

WALLYZENITH v1.0 INSTRUCTIONS

Use the WallyZenith when you know what your stylus/cantilever zenith error is and wish to make a corrective alignment.¹

SUBJECTIVE ASSESSMENT – BEFORE vs AFTER ZENITH CORRECTION

If you wish to listen to your cartridge with and without zenith correction, the best evaluation conditions are performed under these guidelines:

- Use only 33rpm records
- Listen to the INNERMOST tracks on evaluation records that are closer to the record label
- Use music that throws a large soundstage with excellent imaging and plenty of high frequency content. Listen for improved dynamics and overall coherence and intelligibility. Classical symphonic music is very good for this.

PREPARATION FOR ALIGNMENT PROCESS

Ensure your cartridge remains safe by rolling back your sleeves or removing any garments with hanging sleeves. Remove hanging necklaces, lanyards, etc. from around the neck that could get caught on the tonearm or cartridge. Have plenty of lighting on the platter area. Turn off your system to protect the speakers.

Set overhang using the WallyTractor before using the WallyZenith.

With VTF set properly and anti-skating mechanism set to zero, use the WallySkater to measure for any horizontal forces within the tonearm. If the reading is more than 5%, call WallyTools to discuss the situation as such forces will cause misalignment of the cantilever unless certain measures are taken.

INSTRUCTIONS

1. Secure turntable platter with tape or small wedges so platter does not rotate
2. Disengage the anti-skating device on the tonearm (or adjust to zero)
3. Set the Vertical Tracking Force (VTF) to your desired amount. Always make this measurement with stylus AT RECORD HEIGHT and stay within the cartridge manufacturer recommended VTF range.
4. Choose whether you will use the “Older Record Collection” or “Newer Record Collection” side of the WallyZenith. Which one depends upon how you have set your overhang using the WallyTractor.
 - a. E.g., If you used an “Old Record Collection” arc to set your overhang on the WallyTractor you will have to remain consistent and use the same “Old Record Collection” WallyZenith to align your cantilever.
 - b. In the following instruction steps the Older Record Collection WallyZenith uses stylus placement points numbered 1 through 4. The Newer Record Collection WallyZenith uses the markers A through D.

¹ It is possible to use the WallyZenith as a “measurement tool” for determining zenith error. The process involves repeated listening and subjective assessment. WallyZenith is a corrective tool first and foremost. A WallyTools product for zenith measurement is currently under development.

5. Place the WallyZenith on the turntable platter and find the radial line corresponding to your cartridge's zenith error - ensuring you are using the proper WallyZenith (i.e., "Older" vs. "Newer" Record Collections).
6. Choose either the Loefgren or Baerwald alignment.
 - a. Remain consistent with the choice of overhang alignment you made when using the WallyTractor
7. Identify position 1 (Older Record Collection) or position A (Newer Record Collection) for your chosen radial line.
8. Practice eliminating *parallax error* before moving to the next step. Refer to Figure 1 below for an illustration of the following:
 - a. Lift the arm and place in arm rest.
 - b. Find any one of the small triple parallel line sets that intersect the line radiating from the center to the edge of the WallyZenith and spin the WallyZenith so the triple lines are pointing right at you.
 - c. Using the magnifying glass on one of these parallel triple line sets, notice the lines have reflections in the mirror. Move your head left-right so you can see these reflections move relative to the lines themselves. When you see **ONLY 3** parallel lines (i.e., no reflections of lines which make it appear to be 6 lines) then you have the perfect location of your eye with respect to the lines (no parallax error). This will be very important in the alignment of the cantilever.
9. Move the arm/cartridge to position 1 (or A) of your selected radial line, selecting the set of 3 parallel lines which correspond to your alignment selection (Baerwald or Loefgren). Rotate the WallyZenith so that the stylus falls at the groove intersection of the center line of the 3 parallel lines and the radial line running from the spindle to the edge of the WallyZenith.
 - a. Using the magnifying glass, see if the cantilever is exactly parallel and aligned to the center line. No reflections/parallax error should be visible, as per the practice step immediately above. Move your eye/magnifying glass a little left and right to assure what you are seeing is accurate. The cantilever **MUST** be located such that it appears to be an extension of the center line. See Figure 2 below.
 - b. If the cantilever is not exactly parallel with the center line, loosen one of the cartridge screws and twist the cartridge accordingly. Set the stylus back into the groove intersection at position 1 (or A) and check again with the magnifying glass. Be patient and determined for exactness at this point. The next steps will give you confirmation of your work.
10. Snug down the cartridge screws.
11. Move the arm/cartridge to position 2 (or B), selecting the set of 3 parallel lines which correspond to your alignment selection (Baerwald or Loefgren). Rotate the WallyZenith so the stylus falls at the groove intersection of the center line of the triple parallel lines and the straight line running from the spindle to the edge of the WallyZenith. While adjusting your perspective to eliminate parallax error, confirm the cantilever is perfectly parallel to the center of the three lines.

Only IF you have aligned properly you will be able to see the maximum "Horizontal Tracking Angular Error" **PROPERLY**. If you did not align well at the null points, this step will reveal that.

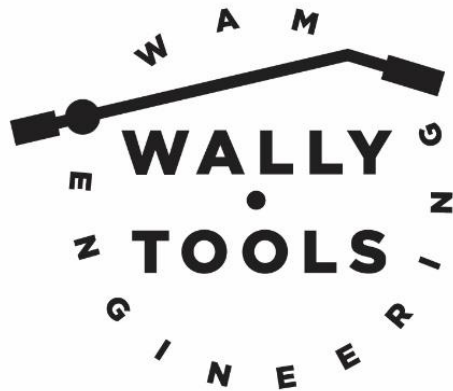
About 1° (clockwise - negative) at position 3 (or C) [Fig. 3]

About 1.8° (counterclockwise - positive) at position 4 (or D) [Fig. 4]

The maximum negative and positive angular error depends on the effective length of your tonearm and accuracy of cartridge installation. This step is very important in that it **TRAINS YOU** to be sensitive for what 1° of angular error looks like. Many people are very surprised once they develop this sensitivity.

You now have **PERFECT** horizontal alignment of your stylus/cantilever assembly!

12. Re-check Vertical Tracking Force (VTF)
13. Adjust Anti-skating using the WallySkater.
14. If you are not using a WallyTools customized shim for your cartridge, adjust azimuth **ELECTRONICALLY**. Both the visual inspection of cantilever alignment on vertical plane method and the phase cancelling method are **NOT** accurate and cannot confirm maximum stereo separation.
15. Check the horizontal alignment of your cantilever every 3-6 months. The reason for this is the break-in of the stylus/cantilever suspension and aging of the damping polymers. Invariably, such break-in and aging can cause some degree of drift in the stylus/cantilever location.



ENJOY ANALOG FOREVER!!! - *Wally Malewicz*

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ILLUSTRATIONS

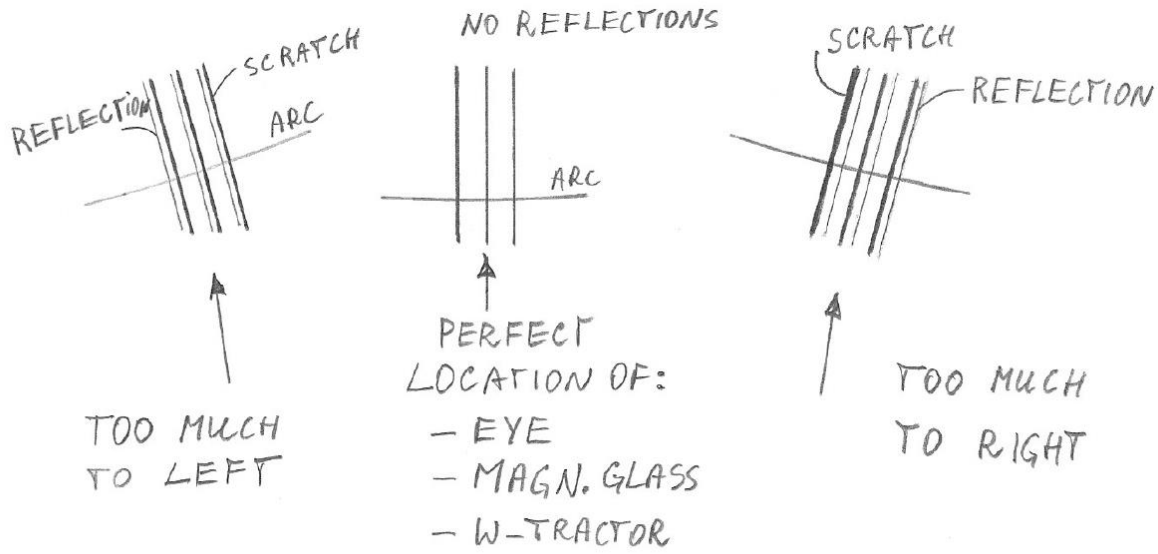


Fig. 1

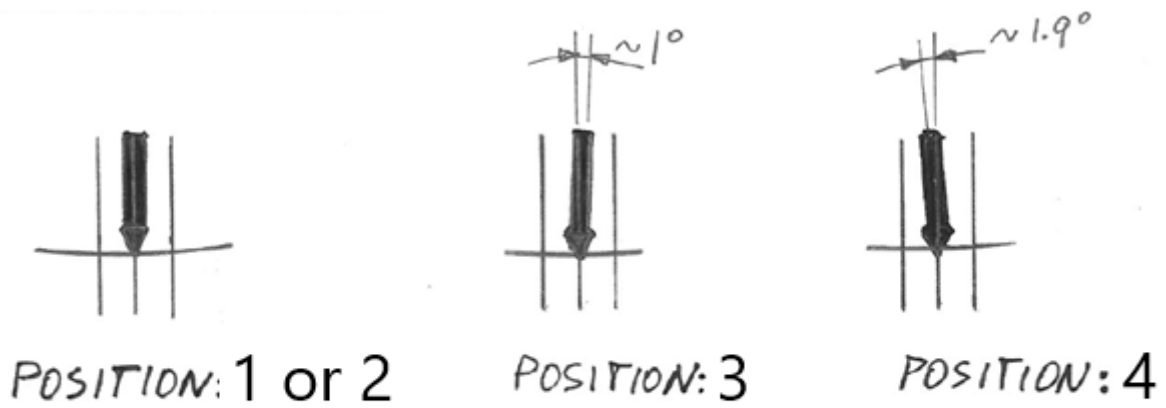


Fig. 2

Fig. 3

Fig. 4