

CC-01b: Rebuild Gear Box

SAFETY FIRST

- Follow all Caterpillar facility safety standards when performing this task.
- Use caution when using a press.

EQUIPMENT

- Maintenance Mechanic hand tools
- lifting device
- liquid gasket (rubber)
- Visco cleaner
- shop towels
- air impact wrench
- hand jack dolly
- press

RESOURCES

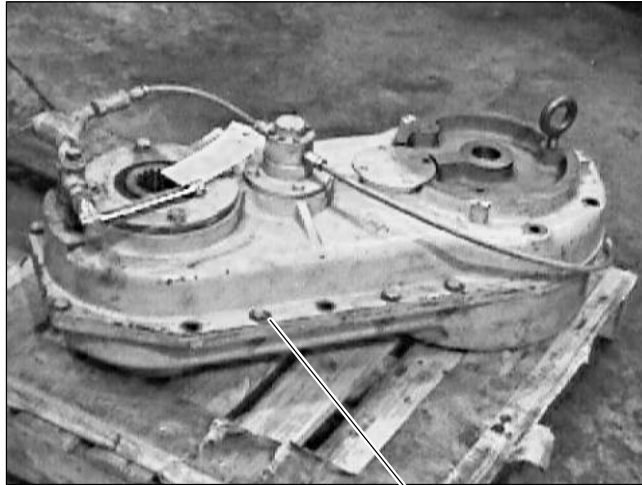
- none



Rebuild Gear Box

Preparation

1. Remove two bolts from the opposite ends of the gear box.



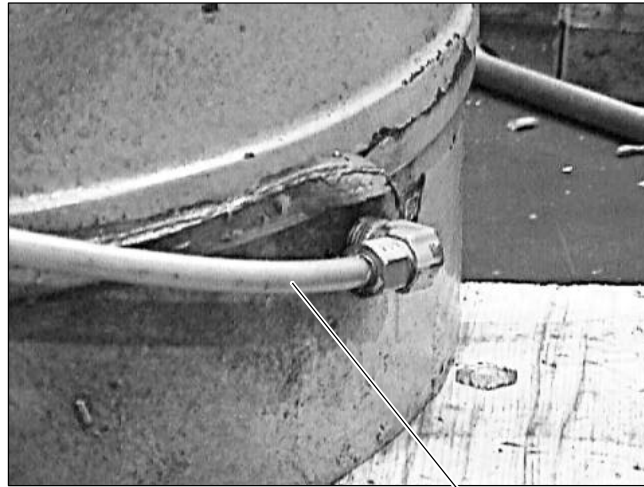
Bolts

2. Install lifting eyelets.
3. Attach a lifting device to the eyelets and raise the gear box.
4. Place the gear box on the workbench.

Disassemble the gear box.

5. Separate the gear box case.

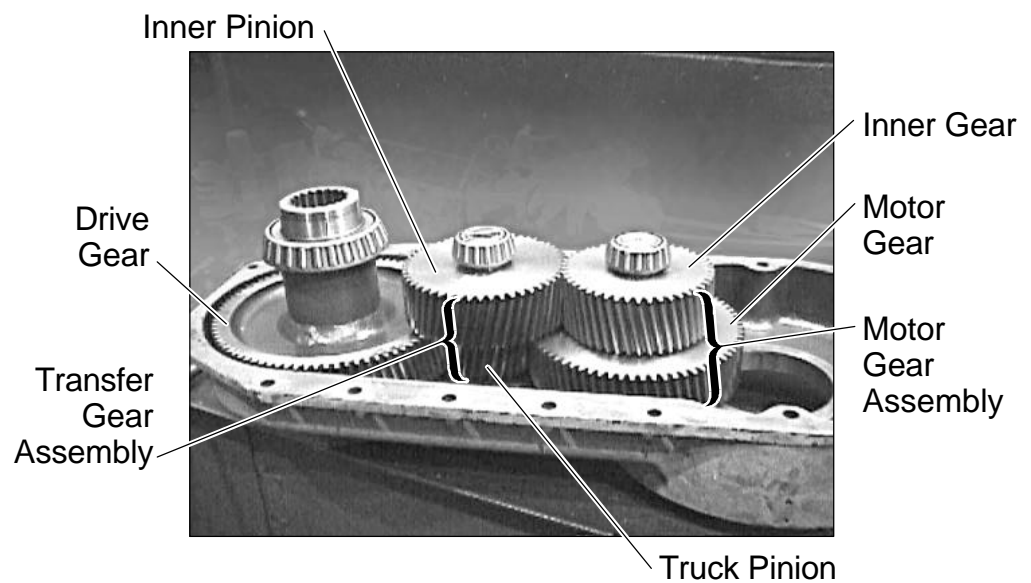
- Remove the oil line from the bottom half of the gear box.



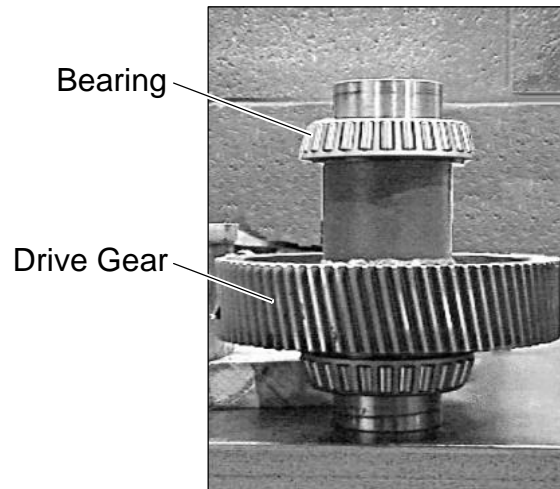
Oil Line

- Remove the bolts that hold the two halves of the case together.

6. Remove the gear assemblies from the case.



7. Place the motor gear assembly in the hydraulic press, and press the shaft from the gears and bearings.
8. Place the transfer gear assembly in the press and press the shaft from the gears and bearings.
9. Place the drive gear assembly in the press, and press the bearings from the assembly.



10. Remove the seal cover from top side of the gear box case for now. Leave the bottom seal in place until the new drive gear is installed in the lower case.

Cleaning and Inspection

1. Clean the gear box case.
 - Steam clean the parts.
 - Wipe the inside of the gear box. Use Visco to clean any areas missed during the steam clean.

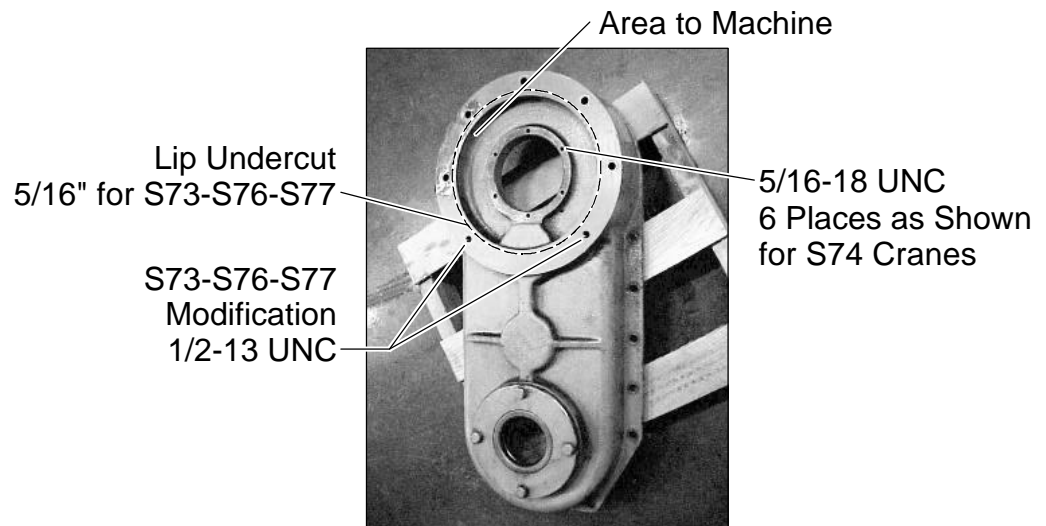
2. Inspect the bearing races in the top half of the case. Replace as necessary.
3. Remove and clean the strainer.



Strainer



4. Check for case modification.
 - Examine the lower half of the case. The inside area should have six holes to accommodate the motors for the S74 retrieval cranes. The outside diameter should be machined to accommodate the motor of the S73-S76-S77 retrieval crane.

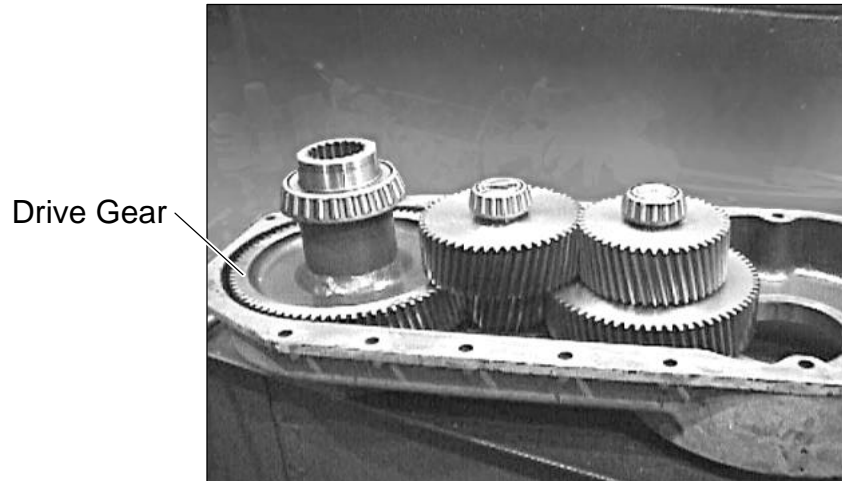


Gear Box Reassembly

1. Install the strainer.

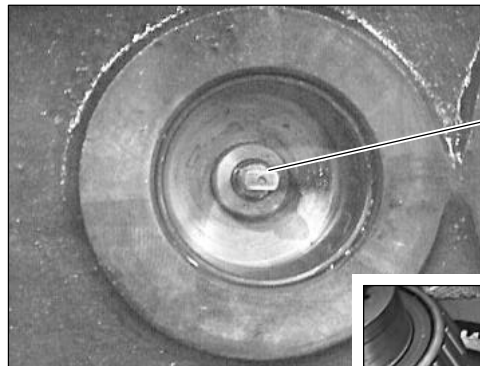
Note: Replace all bearings in the gear box.

2. Install the bearing on the inside of the top case.
3. Assemble each gear assembly.
 - Place the shaft for the motor and transfer gear assemblies in the freezer.
 - Place the bearings and the two gears on the shaft for both sets of intermediate gears.
 - Position the assembly in the hydraulic press and press together.
 - Press the bearings on the drive gear.
4. Install the three-gear assembly in the lower half.



5. Apply the liquid gasket to the lower gear box case.
6. Bolt the gear box together and tighten the bolts wrench-tight.
7. Invert the gearbox to replace the seal on the lower half after the gearbox has been assembled.

8. Install the seal covers on both sides of the gear box.
 - Using a seal pick, slide the seal cover over the drive gear shaft.
9. Place the top cover over the lower assembly.
 - Ensure that the oil pump shaft aligns with the slot in the transfer assembly shaft.



Oil Pump Shaft

Slot in Transfer
Assembly Shaft

10. Document the work history. The universal gear box is now ready for installation in any of the four systems.