MICHELL ENGINEERING

Inverted Bearing Re-lubrication Instructions

The inverted bearing is designed to pump lubricating oil from the oil well at its base to the thrust ball residing at the top of the inverted shaft. As the bearing housing rotates on the inverted shaft, the oil will be drawn up through a machined spiral inside the housing to continuously flood the thrust ball at the top, before dropping back down to the oil well through a drain hole in the shaft for the process to repeat. Sufficient oil is required in the well to submerge the bottom of the rotating bronze housing so the oil can be pumped to the top.

1. Remove the drive belt

2. Undo the round finger nut that secures the platter to the bearing. Turn it counter-clockwise. Use a large elastic band or rubber gloves to aid in gripping if it is too tight to move.

3. Use your thumb to push down on the record spindle while lifting the platter off the bearing with your hands. Make sure the bearing does not lift out with the platter, or you may damage the bearing. UNDO THE PLATTER NUT FIRST!

4. Pull straight up on the record spindle to remove the bronze bearing housing. **Be careful not to lose the thrust ball inside the housing!** Sometimes the ball will remain on top of the inverted shaft protruding up from the oil well, but usually it will be held inside the bronze housing by surface tension of the lubricating oil. Verify that the ball is actually there. You should see it sitting inside the bronze housing. The deck CAN NOT be run without it or you may cause permanent damage to the bearing!
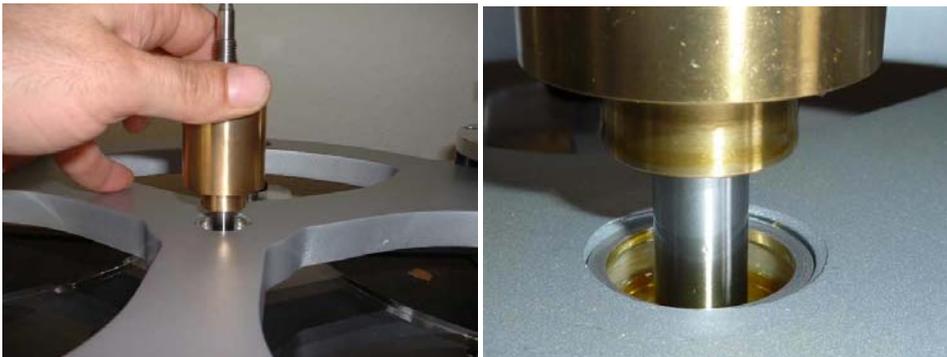

5. Squirt some lighter fluid into the bronze housing, cover the hole with your thumb and shake the housing to wash any oil from inside. Dump the contents onto a cloth or paper towel being careful not to lose the thrust ball if it was present. Repeat the wash cycle and set the bronze housing and thrust ball aside to dry.

6. Use a tissue and cotton swabs to remove as much old oil from the bearing well as possible. Squirt some lighter fluid onto a tissue and wipe the inverted shaft clean. Squirt some lighter fluid into the hole at the top of the inverted shaft to wash out oil and dislodge any foreign material into the oil well. Soak up the fluid with tissues and cotton swabs and repeat one more time. Let the lighter fluid evaporate completely before re-lubricating.

7. Using genuine J.A. Michell synthetic turntable bearing oil, put one drop of oil on top of the bearing shaft and allow another 2 drops to drip down opposite sides of the shaft to pre-lubricate it. Fill the oil well about 1/3rd full. Put 2 more drops of oil dead center in the hole in the bronze housing for pre-lubrication of the thrust ball and drop the thrust ball into the housing. The oil should retain it in position. Drizzle another 2 drops onto opposite sides of the hole in the bronze housing to pre-lubricate the walls.

8. Making sure you do not lose the thrust ball, carefully lower the bronze housing onto the bearing shaft while gentle rotating it back and forth to spread oil on all the bearing surfaces. Once fully home, spin the bearing six or more times with your thumb and forefinger to pump oil up into the top of the bearing. (The bearing pumps oil if spun clockwise only).

9. To verify that there is sufficient oil in the oil well, partially lift the bearing and confirm that the narrow portion of the bronze bearing housing was submerged as will be evidenced by it being wet with oil. (See second photo above.) This will ensure that there is enough oil for the bearing to pump to the top of the shaft as it rotates. If insufficient oil is noticed, add a bit more and repeat until all is OK. Too much oil will cause the well to overflow when the bronze housing is replaced so add a little at a time. Use a cotton swab to absorb excess oil. Lighter fluid can safely be used to remove excess oil from the chassis or Plexiglas parts.

10. Re-install the platter, platter nut and drive belt.
It is recommended that the new bearing be broken in for 48 hours <u>continuously</u> at 45 RPM prior to using the turntable.