

AJ-09: Perform Lapping

SAFETY FIRST

- Follow all Caterpillar facility safety standards when performing this task.

EQUIPMENT

- lapping compound
- shop towels
- mineral spirits

RESOURCES

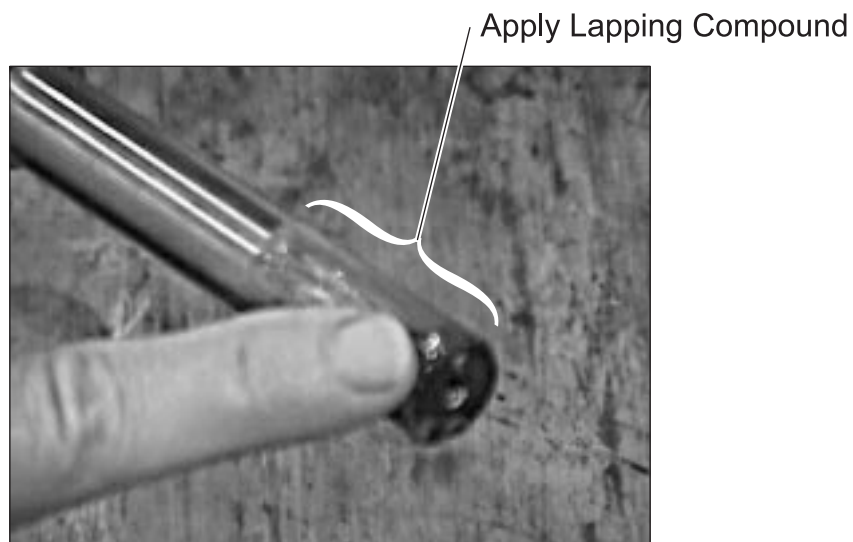
- lapping compound manufacturer's manual

Perform Lapping

Lap Two Diameters

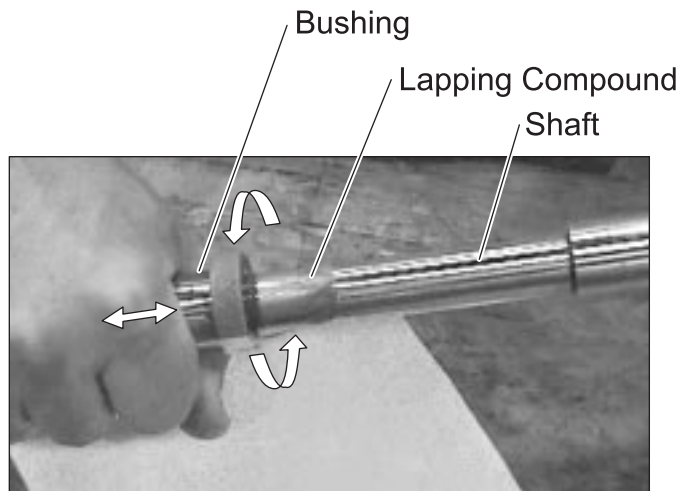
1. Apply lapping compound to the shaft.

- Use Carborundum compound or equivalent after selecting the proper grit.
- Spread a light amount, using your finger, to the end of the shaft.



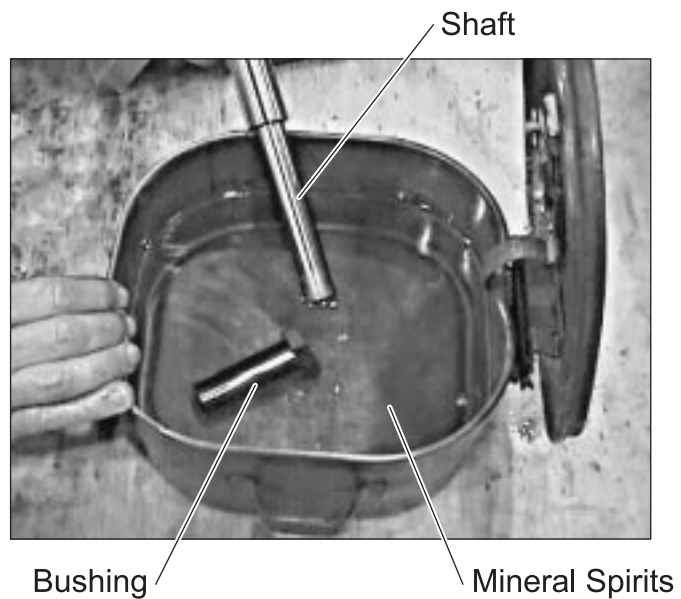
Applying Lapping Compound

2. **Work the shaft into the bushing, twisting back and forth.**



3. **Clean the lapping compound off of the two diameters.**

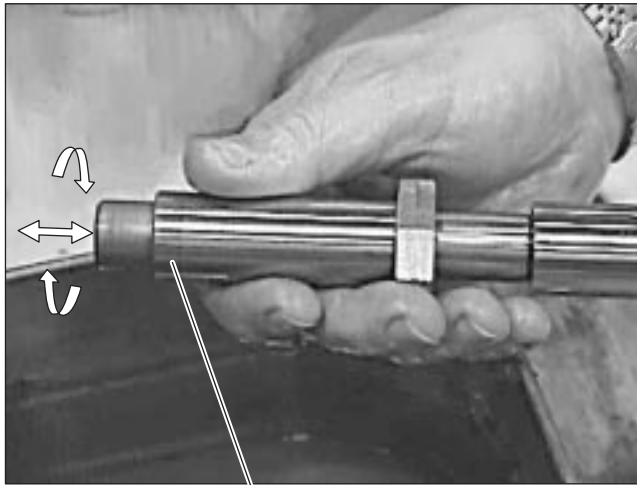
- Dip the shaft and the bushing into mineral spirits to clean them.



4. **Verify the fit of the bushing and shaft.**

- Work the shaft into the bushing again.

- Verify that the shaft fits smoothly and tightly into the bushing without binding.

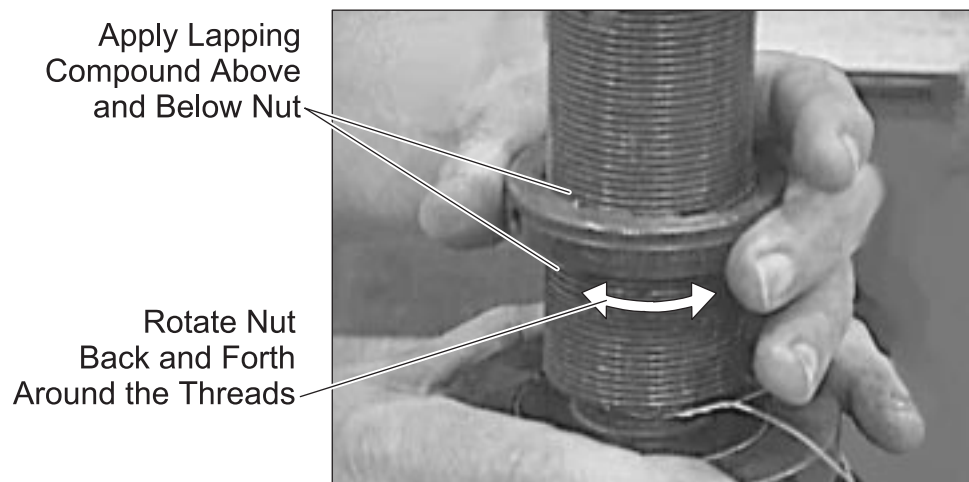


Parts Should Slide and Rotate Smoothly

- Repeat steps 1-4 as needed.

Lap Threads

1. Apply lapping compound to the threads of the shaft or screw.
2. Work the nut across the threads until the nut moves smoothly across the threads.



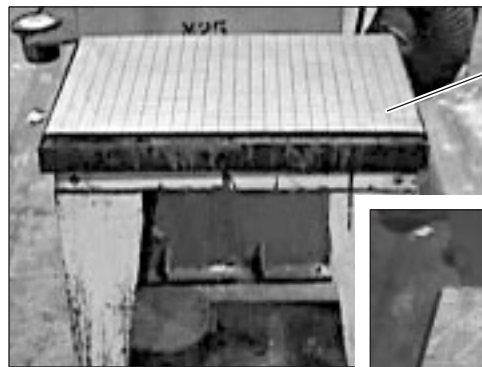
Apply Lapping Compound Above and Below Nut

Rotate Nut Back and Forth Around the Threads

3. **Clean the lapping compound off the threads.**
 - Dip the shaft and the nut into mineral spirits to clean them.
4. **Verify that the threads function smoothly.**
 - Threads must allow the nut to move smoothly up and down the shaft.
 - Repeat steps 1-4 as needed.

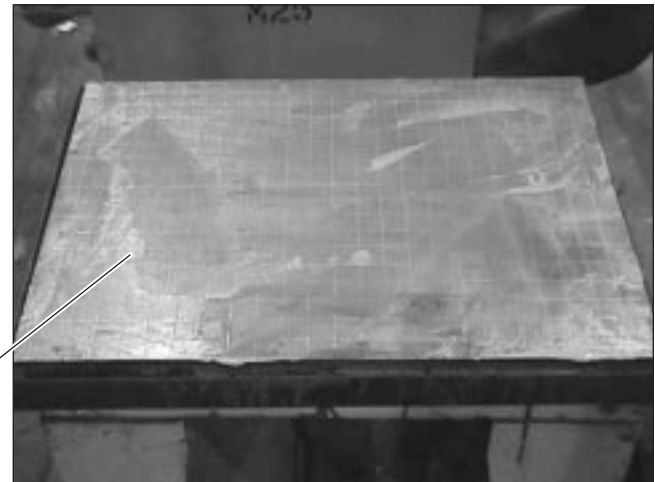
Lap Surface

1. **Apply the lapping compound to the entire surface of the lapping table.**

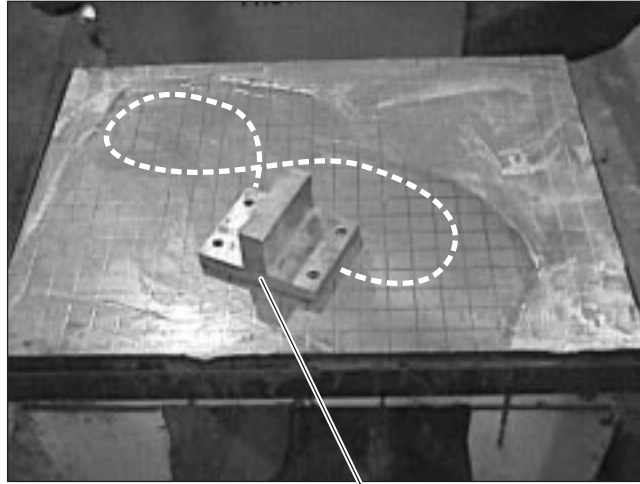


Lapping Table

Lapping Compound
Applied to Table

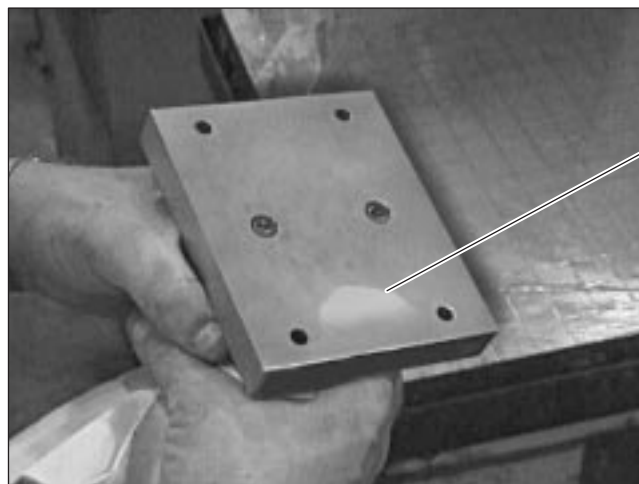


2. **Work the surface of the part across the table in a figure 8 motion, maintaining even pressure on the part.**



Move Part to be Lapped
in a Figure "8" Motion

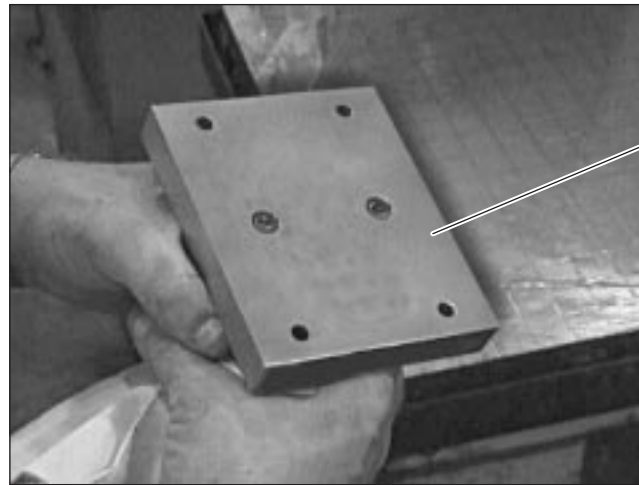
3. **Wipe the surface of the part clean.**
4. **Check the surface of the part for low spots.**



Low Spot

- Shiny spots of the surface demonstrate low spots where the lapping compound is not being applied.
- Indicate the piece, if necessary, to verify an exact surface.

5. Continue lapping the surface until the piece is flat.



Flat Surface

Lapped Surface

6. Clean the piece part and the lapping plate.