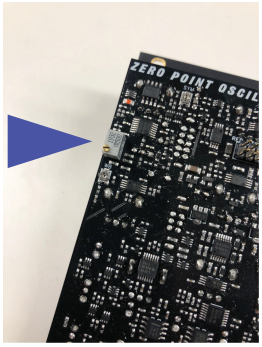
ZERO POINT OSCILLATOR V/OCT CALIBRATION PROCEDURE

Please follow the outlined procedure to recalibrate the V/OCT tracking on your ZPO.

READ THROUGH ALL INSTRUCTIONS and FAMILIARIZE YOURSELF WITH THE PROCEDURE BEFORE YOU BEGIN

SETUP

1. Verify tracking errors and make a note of the octave range (lower/upper) that is out of tune.



2. Locate the Grey multi-turn trimmer located at the top right hand side of the ZPO. The module should be held upright with the back of the module facing you, Throughout the procedure.

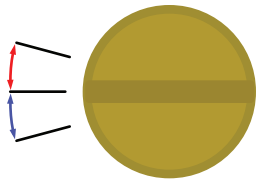
3. Patch your V/OCT source into the V/OCT input on the ZPO.
   Patch the ZPO SINE output into a Tuner, such as the Mordax Data etc.
   If possible, patch the Thru output from the tuner into a headphone amp or speakers for monitoring.

TUNING PROCEDURE

ATTEN: adjustments should be made in VERY SMALL increments only. This will ensure the most trouble-free tuning.

Turn up if upper octaves fall out of tune ▲

Turn down if lower octaves fall out of tune ▼



ATTEN: It will be very helpful to mark the starting position of the trimmer with a fine marker so that you can return to the starting point if tuning gets out of hand or you find that you needed to turn in the opposite direction. Mark one side of the actuator AND where it lines up on the trimmer body.
You should NOT have to turn beyond ONE FULL turn in either direction - if you do, please contact SSF for assistance.
Please double check that your V/OCT source is outputting the precise voltage levels: +1V for every octave.

4. Set your V/OCT source to output the lowest octave - this is usually 0V but may be a negative voltage, which is fine - just remember how to get back there whether a note on a keyboard or otherwise.
   THIS WILL BE YOUR BASE REFERENCE VOLTAGE

   Using the above reference source voltage (this will be your base tuning,)Tune the ZPO to 32.7Hz by hand using the Pitch and Tune controls. This equates to C1 on the equally tempered scale.

   Before touching the trimmer, apply a few octaves up and down from your V/OCT source while monitoring your tuner and make note of where the ZPO falls out of tune.

   Make ONE very small adjustment to the trimmer in the direction of increased tracking error.

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5. Return to your BASE REFERENCE VOLTAGE via the V/OCT source, re-tune the ZPO back to 32.7Hz with the ZPO TUNE Control. The change may be slight but it is very important that you do this after every single adjustment or you might lose your mind…

*****YOU MUST RE-TUNE THE ZPO BACK TO 32.7Hz (or whatever your original base tuning was) AFTER EVERY ADJUSTMENT TO THE TRIMMER!

6. Once you have completed step 5, once again apply a few octaves up and down from your V/OCT source while monitoring your tuner and make note of where the ZPO falls out of tune - or back into tune.

7. Repeat steps 4-6, while continuing to make very small incremental adjustments until the tracking is satisfactory.

WHAT TO EXPECT

Properly tuned, the ZPO should track across at least 5-6 octaves to within 1 cent or better. You may find that the tuning will vary within that 1-cent range across the octaves, including adjacent octaves or within the upper or lower range.
It is up to you to decide on what works for you, as most human beings cannot even hear a few cents while the lucky (or unlucky) ones can hear about 1-2 cents of pitch shift, while paying close attention.

The ZPO does exhibit drift, this is completely normal and intentional - analog pitch drift is a hallmark of vintage oscillators and while subtle; 1-1.5 cents, it has a big impact on human perception and produces a more organic feeling and sound. We suggest to let the ZPO settle a few seconds while tuning your base and watching the tuner - taking note and becoming familiar with the drift behavior.

****If tuning gets worse while trimming in a particular direction, you either went too far or need to trim in the opposite direction. We stress that you make note of your starting point before calibration as noted above and only make very small incremental adjustments for a quality calibration experience and your own sanity.

You can contact us if you are having trouble or have any concerns: andrew@steadystatefate.com

Follow these instructions for periodic tuning and maintenance