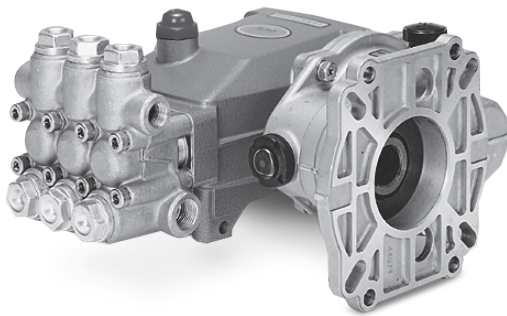


# DATA SHEET

## DIRECT DRIVE CP GEARBOXES



- Models:**
- 8076** Used on all 5CP models with 1" gearbox drive
  - 8077** Used on all 5CP models with 1½" gearbox drive
  - 8081** Used on all 7CP models with 1" gearbox drive
  - 8072** Used on all 7CP models with 1½" gearbox drive



Model 5CP3120G1 with 8076 Gearbox Shown

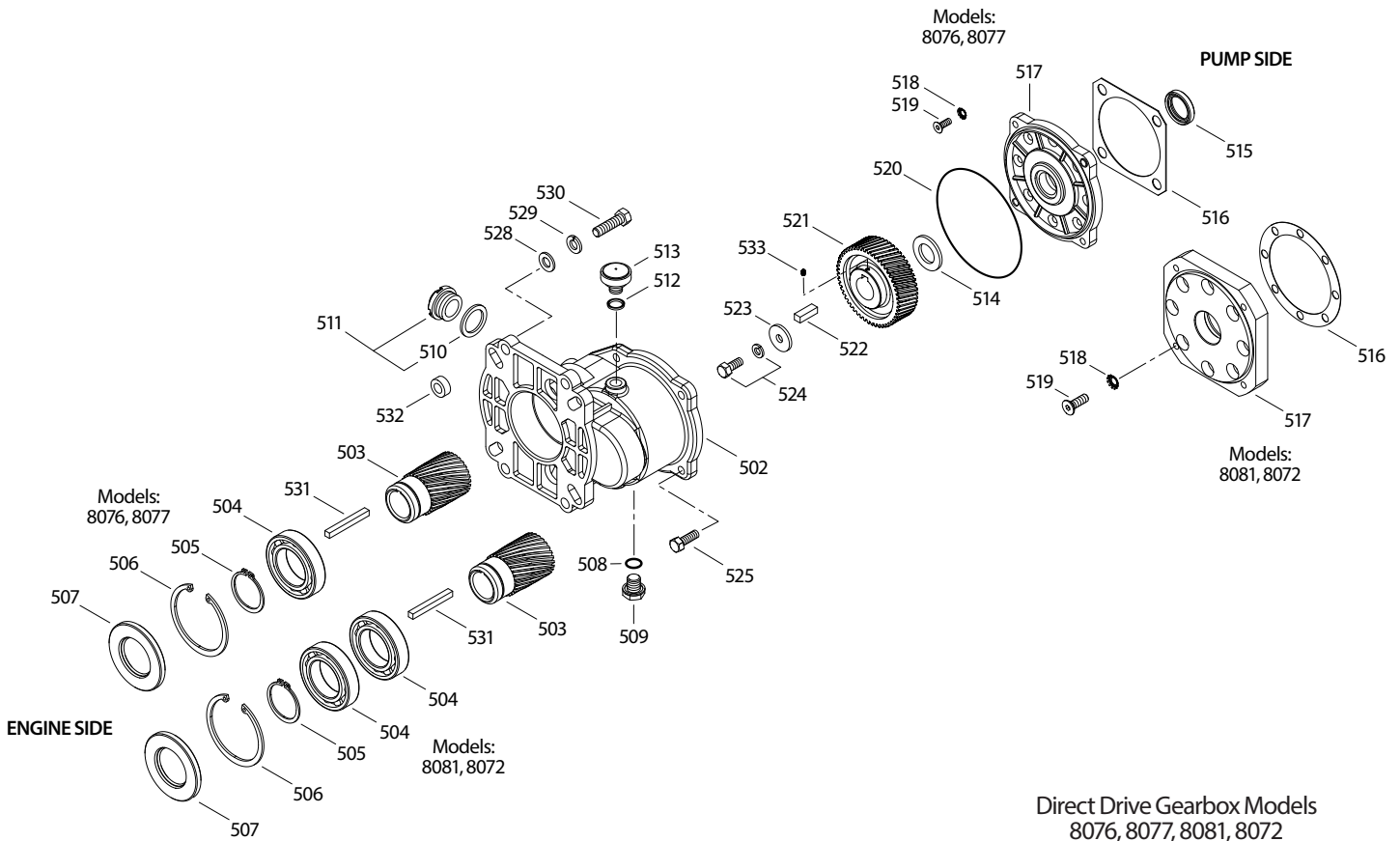
| SPECIFICATIONS          | U.S. Measure        | Metric Measure     |
|-------------------------|---------------------|--------------------|
| Gear Ratio              | 2.04 to 1           | 2.04 to 1          |
| Mounting Face           | 6½"                 | 165 mm             |
| Engine Shaft Diameter:  |                     |                    |
| 8076, 8081              | 1"                  | 25.4 mm            |
| 8077, 8072              | 1½"                 | 28.5 mm            |
| Engine Shaft Length     | ¾"                  | 82.6 mm            |
| Gearbox Capacity        | 10 oz               | 0.30 l             |
| Weight:                 |                     |                    |
| 8076, 8077              | 6.38 lbs            | 2.9 kg             |
| 8081, 8072              | 8.03 lbs            | 3.6 kg             |
| Dimensions (8076, 8077) | 8.19 x 4.53 x 6.42" | 208 x 115 x 163 mm |
| Dimensions (8081, 8072) | 8.19 x 5.18 x 6.42" | 208 x 132 x 163 mm |

### GEARBOX FEATURES

- No pulley selection or need for adjustment allows for quick, trouble-free gas engine mounting.
- Compact flange mount permits simple, direct mounting to most gas engines.\*
- Sealed housing provides independent gearbox lubrication for maximum service life.
- Hardened steel helical gears ensure smooth, quiet operation.

\* Gas Mounting Flange: SAE J609, Flange B, Extensions 4 (1" Ø) or 4a (1½" Ø)  
 Shaft Length=¾", Pilot Ø= 5¾", B.C. Ø= 6½", Thread= ¾"-16 UNCTAP

# EXPLODED VIEW



Direct Drive Gearbox Models  
8076, 8077, 8081, 8072  
February 2025

## PARTS LIST

| ITEM | P/N           | MATL   | DESCRIPTION                   | GEARBOX MODEL | QTY | ITEM | P/N           | MATL   | DESCRIPTION                          | GEARBOX MODEL | QTY |
|------|---------------|--------|-------------------------------|---------------|-----|------|---------------|--------|--------------------------------------|---------------|-----|
| 502  | <b>44673</b>  | AL     | Housing                       | 8076, 8077    | 1   | 516  | <b>46914</b>  | —      | Gasket, Flange                       | 8076, 8077    | 1   |
|      | <b>45351</b>  | AL     | Housing                       | 8081, 8072    | 1   |      | <b>31383</b>  | NBR    | Gasket, Flange                       | 8081, 8072    | 1   |
| 503  | <b>44675</b>  | STL    | Gear, Pinion (1")             | 8076          | 1   | 517  | <b>46913</b>  | AL     | Flange, Bearing Cover                | 8076, 8077    | 1   |
|      | <b>44690</b>  | STL    | Gear, Pinion (1½")            | 8077          | 1   |      | <b>76141</b>  | AL     | Flange, Bearing Cover                | 8081, 8072    | 1   |
|      | <b>45352</b>  | STL    | Gear, Pinion (1")             | 8081          | 1   | 518  | <b>126746</b> | STCP R | Lockwasher, Conical (M8)             | 8076, 8077    | 4   |
|      | <b>45358</b>  | STL    | Gear, Pinion (1½")            | 8072          | 1   |      | <b>992879</b> | S      | Lockwasher, Conical (M8)             | 8081, 8072    | 8   |
| 504  | <b>56110</b>  | STL    | Bearing, Ball                 | 8076, 8077    | 1   | 519  | <b>46124</b>  | STL    | Screw, FH (M8 x 16)                  | 8076, 8077    | 4   |
|      | <b>56110</b>  | STL    | Bearing, Ball                 | 8081, 8072    | 2   |      | <b>992877</b> | S      | Screw, FH (M8 x 25)                  | 8081, 8072    | 8   |
| 505  | 55459         | STL    | Ring, Retaining (External)    | All Models    | 1   | 520  | 14045         | NBR    | O-Ring, Flange                       | All Models    | 1   |
| 506  | 146423        | STL    | Ring, Retaining (Internal)    | All Models    | 1   | 521  | <b>44711</b>  | STL    | Gear, Helical                        | 8076, 8077    | 1   |
| 507  | <b>44676</b>  | NBR    | Seal, Oil, Pinion             | 8076, 8077    | 1   |      | <b>44680</b>  | STL    | Gear, Helical                        | 8081, 8072    | 1   |
|      | <b>32174</b>  | FPM    | Seal, Oil, Pinion             | 8081, 8072    | 1   | 522  | <b>101814</b> | STL    | Key (M6 x 6 x 27)                    | 8076, 8077    | 1   |
| 508  | 23170         | NBR    | O-Ring, Drain Plug            | All Models    | 1   |      | <b>44459</b>  | STL    | Key (M8 x 7 x 24)                    | 8081, 8072    | 1   |
| 509  | 25625         | STCP   | Plug, Oil Drain (¼" x 19 BSP) | All Models    | 1   | 523  | 126579        | STZP R | Washer, Flat (M8)                    | All Models    | 1   |
| 510  | 44428         | NBR    | Gasket, Flat Flex, Oil Gauge  | All Models    | 1   | 524  | 126258        | STCP R | Screw, Retaining, HHC Sems (M8 x 20) | All Models    | 1   |
| 511  | 92241         | PC     | Gauge, Bubble Oil with Gasket | All Models    | 1   | 525  | 126544        | STCP R | Screw, HH Sems (M8 x 25)             | All Models    | 4   |
| 512  | 103685        | NBR    | Gasket, Oil Cap               | All Models    | 1   | 528  | 126574        | STZP R | Washer, Flat (M10)                   | All Models    | 4   |
| 513  | 44374         | —      | Cap, Oil Filler (Black)       | All Models    | 1   | 529  | 126231        | STCP R | Lockwasher, (M10)                    | All Models    | 4   |
| 514  | <b>126577</b> | STCP R | Washer (M20)                  | 8076, 8077    | 1   | 530  | 126543        | STCP R | Screw, HH (¾"-16 x 1¾")              | All Models    | 4   |
|      | <b>31414</b>  | STL    | Spacer (M24)                  | 8081, 8072    | 1   | 531  | 44455         | STL    | Key (¼" x ¼" x 2½/32")               | All Models    | 1   |
| 515  | <b>44679</b>  | NBR    | Seal, Oil, Bearing Cover      | 8076, 8077    | 1   | 532  | 34042         | AL     | Spacers                              | All Models    | 4   |
|      | <b>49190</b>  | NBR    | Seal, Oil, Bearing Cover      | 8081, 8072    | 1   | 533  | <b>132899</b> | STL    | Screw, Set (M5 x 0.8)                | 8081, 8072    | 1   |

**Bold print part numbers are unique to a particular pump model** R Components comply with RoHS Directive  
MATERIAL CODES (Not Part of Part Number): AL=Aluminum FPM=Fluorocarbon NBR=Medium Nitrile (Buna-N) PC=Poly Carbonate  
S=304SS STL=Steel STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated

## FIELD CONVERSION FROM STANDARD PUMP

Follow these instructions to convert a standard pump to a gearbox pump.

1. Drain oil from pump.
2. Remove the four (4) Hex Head Combination (HHC) screws and bearing cover from the pump.
3. On 7CP models, remove outer race from bearing cover by gently pounding it on a work surface to unseat it. Inspect outer race for excessive wear or damage.  
If damage is found, replace with a new outer race.

**Note:** Leave bearing on crankshaft.

4. Discard bearing cover, O-ring and gasket. Replacements come with the new gearbox.
5. On 7CP models, carefully remove bearing cover flange oil seal with a small tip screwdriver. This oil seal needs to be reused in the bearing cover flange.
6. The gearbox comes with a bearing cover flange, bearing cover flange O-ring, oil seal (not on 7CP models), gasket, key, anti-seize, eight (8) lock washers and four (4) or eight (8) hex socket flat head screws.
7. Install oil seal with flat side down into the pump side of bearing cover flange. The grooved side with spring should face pump.  
Do not grease seal.
8. Press outer race into new bearing cover flange with tapered side facing pump. Confirm outer race is completely seated in bearing cover flange before mounting onto the pump.
9. Ensure the surfaces where the gasket seals and crankcase meet are clean and free of debris.
10. Place four (4) or eight-hole gasket onto the pump side of bearing cover flange, ensuring the holes in the gasket align with the holes of the bearing cover flange.
11. Lubricate and install O-ring into groove on engine side of bearing cover flange.
12. Slide lock washer over each screw. Apply Loctite® 242® to screw threads.
13. Slide bearing cover flange over pump crankshaft with cast number facing forward towards manifold. The top upper right and lower left corner holes have a raised surface to act as a guide and locking position for the gearbox.
14. Install four (4) or eight (8) hex socket flat head screws with lock washers through holes in bearing cover flange and secure to pump crankcase. Using 5 mm tool tighten per torque chart.
15. Slide washer or spacer (7CP models) over pump crankshaft.
16. Lubricate pump crankshaft keyway with anti-seize (see PN 6106) and install key.
17. Align keyway of helical drive gear with key on pump crankshaft and slide on helical drive gear.
18. Slide flat holding washer over HHC screw. Apply Loctite® 609® to threads of HHC screw. Hand thread in HHC screw to pump crankshaft. Using 13 mm tool tighten per torque chart.
19. On 7CP models, apply Loctite® 242® to threads of set screw. Install set screw into threaded hole of the helical gear. Using M4 tool tighten per torque chart.
20. Grasp pump with helical drive gear with both hands and slide into gearbox housing. Carefully match helical drive gear teeth with pinion gear teeth.
21. Secure gearbox housing to bearing cover flange by inserting HHC screws from engine side of gearbox housing and hand thread in. Using 13 mm tool tighten per torque chart.
22. Proceed to **Mounting Pump With Gearbox Onto Engine.**

## MOUNTING PUMP WITH GEARBOX ONTO ENGINE

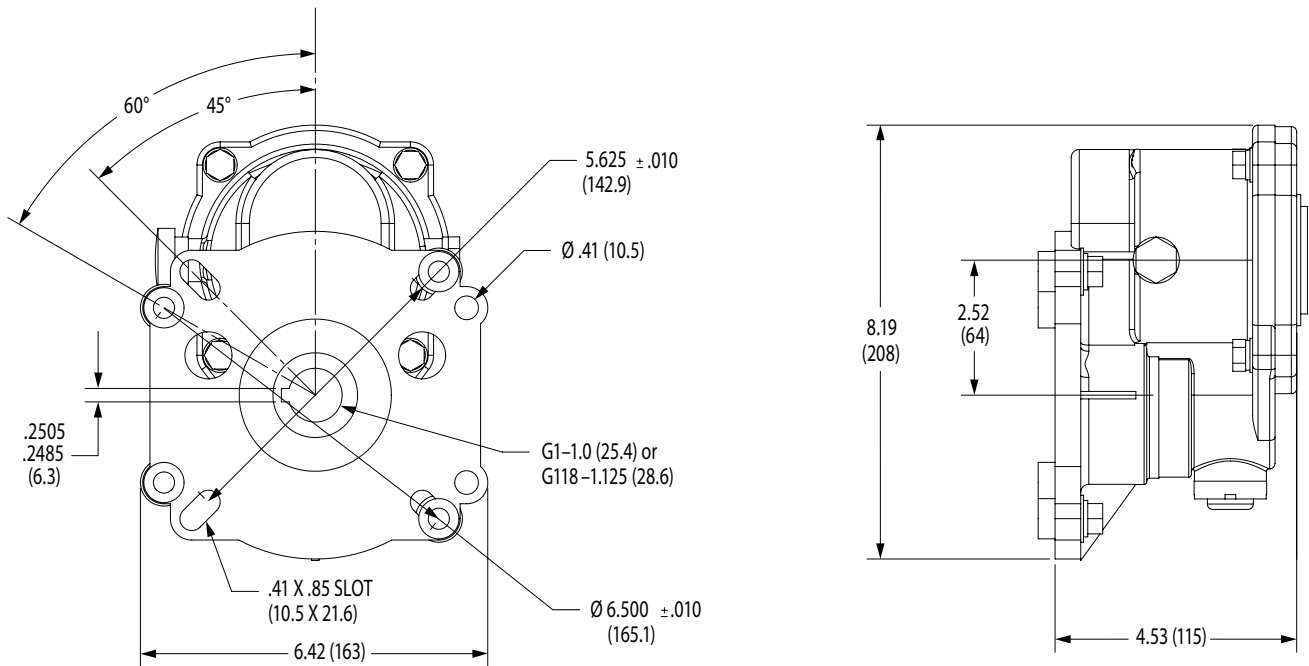
1. Rotate crankshaft of engine until keyway is at the top.
2. Apply anti-seize lubricant (see PN 6106) to engine shaft and keyway. Insert key supplied by Cat Pumps into engine keyway.
3. Line up keyway of gearbox pinion gear and engine shaft and carefully slide pump with gearbox onto engine shaft until flush with engine face.

**Note:** Due to varying engine shaft lengths it may be necessary to install a small spacer on each of the four (4) hex head screws between the gearbox flange and engine face.

4. Slide lock washer and then flat washer onto each hex head screw. Hand thread hex head screws to engine. Using  $\frac{9}{16}$ " tool tighten per torque chart.
5. Before starting operation, fill gearbox housing to the center red dot located on the oil gauge with 80W-140 weight gear lube (see PN 6110). Fill pump crankcase to center of red dot located on the oil gauge with Cat Pumps high-pressure pump oil (see PN 6107).

Loctite®, 242® and 609® are registered trademarks of the Henkel Corporation.

## DIMENSIONAL



## TORQUE CHART

| Description                             | Thread  | Tool     | Torque               |
|---|---------|----------|----------------------|
| Bearing Cover Flange to Pump (M8)       | M8      | M5 Allen | 125 in-lbs (14.1 Nm) |
| Drive Gear Retaining Screw              | M8      | 13 mm    | 110 in-lbs (12.3 Nm) |
| Gearbox Housing to Bearing Cover Flange | M8      | 13 mm    | 70 in-lbs (8 Nm)     |
| Helical Gear Set Screw                  | M5      | M4 Allen | 50 in-lbs (5.4 Nm)   |
| Engine Mounting Screw                   | 3/8"-16 | 3/16"    | 110 in-lbs (12.3 Nm) |

### ⚠ CAUTIONS AND WARNINGS

All high-pressure systems require a primary pressure regulating device (e.g. regulator, unloader) and a secondary pressure relief device (e.g. 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/dynamic-literature/cautions-and-warnings](http://www.catpumps.com/dynamic-literature/cautions-and-warnings) or can be requested directly from Cat Pumps.

### WARRANTY

View the Limited Warranty online at [www.catpumps.com/literature/cat-pumps-limited-warranty](http://www.catpumps.com/literature/cat-pumps-limited-warranty)