

How to tune 1/7 syntonic comma modified meantone

According to Jean Baptiste Romieu - As found in "Tuning the Historical Temperaments by Ear" by Owen Jorgensen

$E_b - B_b - F - C - G - D - A - E - B - F\# - C\# - G\#$

1. Assume the piano is at A-440 Hz in equal temperament. Begin with D. Do not change pitch.
2. Tune G_{35} from D_{42} (5th) narrow at **1.0 BPS**.
3. Tune C_{40} from G_{35} (4th) wide at **1.4 BPS**.
4. Tune F_{33} from C_{40} (5th) narrow at **0.9 BPS**. Check that $F_{33} - D_{42}$ (6th) beats 6.2 BPS (wide).
5. Tune A_{37} from D_{42} (4th) wide at **1.6 BPS**. Check that $F_{33} - A_{37}$ beats at 4.7 BPS (wide). Also check that $A_{37} - C_{40}$ beats at 9.3 BPS (narrow).
6. Tune E_{44} from A_{37} (5th) narrow at **1.2 BPS**. Check that the minor triad $A_{37} - C_{40}$ beats at 9.3 BPS and that $C_{40} - E_{44}$ beats at 7.0 BPS. Then check that both $G_{35} - E_{44}$ and $C_{40} - E_{44}$ beat at 7.0 BPS.
7. Tune B_{b38} from F_{33} (4th) wide at **1.2 BPS**. Check that $B_{b38} - D_{42}$ and $F_{33} - D_{42}$ are both equal beating at 6.2 BPS. Check that $G_{35} - B_{b38}$ (minor 3rd) beats at 8.3 BPS (narrow).
8. Tune E_{b31} from B_{b38} (5th) narrow at **0.8 BPS**.
9. Tune E_{b43} from B_{b38} (4th) wide at **1.7 BPS**. Check the octave E_b to E_b . Check that $E_{b31} - G_{35}$ beats at 4.1 BPS. Check that $G_{35} - B_{b38}$ (minor 3rd) and $G_{35} - E_{b43}$ (minor 6th) both beat at 8.3 BPS. Then check the 2nd inversion C minor chord. Check that $G_{35} - E_{b43}$ (minor 6th) beats 8.3 BPS and that $C_{40} - E_{b43}$ (minor 3rd) beats at 11.1 BPS.
10. Tune B_{39} from E_{44} (4th) wide to beat at **1.8 BPS**. Check that $G_{35} - B_{39}$ (major 3rd) beats at 5.2 BPS. Check that $B_{39} - D_{42}$ beats at 10.4 BPS (2:1 ratio).
11. Tune D_{30} from D_{42} **pure**. Check the octave $D - D$.
12. Tune $F_{\#34}$ from B_{39} (4th) wide at **1.3 BPS**. Check that $D_{30} - F_{\#34}$ beats at 3.9 BPS (wide) and that $G_{35} - B_{39}$ beats at 5.2 BPS. Check that $F_{\#34} - A_{37}$ (minor 3rd) beats at 7.8 BPS (narrow). Check that $F_{\#34} - D_{42}$ (minor 6th) beats at 7.8 (narrow).
13. Tune E_{32} from E_{44} **pure**.
14. Tune $C_{\#41}$ from $F_{\#34}$ (5th) narrow to beat at **1.0 BPS**. Check that $F_{\#34} - A_{37}$ beats at 7.8 BPS and that $A_{37} - C_{\#41}$ beats at 5.9 BPS (4:3 ratio). Check that $C_{\#41} - E_{44}$ beats twice as fast at 11.7 BPS as $A_{37} - C_{\#41}$ at 5.9 BPS. Check that $E_{44} - A_{37}$ beats at 1.2 BPS (narrow) and that $E_{32} - B_{39}$ beats at 0.9 BPS (narrow). Check that $E_{32} - C_{\#41}$ (6th) and $A_{37} - C_{\#41}$ (minor 3rd) both beat at 5.9 BPS.
15. Tune $G_{\#36}$ from $C_{\#41}$ wide at **1.5 BPS**. Check that $G_{\#36} - E_{b33}$ (wolf diminished 6th) beats at 3.7 BPS. Check that $E_{32} - G_{\#36}$ beats at 4.4 BPS (wide). Then check that $G\# - B$ and $G\# - E$ both beat 8.8 BPS. This is a 2:1 ratio.