

## L-15: Change/Dress Grinding Wheel

### SAFETY FIRST

- Follow all Caterpillar facility safety standards when performing this task.
- A cracked wheel could explode, sending chunks of stone flying and injuring personnel.

### EQUIPMENT

- large screwdriver
- soft hammer
- hub nut remover
- Allen wrenches
- dressing diamond
- balancing tool
- shop towel
- hand scraper and/or brillo pad
- red marker or other device for marking the wheel

### RESOURCES

- manufacturer's manual
- Unbrako Screw Data Guide

### Change Grind Wheel

1. Obtain a new wheel from the crib.
2. Perform a ring test on the new wheel.

**Caution:** Handle the wheel with care. Dropping or knocking the wheel can cause unseen cracks. Undetected cracks may result in the wheel exploding when installed on the grinder.



- Hold the wheel in the center and firmly tap the side of the wheel with the handle of a large screwdriver. See the figure below.



### Ring Test

- Listen for a ringing sound.
- Discard the wheel if it makes a thudding sound; it is probably cracked.

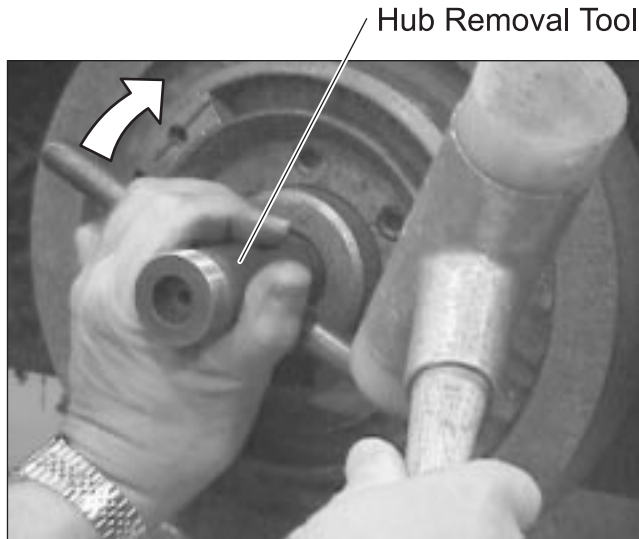
### 3. Remove the guards around the old wheel.



- Use the properly sized Allen wrench.

**4. Remove the old wheel.**

- Loosen the hub on the old wheel. This is a left hand nut, so loosening requires a clockwise rotation.
- Use the hub removal tool and a hammer, as shown below.



- Remove the hub and slide the wheel from the spindle.

**5. Remove the hub from the wheel.**

- Remove the weights from the hub.
- Remove the bolts using the correctly sized Allen wrench.
- Clean and retain all hardware.

**6. Disassemble the hub.**

- Remove the blotter.

7. **Clean all parts, as necessary.**

- Scrape, scrub, and/or soak the hub until free of debris.

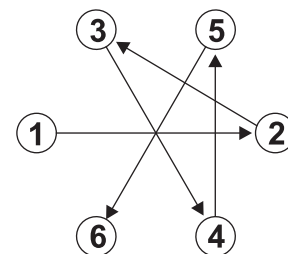


**Cleaning the Hub**

- Wipe all parts free of debris with a shop towel.

8. **Assemble the new wheel to the hub.**

- Wrench-tighten the hub bolts, according to the Unbrako Screw Data Guide torque specifications. Use a cross pattern, as shown below.



**Hand-Tightening Bolts in a Cross Pattern**

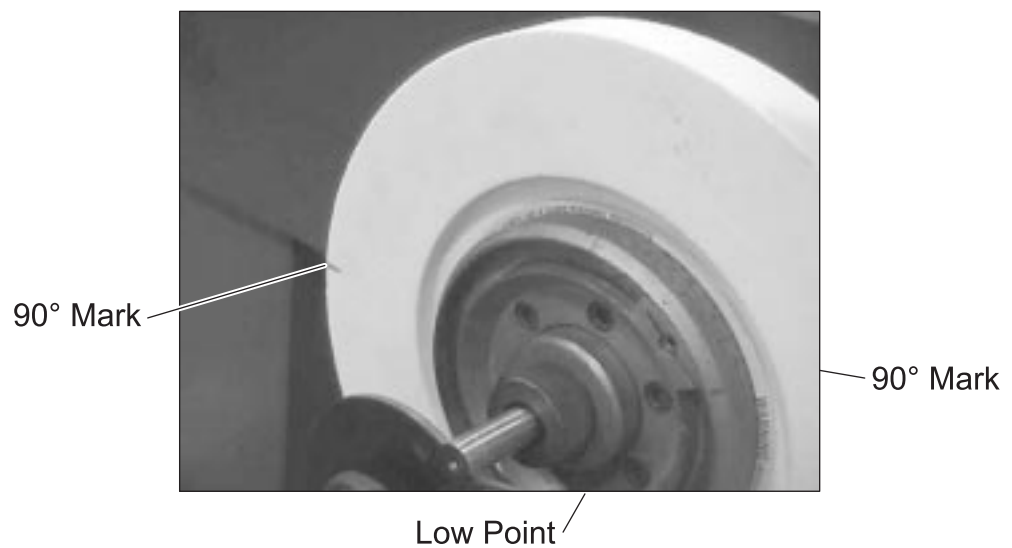
9. **Install the balancing arbor.**

10. Wipe the balance free of debris with a shop towel.
11. Locate the low point on the wheel.
  - Place the wheel on the balance stand as shown.

Balancing  
Arbor and Hub

Balancing Stand

- Allow the wheel to turn until it stops.
  - Mark the bottom center of the wheel with a red marker.
12. Mark 90 degrees from the low point around the wheel.



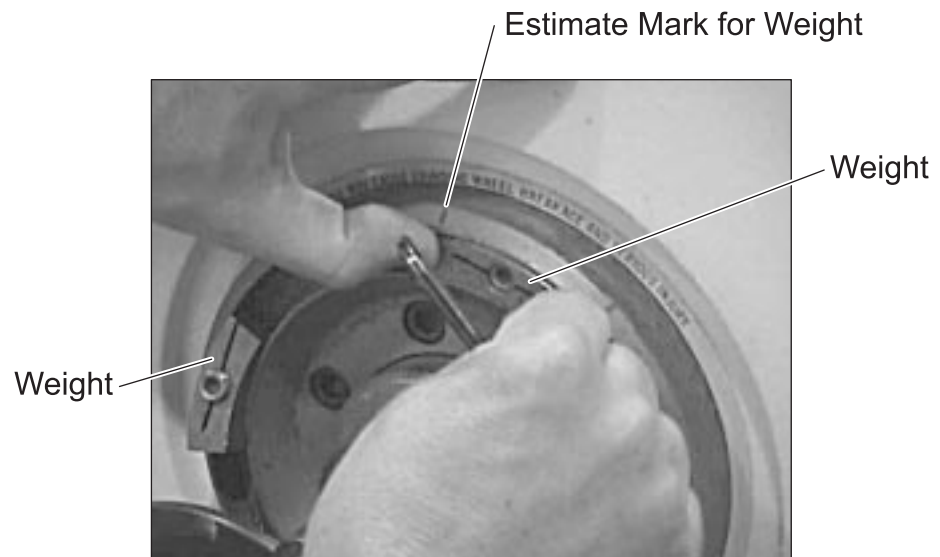
90° Mark

90° Mark

Low Point

### Wheel Balancing

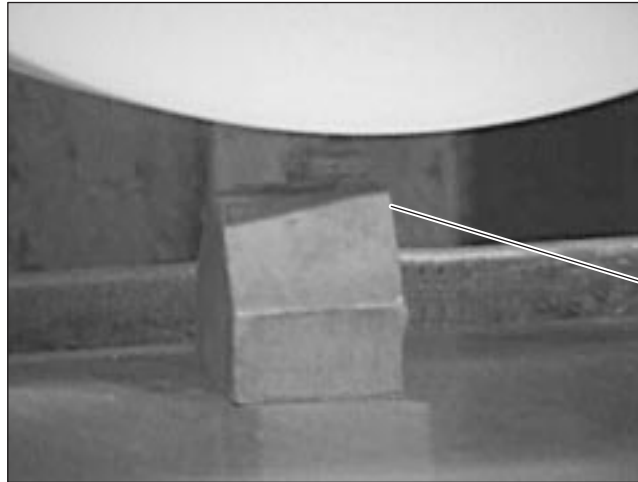
13. **Install the weights above the left and right marks from the low point.**



- Tighten the weights so they do not move while the wheel is moving.
14. **Balance the wheel.**
- Adjust the weights so the wheel is balanced on each 90 degree mark.
15. **Wrench-tighten the weights after the wheel is balanced.**
16. **Remove the wheel from the balance.**
17. **Remove the balance arbor from the wheel.**
18. **Install the new wheel on the external grinder.**
19. **Reinstall the guard.**
20. **Jog start the external grinder to test the wheel.**
- Jog starting allows you to stop the grinder quicker if there is a problem with the wheel.
  - Allow the wheel to come to full speed.

**21. Dress the wheel.**

- Adjust the wheel to the dressing diamond.



Diamond to Left  
of Center of Wheel  
Approx. 1/8"

- Adjust the wheel until it just makes contact with the dressing diamond.
  - Feed the wheel across the diamond a few times until it is true and free of buildup.
- 22. Observe the wheel for wobbling or excessive vibration.**
- Rebalance the wheel if it exhibits either of these symptoms.
- 23. Grind a test piece.**
- 24. Inspect the test piece finish for any uneven marks from the grinding wheel.**
- 25. Clean up the work area.**