

EG-07c: Replace Components (Retrieval Crane - Drive Wheel)**SAFETY FIRST**

- Follow all Caterpillar facility safety standards when performing this task.
- The crane must be powered down during the drive wheel replacement.
- The area at the bottom of the crane is dimly lit; use a flashlight as needed.
- An overhead hazard exists due to the I-beam and dolly. Check for overhead clearance when working near the back of the crane.

EQUIPMENT

- flashlight
- hydraulic jack
- 15/16-inch wrench
- 1 1/8-inch wrench
- I-beam and dolly
- C-clamp
- two 1/2-inch socket wrenches
- vise grips
- 3/4-inch wrench
- impact wrench
- crescent wrench

RESOURCES

- none required



Replace Components (Retrieval Crane - Drive Wheel)

1. Obtain the drive wheel replacement part from the crib.
2. Position the crane in the maintenance aisle.
3. Press the safety stop and E-stop to power the crane.
4. Ask an Electrician to remove the X-brake.
5. Remove the ladder.
 - Remove the two hinge pins. See the figure below.

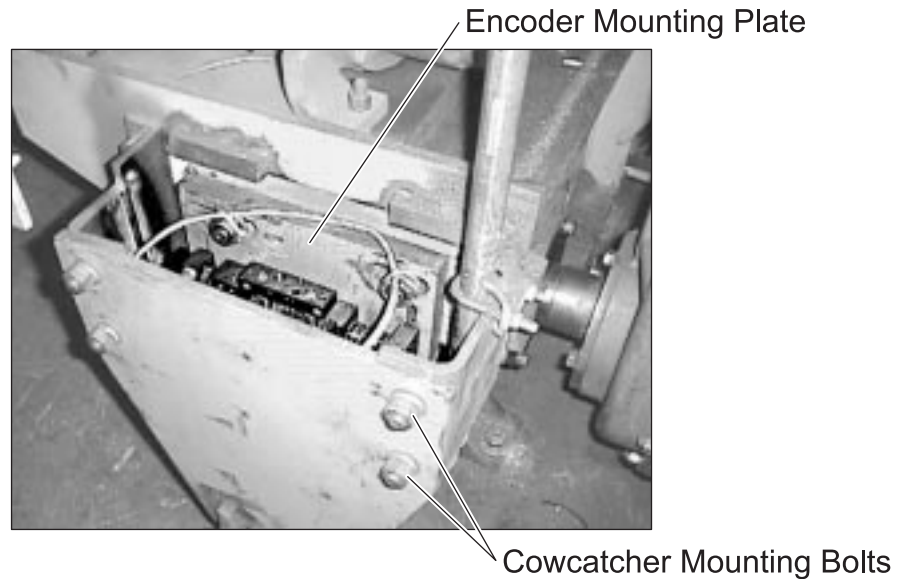


Ladder Hinge Pin

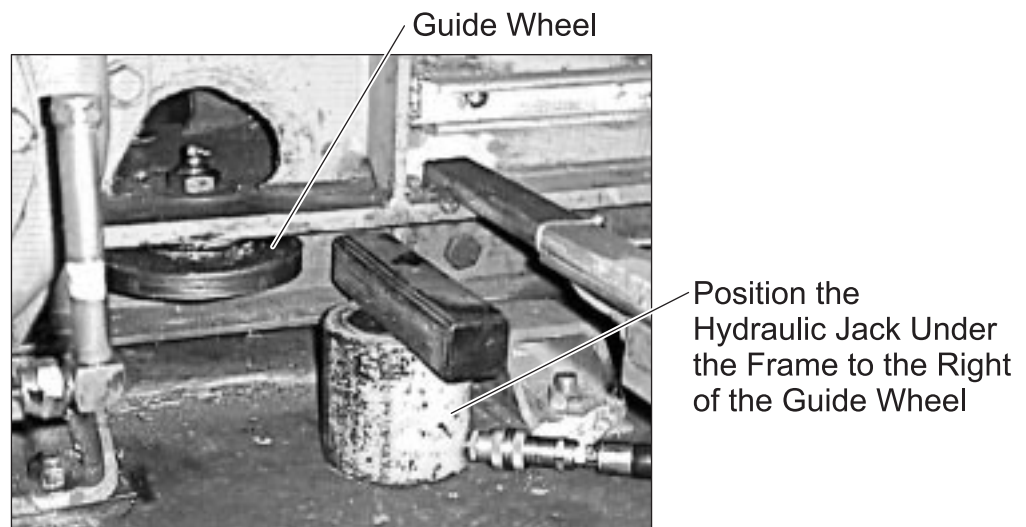
6. Remove the cowcatcher.
 - Using a 15/16-inch socket wrench, remove the four bolts securing the plate to the frame. Set the plate aside.

7. Remove the cowplate and encoder mounting plate.

- Using a 1 1/8-inch socket wrench, remove the two bolts securing the encoding mounting plate to the frame.
- Set the encoder aside. See the figure below.

**8. Lift the drive wheel off the rail.**

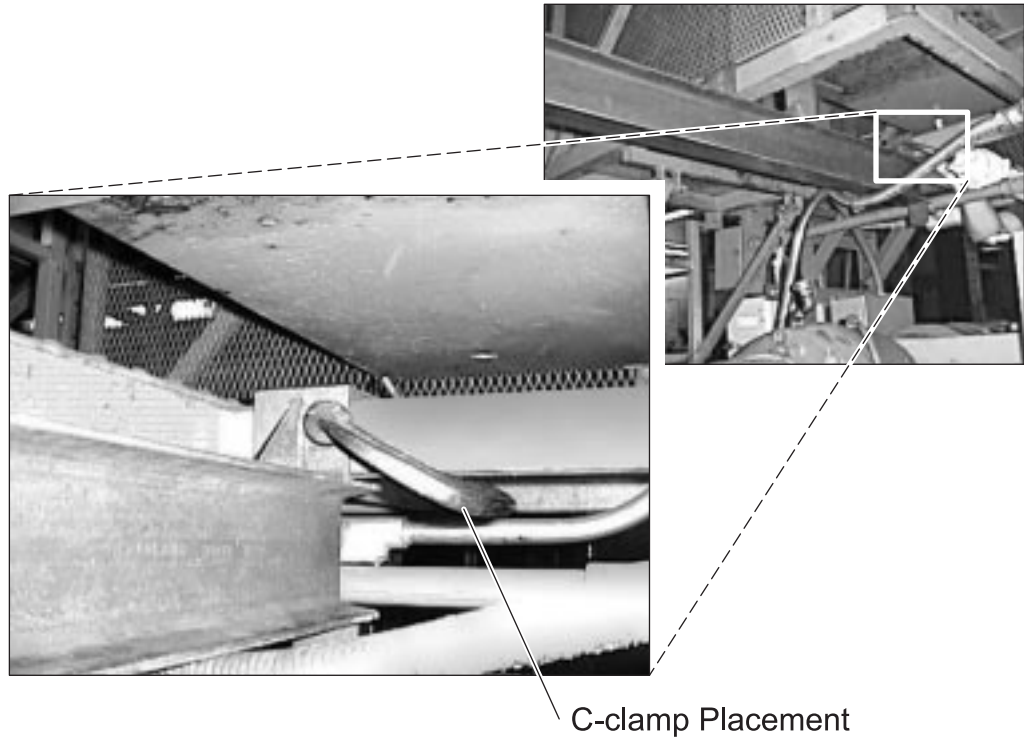
- Position the hydraulic jack under the frame of the crane, beside the guide wheel, as shown below.



- Raise the crane until the crane clears the flanges on the bearing block.

9. Install the I-beam and dolly.

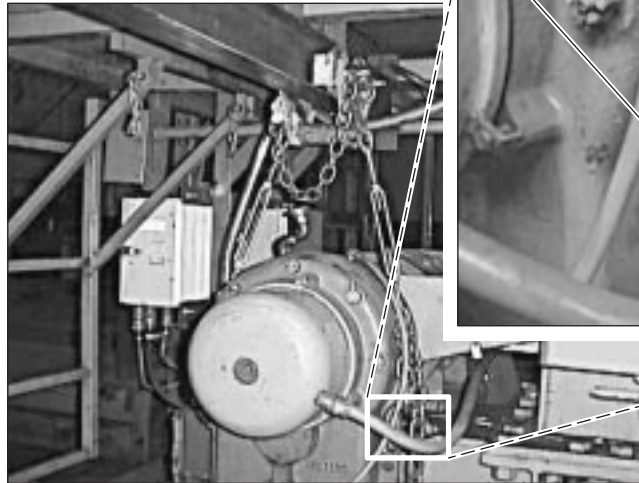
- Install the I-beam on the frame segments beneath the platform.
- Clamp the C-clamp to secure the I-beam to the frame. See the figure below.



- Install the dolly on the I-beam.

- Connect the dolly chains to the two top bolts on the gearbox (one either side of the housing cover), as shown below.

Remove Top Bolt
on Each Side



Install
Chain Adapter
in Each Hole

10. Using two 1/2-inch socket wrenches, remove the eight bolts securing the gearbox to the motor on the coupling.

- Using a crescent wrench and a 3/4-inch socket and ratchet, remove the two long bolts that hold the top of the gearbox to the top of the crane.
- Attach a pair of vise grips to one of the socket wrenches.
- Using a 3/4-inch socket wrench, remove the three bolts securing the cap to the drive shaft. See the figure below.



Drive Wheel Cap Nuts

- Pull the gearbox off the spline shaft of the wheel.

11. Remove the drive wheel.

- Jack the crane up high enough to place a safety block between the crane and rail.
- Using the support block ensure that the crane will remain raised up in the event the hydraulic jack leaks off.
- Using a 15/16-inch wrench, remove the four bolts securing the bearing blocks to the frame (two either side).
- Roll the drive wheel out from under the crane.

12. Install the new drive wheel.

- Roll the wheel into place.
- Tighten the two bottom bolts to ensure that the two milled surfaces mate and are flush.
- Remove the safety blocks.
- Lower the crane until it is just above the bearing blocks (the wheel can still be moved).
- Check to ensure that both milled surfaces are seated properly.
- Install the two top bolts and tighten using an impact wrench.
- Lower the crane wheel on to the rail and tighten all four bolts again.

13. Install the gearbox.

- Slide the gearbox onto the drive shaft.
- Install the three bolts wrench-tight on the drive shaft cap.
- Install the eight bolts wrench-tight securing the gearbox to the motor.
- Install the two bolts (long) on the top right of the gearbox bracket.
- Remove the chain link from the gearbox.
- Remove the dolly and I-beam.

14. Ask the Electrician to install the encoder and X-brake.

15. Install the cowplate.



16. **Reconnect the ladder hinges.**
17. **Clean up the work area.**
18. **Document the work history.**

