188	87950	S	Screw, HSH (M10x35)	2
189	87952	S	Screw, HSH (M10x55)	4
250	118672	STCP	Protector, Shaft	1
260	30612	STZP	Rail Assy, Angle (Incls: 26246, 30901, 30910, 30920)	1
270	30246	STL	Pulley & Key Assy (Incls: 30032, 30047)	1
			[See Drive Packages, Tech Bulletin 03]	
277	34422	AL	Bell Housing Assy (56C-145FR, 2 Hp)	1
	34423	AL	Bell Housing Assy (182TC-184TC, 7.5 Hp)	1
278	34394	AL	Flexible Coupling Assy (M16.5 to 5/8")	1
	34395	AL	Flexible Coupling Assy (M16.5 to 1-1/8")	1
280	—		BD Motors [See Individual Data Sheet]	1
● 283	34334		Kit, Oil Drain	1 ●
● 290	6104		Gasket, Liquid (1 oz.)	1 ●
● 298	34960	STZP	Clutch, Assy Single Groove, 16.5mm, 12VDC	1 ●
●	34965	STZP	Clutch, Assy Dual Groove, 16.5mm, 12VDC	1 ●
● 299	816719	SSL	Head, Complete	1 ●

EXPLODED VIEW

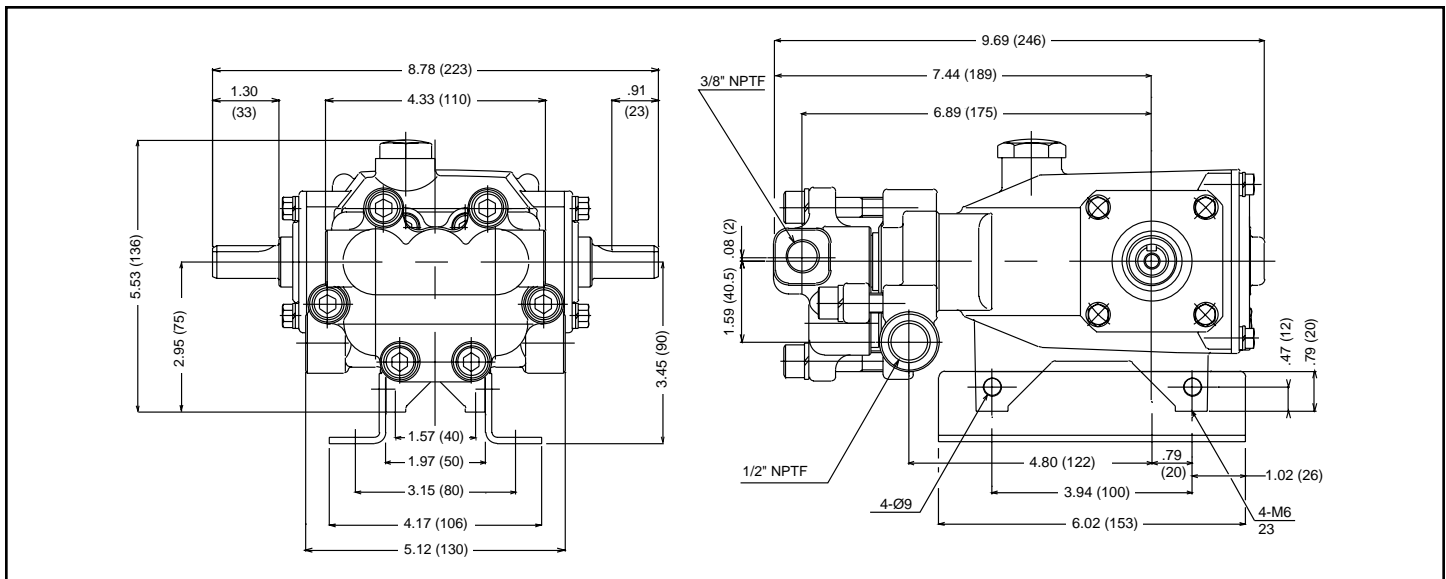


Models
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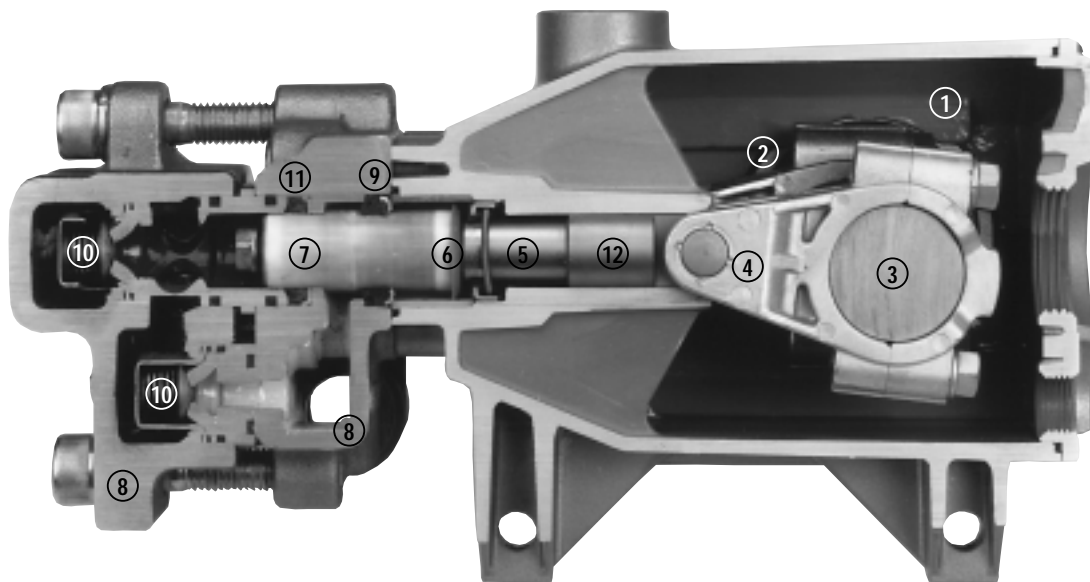
	P/N	MATL		
300	<i>TBA</i>	<i>NBR / PTFE</i>	Kit, Seal (Incls: 98,106,125,143,154,155,159)	1
	33309	FPM	Kit, Seal (Incls: 98,106,125,143,154,155,159)	1
	◆ 33944	EPDM	Kit, Seal (Incls: 98,106,125,143,154,155,159)	1
310	30982	NBR	Kit, Valve (Incls: 143,154,159,163,164,166,167,168)	1
	31216	FPM	Kit, Valve (Incls: 143,154,159,163,164,166,167,168)	1
	◆ 31217	EPDM	Kit, Valve (Incls: 143,154,159,163,164,166,167,168)	1
350	30696	STZP	Plier, Reverse	1
● —	711500	SS	C.A.T. (For R.O. or Industrial Applications)	1 ●
● —	711502	SS	Adapter (2 per C.A.T.) (See Data Sheet for complete selection)	2 ●

● Industrial discount. *Italics are optional items.* ◆ Silicone oil/grease required. **C.A.T. highly recommended for pressurized inlet, R.O. and Industrial applications.**
 See Tech Bulletins 02, 03, 24, 36, 43, 73, 74, 77 and 83 for additional information.

MATERIAL CODES (Not Part of Part Number): AL=Aluminum CC=Ceramic CM=Chrome-moly EPDM=Ethylene Propylene Diene Monomer FPM=Fluorocarbon (Viton®)
 HS=High Strength HT=Hi-Temp (EPDM Alternative) NBR=Medium Nitrile (Buna-N) PVDF=Fluoroplastic (High Strength) RTP=Reinforced Composite
 S=304SS SNG=Special Blend (Buna) SS=316SS SSL=316SS/Low Carbon STCP=Steel/Chrome Plated STL=Steel STZP=Steel/Zinc Plated
 ORDER CODES: Add .3 to model number for HT, .0110 for FPM (Viton®), .0220 for EPDM. Consult factory for pricing.



Models 3CP1221, 3CP1231, 3CP1241.77



- 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** are hardened, surface plated for wear resistance, with 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, graphite impregnated, solid ceramic **plungers** are abrasion resistant and result in extended seal life.
- 8 **Manifolds** are high tensile strength 316 stainless steel for liquid compatibility and long term, continuous duty.
- 9 100% wet **seal** design adds to service life by allowing pumped liquids to cool and lubricate on both sides.
- 10 316 stainless steel **valves, seats and springs** provide corrosion-resistance, positive seating and long life.
- 11 Specially formulated, CAT PUMP exclusive, **Hi-Pressure Seals** 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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World Headquarters

CAT PUMPS

1681 - 94th Lane N.E. Minneapolis, MN 55449-4324

Phone (763) 780-5440 — FAX (763) 780-2958

e-mail: sales@catpumps.com

www.catpumps.com

International Inquiries

FAX (763) 785-4329

e-mail: intlsales@catpumps.com



"The World's Most Dependable Pumps"

CAT PUMPS (U.K.) LTD.

1 Fleet Business Park, Sandy Lane, Church Crookham, Fleet

Hampshire GU13 0BF, England

Phone Fleet 44 1252-622031 — Fax 44 1252-626655

N.V. CAT PUMPS INTERNATIONAL S.A.

Heiveldekens 6A, 2550 Kontich, Belgium

Phone 32-3-450.71.50 — Fax 32-3-450.71.51

e-mail: cpi@catpumps.be www.catpumps.be

CAT PUMPS DEUTSCHLAND GmbH

Buchwiese 2, D-65510 Idstein, Germany

Phone 49 6126-93030 — Fax 49 6126-930333

e-mail: catpumps@t-online.de www.catpumps.de