

## PA110B / PA140A Thrust Bearing Product Improvement

PACCAR Winch Division announces the release of Thrust Bearing Service Kit, part number 64450.

This service kit permits updating the primary drive area of the gear train with larger thrust bearings and races for improved wear and service life, specifically in applications involving high or very frequent cyclic drum clutch release (drive away) operation. The kit includes parts that may experience excessive wear when used in these specific applications.

This product improvement has been incorporated into factory production winches starting with winch serial number 1000900.

64450 Service Kit Material List - CAT P/N's

ITEM	PART NO	DESCRIPTION	QTY
1	108142 *	COVER	1
2	1T-0132	O-RING	1
3	392-7831	THRUST WASHER	2
4	231-4088	NEEDLE ROLLER BEARING	2
5	392-7832	BEARING RETAINER	1
6	231-4087	THRUST WASHER	1
7	105148 *	THRUST WASHER	1
8	231-2238	PRESSURE PLATE	1
9	4H-6730	O-RING	1
10	1M-9015	O-RING	1
11	4M-0661	O-RING	1
12	108929 *	BUSHING	1

\* PACCAR Winch part number. Caterpillar part number was not available at time of printing.

### INSTRUCTIONS:

#### DISASSEMBLY

- 1) Position the tractor on a level surface and drain the gear oil from the winch.
- 2) Remove the end cover (1) and thrust bearings outboard of the primary carrier clutch assembly and discard these parts.
- 3) Remove the thrust bearings at the outboard end of the primary sun gear and retain for later use.
- 4) Remove the primary carrier / clutch assembly, and set aside. Remove the trust bearing and thrust race from the pilot hub of the spring retainer and discard.
- 5) Remove the primary sun gear, thrust bearing set and secondary sun gear. Retain all parts for later use.
- 6) Remove the spring retainer and retain for later use.

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- 7) Remove the drum clutch hose guard, hose assembly and fitting from the clutch release port on the clutch / ring gear housing assembly. Retain all parts for later use.
- 8) Remove the clutch / ring gear assembly from the winch and set aside.
- 9) Clean and inspect all retained parts for signs of damage or excessive wear. Replace any part(s) exhibiting signs of damage due to excessive wear.

## **ASSEMBLY**

- 1) Disassemble the clutch / ring gear assembly, as follows:
  - a) Refer to the Ring Gear Assembly Service section in the winch service manual (publication LIT2284).
  - b) Remove and discard the existing pressure plate.
  - c) Remove the clutch piston to access the piston seals. Remove and discard the piston O-rings.
  - d) Clean all parts and replace any part(s) exhibiting signs of damage or excessive wear.
  - e) Install the new piston O-rings (items 10 & 11) into the grooves in the clutch piston. Once installed, lubricate the O-rings the petroleum jelly or light grease to aid piston installation.
  - f) Rebuild the clutch following the procedures defined the winch service manual.
  - g) Position the new pressure plate (item 8) into the clutch / ring gear housing and install as defined the winch service manual.
- 2) Refer to the Carrier / Clutch Assembly section in the winch service manual (publication LIT2284).
  - a) Disassemble the carrier / clutch assembly as defined in the winch service manual. Inspect and replace any part(s) exhibiting signs of damage or excessive wear as required.
  - b) Reassemble the carrier / clutch assembly following the procedures in the winch service manual. Position the new thrust washer (item 3) in the carrier in place of the original thrust ring and install as defined in the winch service manual.
- 3) Install a new O-ring (item 9) into the clutch / ring gear housing pilot groove and lubricate with petroleum jelly or light grease.
- 4) Install the clutch / ring gear assembly to the winch housing. Make sure the drain plug is positioned at the bottom of the winch and that the mounting flange is fully against the output ring gear mating surface. Tighten the mounting bolts to 110 lb-ft (149 N-m).
- 5) Re-install the spring retainer into the clutch piston, large diameter end first. Seat the spring retainer fully in the clutch bore.
- 6) Apply a light coat of multi-purpose grease to the new thrust washer and needle roller bearing (items 7 & 4) and install them into the winch against the spring retainer – thrust washer first, followed by the bearing.
- 7) Re-install the secondary sun gear. Align the teeth on the small end with the secondary planet gears and install fully into the spring retainer.
- 8) Re-install the small thrust bearing set into the bore of the secondary sun gear and re-install the primary sun gear onto the input shaft.
- 9) Re-install the carrier / clutch assembly into the winch, aligning the planet gear teeth with both the primary sun gear and ring gear teeth. The planet gears should extend approx ½ in. (13 mm) beyond the end of the primary sun gear.

- 10) Install the thrust bearing and washer set into the center bore of the new end cover (item 1), with the needle bearing installed between the thrust washers. Apply a coat of multi-purpose grease to the bearing set to help keep it positioned with the bore.
  - 11) Install the thrust washer (item 3) into the large bore of the end cover. Apply a coat of multi-purpose grease to the bearing set to help keep it positioned.
  - 12) Install the thrust washer (item 6) and bearing retainer (item 5) onto the pilot hub of the carrier / clutch assembly. Apply a coat of multi-purpose grease to the bearing set to help keep it positioned.
- NOTE:** Install the thrust washer (item 6) against the carrier / clutch housing **BEFORE** the bearing retainer is installed.
- 13) Apply a liberal coating of multi-purpose grease to the needle roller bearing (item 4) and install the bearing over the pilot hub of the bearing retainer (item 5).
  - 14) Install the bushing (item 12) over the center hub of the end cover.
- NOTE:** The chamfer machined on the bore of the bushing must install **TOWARD** the end cover. This chamfer permits the bushing to be properly positioned within the assembly once installed.
- 15) Install the new O-ring (item 2) into the groove of the end cover pilot and lubricate with petroleum jelly or light grease.
  - 16) Carefully install the end cover to the clutch / ring gear housing. Ensure the thrust bearings and washers remain in position and the end cover rests fully against the mounting face of the clutch / ring gear housing. Install the mounting bolts and tighten to 110 lb-ft (149 N-m).
  - 17) Re-install the hose and fitting to the clutch release port and re-install the clutch hose guard to the clutch / ring gear housing.
  - 18) Refill the winch to proper level with the correct gear oil, as specified in the service manual.

