



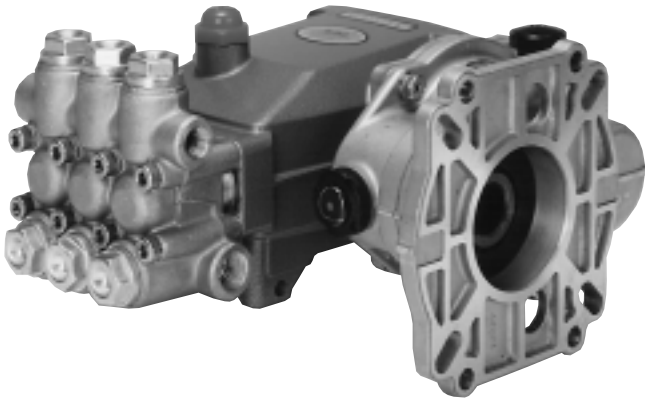
Direct Drive CP Gearbox

Model **8076**

Used on Models 5CP3120G1
5CP5150G1

Model **8077**

Used on Models 5CP3120G118
5CP5150G118



PUMP FEATURES

- Polished solid ceramic plungers last long and resist abrasion.
- Triplex plunger design providing low pulsation and quiet operation.
- Internally lubricated and cooled packings for extended life.

GEARBOX UNIT FEATURES

- No pulley selection or adjustment for quick, easy gas engine mounting.
- Totally sealed housing providing independent gearbox lubrication for maximum service life.
- Hardened steel helical design gears for smooth, quiet operation.
- Multiple engine shaft and flange options for flexibility.

SPECIFICATIONS

5CP3120 Pump with 8076 or 8077 Gearbox

	U.S. Measure	Metric Measure
Flow.....	4.5 GPM	(17 L/M)
Pressure Range.....	100 to 3500 PSI	(7 to 245 BAR)
Inlet Pressure Range.....	Flooded to 60 PSI	(Flooded to 4 BAR)
Maximum Pump RPM.....	1645 RPM	(1645 RPM)
Maximum Engine RPM.....	3353 RPM	(3353 RPM)
Horsepower-Electric.....	10.8 HP	(10.8 HP)
Bore.....	0.630"	(16 mm)
Stroke.....	0.709"	(18 mm)
Maximum Liquid Temperature.....	160°F	(71°C)
Pump Crankcase Capacity.....	17 oz.	(0.57 L)
Weight.....	32.4 oz.	(14.7 kg)
Dimensions w/Gearbox.....	6.42 x 10.74 x 10.94"	(163 x 273 x 278 mm)

5CP5150 Pump with 8076 or 8077 Gearbox

	U.S. Measure	Metric Measure
Flow.....	5.0 GPM	(19 L/M)
Pressure Range.....	100 to 3000 PSI	(7 to 210 BAR)
Inlet Pressure Range.....	Flooded to 60 PSI	(Flooded to 4 BAR)
Maximum Pump RPM.....	1570 RPM	(1570 RPM)
Maximum Engine RPM.....	3200 RPM	(3200 RPM)
Horsepower-Electric.....	10.3 HP	(10.3 HP)
Bore.....	0.709"	(18 mm)
Stroke.....	0.650"	(16.5 mm)
Maximum Liquid Temperature.....	160°F	(71°C)
Pump Crankcase Capacity.....	17 oz.	(0.57 L)
Weight.....	32.4 oz.	(14.7 kg)
Dimensions w/Gearbox.....	6.42 x 10.74 x 10.94"	(163 x 273 x 278 mm)

COMMON SPECIFICATIONS

	U.S. Measure	Metric Measure
Gear Ratio.....	2.0384 to 1	(2.0384 to 1)
Mounting Face.....	6-1/2"	(165 mm)
Engine Shaft Diameter.....	1" or 1-1/8"	(25.4 or 28.5 mm)
Engine Shaft Length.....	3-1/4"	(82.6 mm)
Gearbox Capacity.....	10 oz.	(0.30 L)
Weight.....	6.38 lbs.	(2.9 kg)
Dimensions.....	6.42 x 4.53 x 8.19"	(163 x 115 x 208 mm)

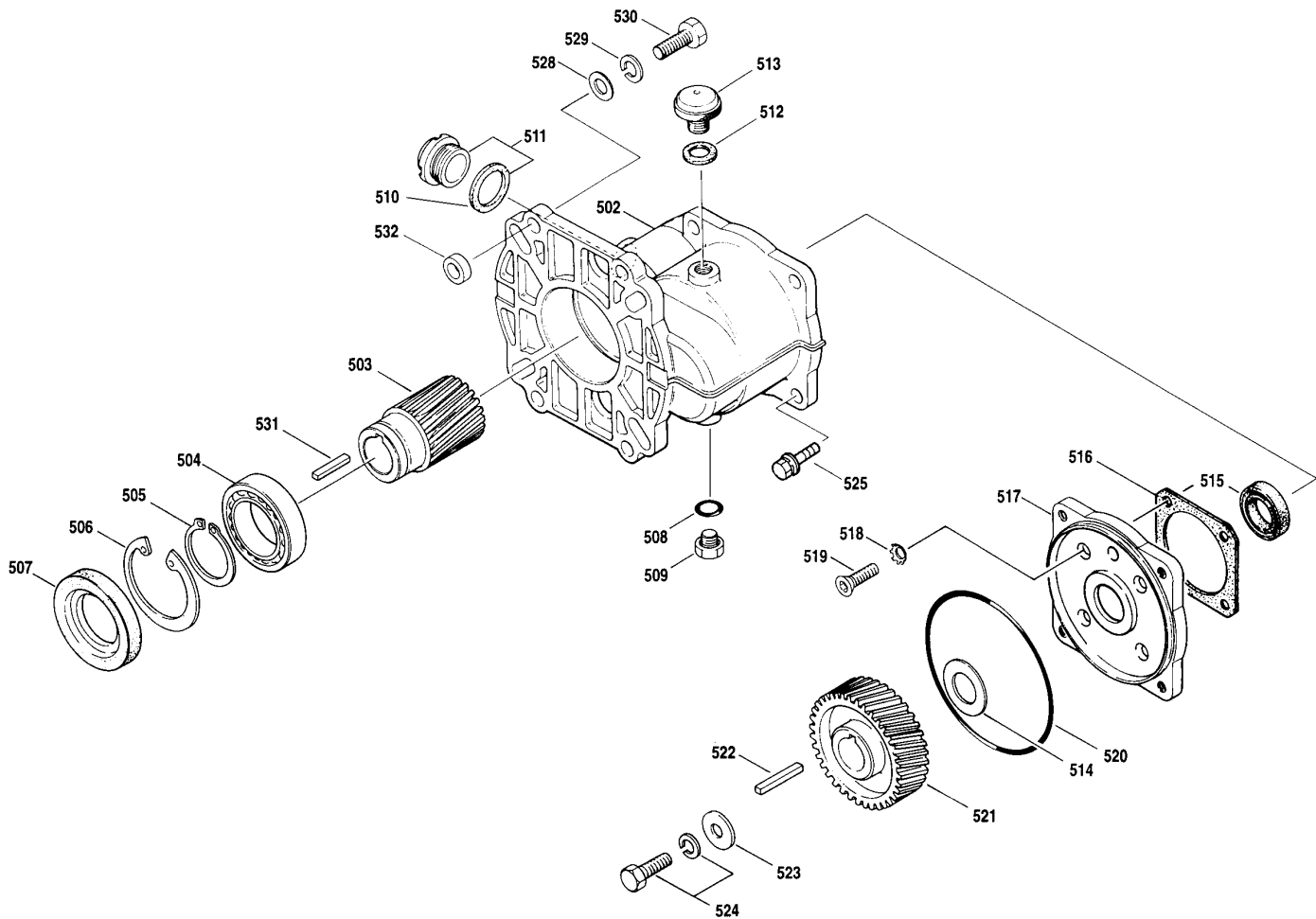
“Customer confidence is our greatest asset”

EXPLODED VIEW

February 2005

DIRECT DRIVE GEARBOX MODELS

8076, 8077



PARTS LIST

ITEM	P/N	MATL	DESCRIPTION	GEARBOX PUMP MODEL	QTY.	ITEM	P/N	MATL	DESCRIPTION	GEARBOX PUMP MODEL	QTY.
500	8076	AL	Gearbox, Helical (1" Shaft)	5CP3120G1, 5CP5150G1	1	515	44679	NBR	Seal, Oil, Bearing Cover	All Models	1
	8077	AL	Gearbox, Helical (1-1/8" Shaft)	5CP3120G118, 5CP5150G118	1	516	46914	—	Gasket, Flange	All Models	1
502	44673	AL	Housing	All Models	1	517	46913	AL	Flange, Bearing Cover	All Models	1
503	44675	STL	Gear, Pinion 1"	5CP3120G1, 5CP5150G1	1	518	46123	STZP	Lockwasher, Conical (M8)	All Models	4
	44690	STL	Gear, Pinion 1-1/8"	5CP3120G118, 5CP5150G118	1	519	46124	STZP	Screw, FH (M8x16)	All Models	4
504	56110	STL	Bearing, Ball	All Models	1	520	45881	NBR	O-Ring, Flange	All Models	1
505	55459	STL	Ring, Retaining (External)	All Models	1	521	44711	STL	Gear, Helical	All Models	1
506	146423	STL	Ring, Retaining (Internal)	All Models	1	522	101814	STL	Key (M6 x 6 x 27)	All Models	1
507	44676	NBR	Seal, Oil, Pinion	All Models	1	523	26118	STZP	Washer, Flat (M8)	All Models	1
508	23170	NBR	O-Ring, Drain Plug - 70D	All Models	1	524	92521	STZP	Screw, Sems HHC (M8x20)	All Models	1
509	25625	STCP	Plug, Oil Drain (1/4"x19BSP)	All Models	1	525	92530	STZP	Screw, Sems HH (M8x25)	All Models	4
510	44428	NBR	Gasket, Flat Flex, Oil Gauge - 80D	All Models	1	528	12490	STZP	Washer, Flat (M10)	All Models	4
511	92241	—	Gauge, Bubble Oil w/Gasket	All Models	1	529	12503	STZP	Lockwasher, Split (M10)	All Models	4
512	103685	NBR	Gasket, Oil Cap	All Models	1	530	34100	STZP	Screw, HH (3/8-16 x 1-3/8")	All Models	4
513	44374	—	Cap, Oil Filler	All Models	1	531	44455	STL	Key (1/4"x1/4"x2-5/32")	All Models	1
514	20129	STZP	Washer (M20)	All Models	1	532	34042	AL	Spacer	All Models	4

MATERIAL CODES (Not Part of Part Number): AL=Aluminum NBR=Medium Nitrile (Buna-N) STL=Steel STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated

Before you begin servicing your pump, **Please carefully read OPERATOR'S MANUAL and separate SERVICE MANUAL** for special lubrication, disassembly and reassembly information.

SERVICING THE GEARBOX

DISASSEMBLY

1. **Completely drain lube** from gearbox housing.
2. Remove the four HHC screws which fasten the gearbox to the engine and separate gearbox and pump from engine.
3. Remove the four HH screws which fasten the gearbox to the bearing cover flange and separate gearbox housing from pump.
4. Place gearbox housing on work surface with **seal facing up**.
5. Remove pinion oil seal by inserting screwdriver between pinion gear and inner lid of seal and pry out. **Seal will be damaged and must be replaced.**
6. Remove large retaining ring in groove below the pinion oil seal using retaining ring pliers and set aside for re-use.
7. Remove the pinion gear and bearing. Turn gearbox housing over onto **engine mount flange surface**. Bearing is pressed into position so it is necessary to press pinion and bearing out from rear. Set gearbox housing aside.
8. Remove bearing from pinion gear. Using reverse pliers remove retaining ring from groove on pinion gear and press bearing from pinion. Set aside pinion, bearing and retaining ring.
9. Remove hex machined retaining screw, lockwasher and flat holding washer from center of helical drive gear on pump shaft.
10. Slip helical drive gear from crankshaft.
11. Remove key from keyway in pump crankshaft.

At this point the gearbox has been disassembled. Now begin examination of the gearbox parts for wear and reassembly.

While the gearbox is in this state of disassembly, it is advisable to examine your **pump** for any indication of wear.

If any of the following conditions are present, **removal of the bearing cover flange** is necessary. **Only trained technicians should service drive end.**

- Leakage between bearing cover flange and pump crankcase.
- Evidence of water in pump crankcase.
- Evidence of water in gearbox crankcase.

NOTE: If removal of bearing cover flange is necessary, completely drain oil from crankcase of pump.

REMOVING BEARING COVER FLANGE

1. Remove four socket head cap screws, lockwashers and washers from bearing cover flange.
2. Tap flange with soft mallet to separate from pump crankcase.
3. Examine pump bearing and replace if worn.
4. Examine oil seal in bearing cover flange and replace if worn.
5. Examine gasket on **outside** of bearing cover flange and replace if cut or cracked.

6. Examine o-ring on **inside** outer groove of bearing cover flange and replace if cut or worn.

If further pump servicing is needed, refer to your pump service manual, and Tech Bulletin on "Servicing Crankcase Section".

REPLACING BEARING COVER FLANGE

1. Line up the four holes and mount gasket on outside of bearing cover flange.
2. Press new seal into bearing cover flange after **exercising caution not to cut seal on keyway edge**.
3. Line up four inside mounting holes on bearing cover flange with four holes on pump.
4. Apply Loctite-242 to the threaded area of screws before replacing and torque per chart.

REASSEMBLY

1. Insert key into pump crankshaft keyway until flush with end of shaft.
2. Examine helical drive gear teeth for wear and replace if necessary. Line up keyway on gear with pump shaft keyway and key and slide onto shaft.
3. Install flat holding washer and retaining screw w/lockwasher onto shaft and torque per chart.
4. Examine gearbox oil gauge and oil drain plug for any evidence of leaking and replace o-ring and gasket if necessary.
5. Examine pinion bearing for wear and replace if necessary.
6. Examine pinion gear teeth for wear and replace if necessary.
7. Press bearing over pinion gear until seated on shoulder.
8. Install retaining ring on pinion gear and **snap into groove**.
9. Insert pinion and gear assembly into gearbox housing and press into position until seated on shoulder. **Groove for large retaining ring must be visible.**
10. Insert large retaining ring into pinion bearing housing and snap into groove.
11. Lubricate I.D. and O.D. of new pinion oil seal. Place oil seal at mouth of pinion bearing housing with **garter spring facing down**. Carefully press seal into position until seated on retaining ring. **Keep seal square in position to avoid inner lip hanging up on pinion gear edge.**
12. Rotate pinion gear so keyway is up. Mount assembled gearbox housing onto pump shaft with helical drive gear. NOTE: Carefully match gear teeth and line up mounting holes. **Place engine mounting flange in forward position.**
13. Install four screws to fasten gearbox to bearing cover flange and torque per chart.

MOUNTING PUMP WITH GEARBOX ONTO ENGINE

1. **Rotate crankshaft of engine until keyway is at top.**
2. Insert key into keyway and generously apply Loctite 76764 antiseize lubricant to engine shaft.
3. Line up keyway of pinion gear and engine shaft and carefully slip gearbox onto engine shaft until flush with engine face. Install four hex machined screws and torque per chart.

NOTE: Due to varying engine shaft lengths it may be necessary to install a smaller **spacer** on each of the four (4) hex **machined screws** between gear box flange and engine face.

4. **Before starting operation**, fill gearbox housing to oil gauge dot with 80-90 weight **gear lube** and fill crankcase of pump to oil gauge dot with CAT PUMPS Special Premium Grade Non-detergent oil.

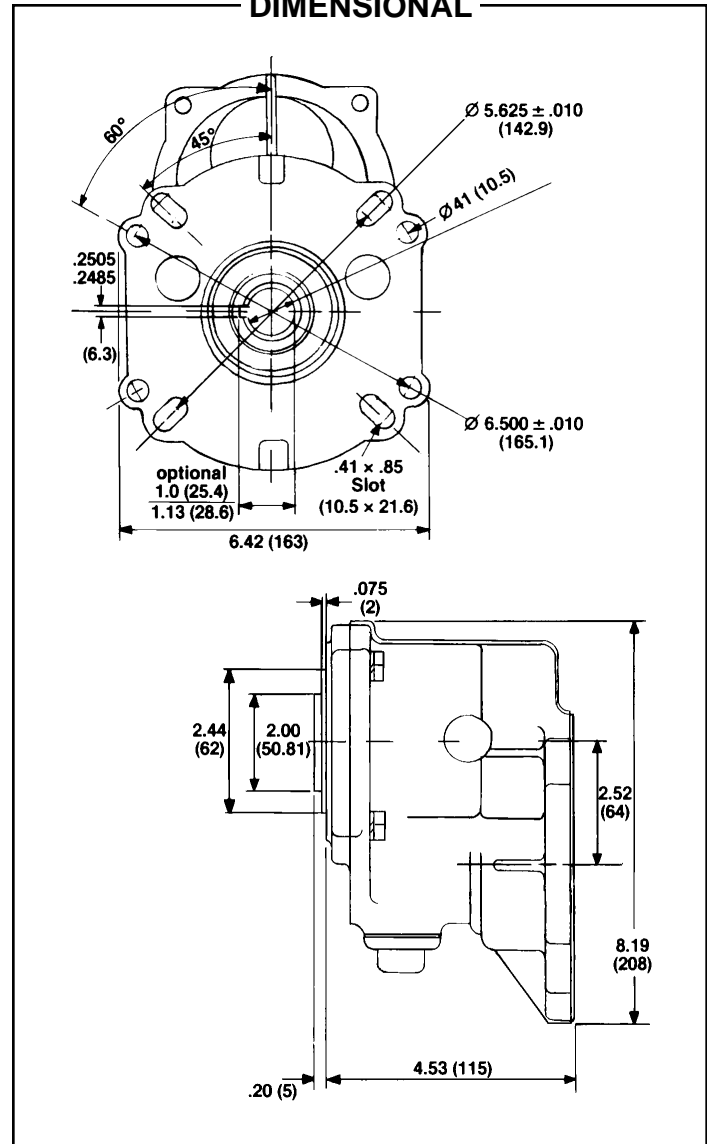
FIELD CONVERSION FOR STANDARD PUMP

To convert from a standard pump to a gearbox pump, remove the existing bearing cover, o-ring and four combination head screws. Replace with new gearbox bearing cover flange, flange gasket, four lockwashers and four new screws.

TORQUE CHART

Description	Thread	Tool	Torque
Gearbox Housing to Bearing Cover Flange	M8	13 mm	70 in. lbs. (7.8 Nm)
Bearing Cover Flange to Pump (M8)	M8	5 mm	125 in. lbs. (14.1 Nm)
Drive Gear Retaining Screw	M8	13 mm	110 in. lbs. (12.3 Nm)
Engine Mounting Screw	3/8-16	14 mm	110 in. lbs. (12.3 Nm)

DIMENSIONAL



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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