WallySkater v2.1 Instructions

The WallySkater:

- **Is the only measuring tool that allows the user to determine the optimum anti-skating force to be applied to the tonearm for proper vinyl playback**
- **Allows calibration of the tonearm's anti-skating system**
- **Ensures even stylus wear over time**
- **Reduces likelihood of mis-tracking distortion and record groove damage**
- **Allows you to determine the inherent mechanical resistance (bearings, wires, air supply tubes, etc.) in any tonearm – pivoted or linear**

1. **WATCH THE WALLYSKATER INSTRUCTIONAL VIDEO SERIES ON THE WALLYTOOLS ANALOG SETUP TOOLS YOUTUBE CHANNEL. Go to the "Playlists" tab and watch the series in order. The visual aids will help you understand these written instructions.**
2. **Disengage the anti-skate mechanism completely**
3. **Make SURE the Vertical Tracking Force (VTF) is properly set**
4. **Familiarize yourself with the parts diagram on the last page of these instructions**
5. **If you have a mat of any type (felt, cork, etc.) remove it while using the WallySkater**

ASSEMBLY PROCEDURE

6. **Place the WallySkater Base directly on the platter with the spindle located through the hole marked "Spindle". Aim the line that runs through the center of the Base so it is pointed at the tonearm's pivot point. See Figure 1**
7. **The peg at the bottom of the Post has been inserted at a very slight angle. For this reason, the lettering on the Post should face the tonearm once assembled.**
8. **Place the Lower Beam into the angled notch at the bottom of the Post. The Lower Beam will sit at a 45° angle when properly inserted. See Figure 3**
   - 8.1. **Some Lower Beams fit tightly and others fall right into place. This variation is due to laser cutting tolerances increasing on deep cuts.**
   - 8.2. **If your Lower Beam has a tight fit, during removal process it may be necessary to use two fingers straddling the post in order to avoid breakage. See Figure 4**
9. **Place one O-ring on the cylindrical Upper Beam and insert into the hole at the top of the vertical Post. Place a second O-ring onto the Upper Beam to secure it in place by pushing the two O-rings up against the Post. See Figure 2**
10. **Insert the post into one of the three "Outer Groove Area Mounts" according to your arm length. Round to nearest:**
    - 10.1. **9" arms (229mm) use the left-most hole**
    - 10.2. **10.5" (267mm) arms use the second hole**
    - 10.3. **12" (305mm) arms use the third hole**
11. **Unwrap the plumb bob and tonearm suspension threads from the Hanger**
12. **Place the Hanger on the Upper Beam and adjust the plumb bob so that the tip of it is hovering just above the top surface of the Lower Beam. Do not allow it to touch the beam.**
    - 12.1. **Adjustments to length should be done with the thread pinched in the slit in the hanger directly underneath the hole for the Upper Beam. When adjusting length, ensure the thread is free from the locking slit. See Figure 5**
    - 12.2. **For additional security, place one of the extra O-rings on the end of the upper beam so the hanger doesn't fall off the Upper Beam**

MEASURE TONEARM INTERNAL HORIZONTAL FORCES

13. **With the tonearm's armrest up, move cartridge near the outer edge of the platter. Twist the Post in the Base so that the Lower Beam gets as close as possible to the front of the cartridge – but not touching it.**
14. **Place the yellow thread loop on the head shell finger-lift and adjust the length of the string so that the stylus hovers approximately 2-3mm above the platter when the armrest is dropped. The tonearm should be allowed to swing freely without the stylus touching the platter and without the tonearm touching the Lower Beam of the WallySkater.**
    - 14.1. **If you do not have a finger lift, please use a small strip of firm-holding tape to attach the string to the headshell at a point that is close as possible to the location directly over the stylus (Safer option: loosen one cartridge mounting screw and place the thread under the head of the screw.)**
15. **Slide the Hanger so that the stylus is located at the outside edge of the platter.**
16. **When looking at the lower beam with your eye at or just above Lower Beam height, note the number of hashmark lines between the plumb bob and the yellow string supporting the tonearm on the Lower Beam.**
    - 16.1. **Each hashmark line represents one percent of your VTF in horizontal forces.**
    - 16.2. **There should be no more than 3-4% with no anti-skating mechanism engaged. If you see more than this, contact WAM Engineering to discuss.**
17. **Lift the armrest to protect the cantilever while you carefully pull the Post out of its mount hole on the Base and move it into one of the two "Inner Groove Area Mounts" according to your arm length.**
    - 17.1. **11" to 12" arms use the right-most hole**
    - 17.2. **9" to 10" arms use the second-from-right hole**
18. **Slide the Hanger so the stylus is near the inner groove area of the platter and take another reading. As above, you want to see less than 3-4%.**

MEASURE ANTI-SKATING FORCE

19. **<u>Lift the armrest to protect the cantilever.</u> Move the Post to its appropriate mount hole in the "Outer Groove Area Mounts"**
20. **Slide the Hanger so that the stylus is located at the outside edge of the platter**
21. **Adjust the anti-skating device on the tonearm so that the distance between the plumb bob and the string supporting the tonearm is between 9-11 percent. Shorter arms should approach 11% and long arms closer to 9%. (Each hash mark on the lower horizontal bar of the WallySkater equals one percent.) Rock the arm a couple times once the anti-skate has been set to confirm the arm returns to, and comes to rest at, the same position.**
22. **<u>Lift the armrest to protect the cantilever</u> while you pull the Post out of its mount hole on the Base and move it into one of the two "Inner Groove Area Mounts" according to your arm length.**
    - 22.1. **11" to 12" arms use the right-most hole**
    - 22.2. **9" to 10" arms use the second-from-right hole**
23. **Move the hanger towards the center of the platter, keeping the aiming line in the Base pointed at the tonearm pivot and turning the vertical Post so that the Lower Beam is as close as possible to the cartridge without touching it. Drop the armrest and take another readout of the distance between the plumb bob and the string supporting the tonearm. Lift armrest.**
    - 23.1. **Some anti-skating devices will provide slightly higher percentages at this location and some lower. If you find a large discrepancy of values after moving the hanger toward the center of the platter (+-4%), contact WAM Engineering to discuss the problem.**
24. **Note the setting on the anti-skate mechanism**

DETERMINE MECHANICAL RESISTANCE OF THE TONEARM

25. **Disengage the tonearm's anti-skating device completely**
26. **Lift the armrest to protect the cantilever while you pull the Post out of its mount hole on the Base and move it into the unmarked hole between the "Inner Groove Area Mounts" and the "Outer Groove Area Mounts"**
    - 26.1. **If you have a linear tracking tonearm, use the "Linear Tracking Tonearm Test Mount" hole**
27. **Move hanger so the stylus is at the center of the groove area of the record platter. Err towards the outer platter area, not the inner area as we want to avoid the cartridge coming into contact with the WallySkater Base when it is swinging (subsequent steps).**
28. **DYNAMIC SWING TEST**
    - 28.1. **With the stylus 2-3mm above the platter surface when it is at its point of rest, swing the cartridge about 2 inches one way or the other and let it go to swing freely. Arms with very low mechanical resistance will swing back and forth many times over before finally coming to rest. You might need to hold the plumb bob out of the way so it does not come into contact with the swinging yellow thread.**
    - 28.2. **If the tonearm swings very little (back and forth only once or twice), there may be a problem with the tonearm bearing or other mechanical issue causing frictional forces. Contact tonearm manufacturer if this is the case.**
29. **STATIC FRICTION TEST**
    - 29.1. **Bring the tonearm to motionless state and slowly move the Hanger from right to left and again left to right while observing the distance between the plumb bob and the string holding the tonearm. The resistance generated by the tonearm wires, bearings, etc. should be no higher than 2 to 3 percent. Should the resistance of the tonearm measure higher than this, contact the manufacturer.**

30. **With the ideal anti-skating setting now known for your tonearm and with confirmation that the tonearm does not have inordinate amounts of internal horizontal forces, your next step is to align your stylus/cantilever assembly with the WallyTractor (and WallyZenith if you know your stylus zenith angle).**

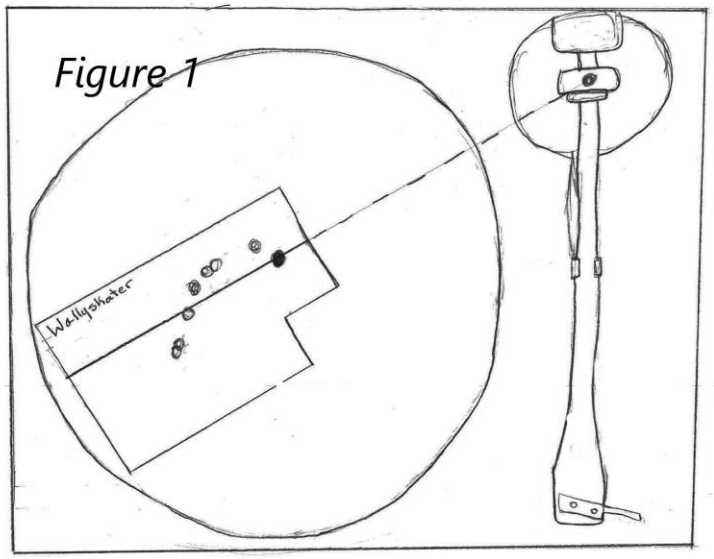


Figure 1

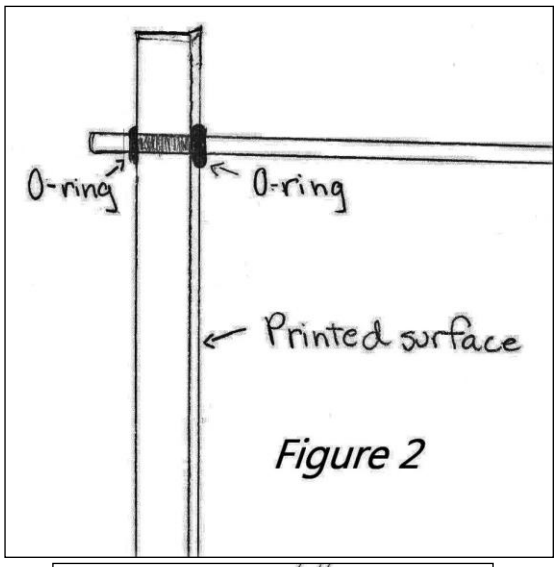


Figure 2

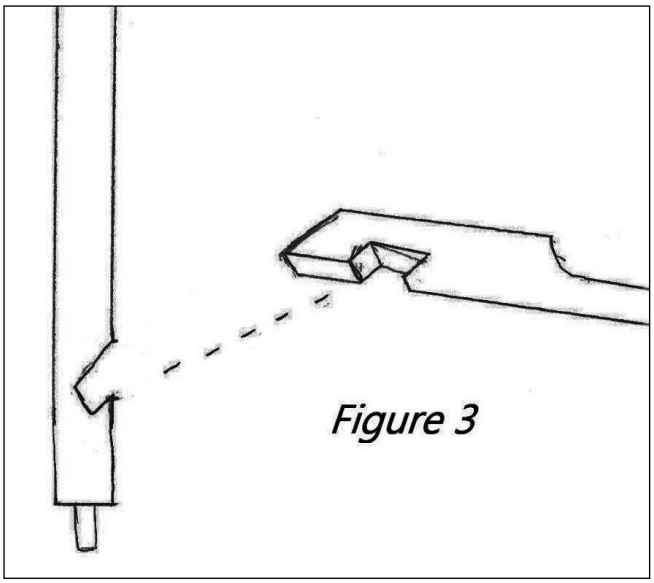


Figure 3

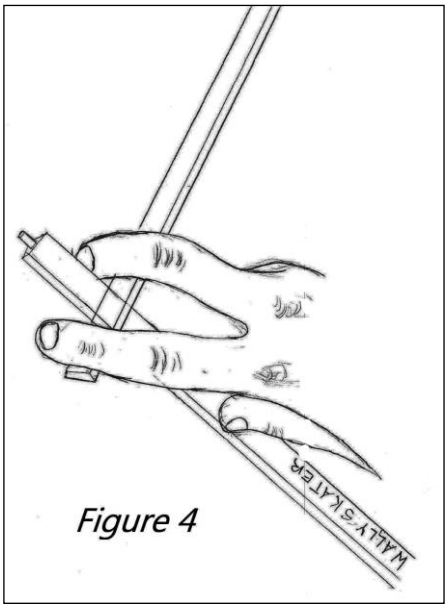


Figure 4

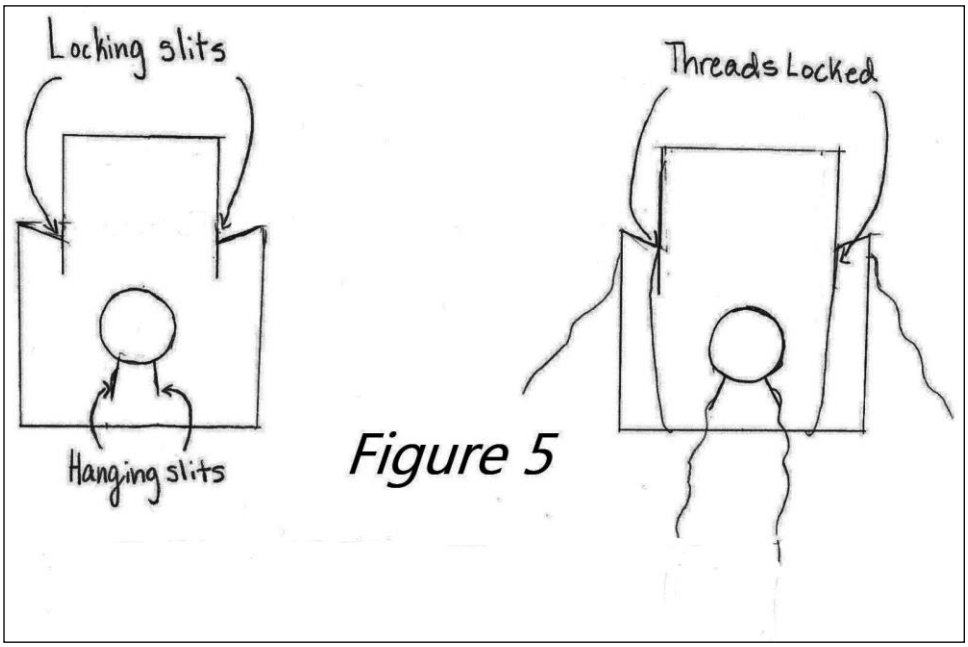
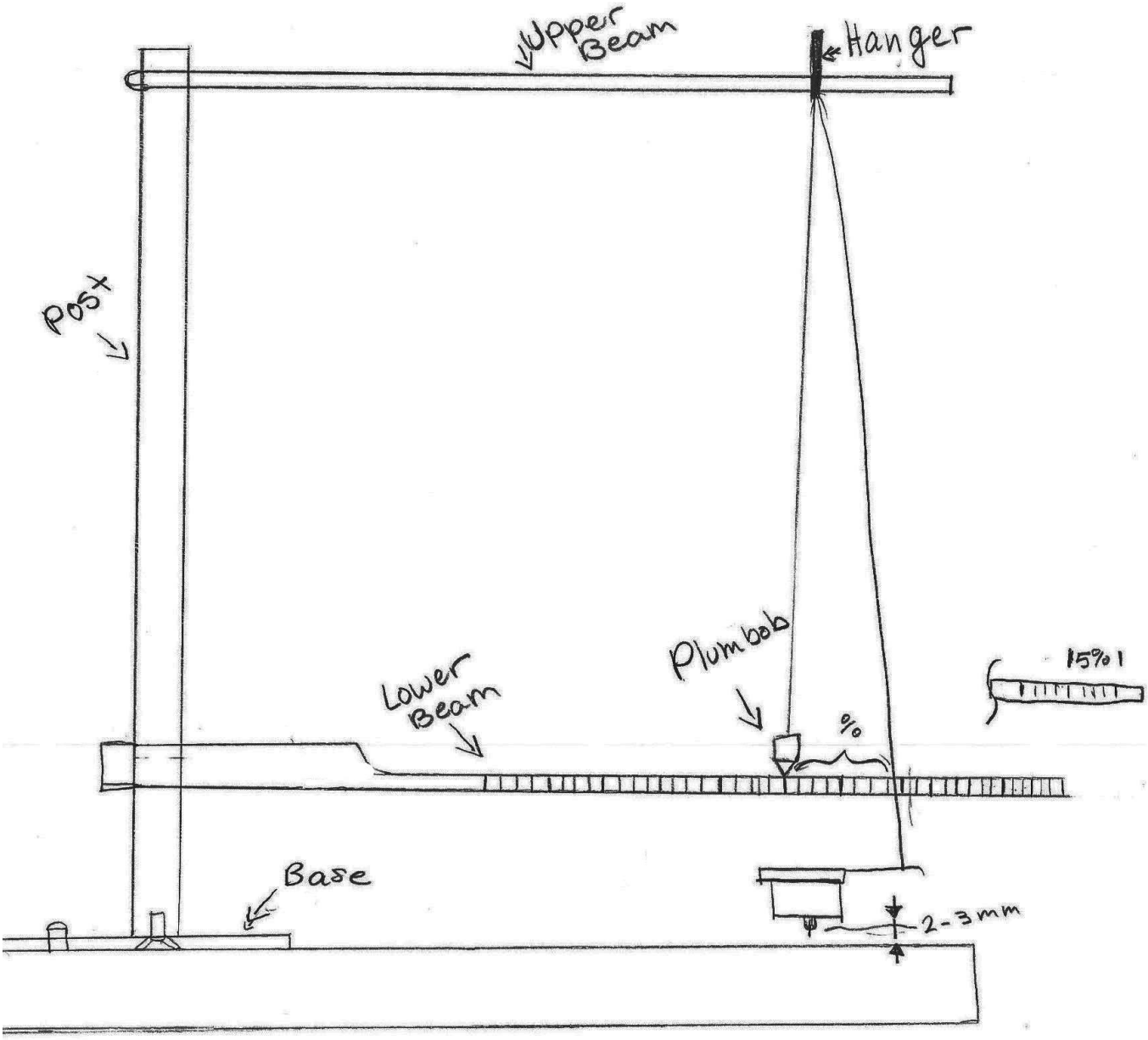


Figure 5



ENJOY ANALOG FOREVER!!! *- Wally Malewicz*

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