Maestro VFO-A Tuning Knob Balancing Mod Installation Guide

August 17, 2016

A slight VFO-A tuning knob imbalance in the early production models of the Maestro could result in a slight rotation of knob after it was released. This would result in a slight frequency change of Slice A. The following guide will provide the necessary step-by-step procedure for installing a counter weight modification to the VFO-A tuning knob to better balance rotational movement preventing post tuning frequency excursions.

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Obtaining Technical Support

If you encounter any issues installing or operating SmartSDR or Maestro with a FlexRadio Systems Signature Series software defined radio, please use our online Community (https://community.flexradio.com/flexradio) to find information about SmartSDR and the FLEX-6000 radios. If you need assistance using the Community, please refer to the community topic "How to use the FlexRadio Systems Support Community" (https://community.flexradio.com/flexradio/topics/how_to_use_the_flexradio_systems_support_community).

If you are unable to find an existing answer to your issue on the Community, please contact FlexRadio Systems technical support by opening a HelpDesk support ticket on-line at https://helpdesk.flexradio.com/

For details on how to submit a HelpDesk support ticket, please refer to the following URL: https://helpdesk.flexradio.com/hc/en-us/articles/202118688-How-to-Submit-a-Request-for-Technical-Support.

Hours of Operation: Our Technical Support engineers are available Monday-Friday from 9:00am-5:30pm Central Time. If you contact Support after business hours, on a holiday or weekend, we will respond to your request for assistance during regular business hours in the order the tickets were received.

Getting Started

VFO-A Balancing Kit Contents

Remove the Maestro VFO-A Balancing kit contents from the packaging and verify that the following items are included before proceeding. Refer to the image below.

- one (1) Flanged nut (counterweight)
- One (1) 5/64 l-wrench
- Two (2) strips of White cloth tape

Required Tools

All tools needed for this modification are included with the VFO-A Balancing Kit.

Preparing for the Maestro VFO-A Balancing Kit Installation

If the Maestro is powered on, power it off by pressing the Power Button on the top. Disconnect all cables.

Use a flat, well-lit surface such as a table or work bench to perform the Maestro VFO-A Balancing modification. The Maestro should be sitting on with the fixed tilt stand or the constant torque feet.

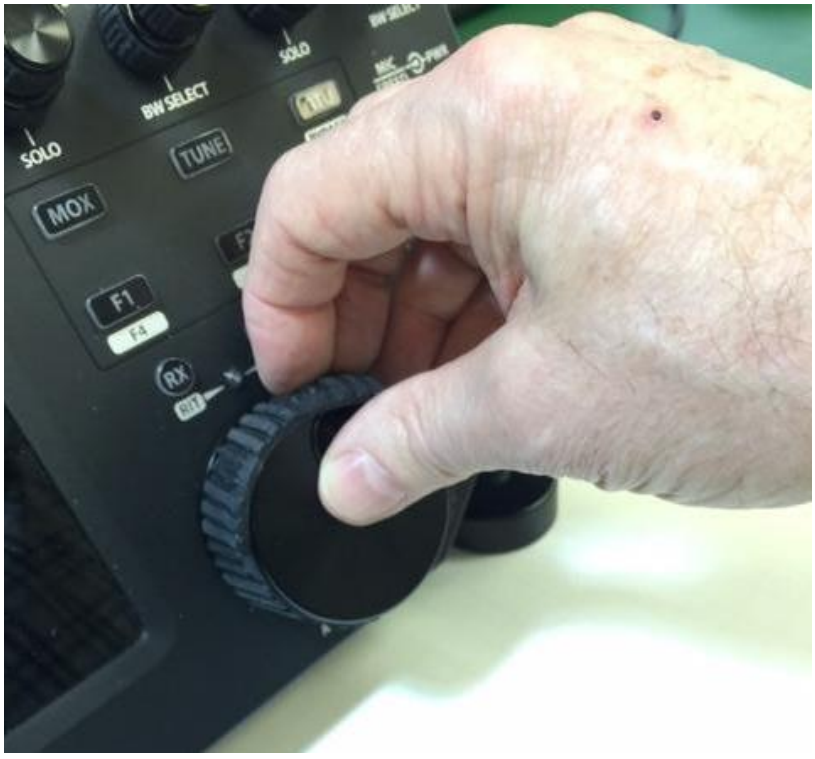
Make sure to observe basic ESD control procedures to prevent static discharges that may damage sensitive electronics components inside the Maestro such as grounding yourself to reduce static electrical build up.

Installing VFO-A Balancing Modification

In summary, the VFO-A tuning knob will be removed, a counterweight installed and the knob reinstalled on the Maestro.

Removing the Rubber "grip" Ring from the VFO-A Knob

With finger tips gently pull rubber grip ring towards you. It should easily slip off the VFO-A tuning knob as shown.



Removing the VFO-A Tuning Knob from the Maestro

Rotate the VFO-A tuning knob until you locate the hole on the side of the knob containing the set screw when attaches the tuning knob to the encoder shaft. The hole will be 180 degrees opposite of the finger dimple in the face of the knob. Using the supplied 5/64 L-wrench, insert the long end into the knob on opposite side of spinner. Make sure the L-wrench is seated in the set screw and loosen set screw by rotating L-wrench approximately 1 turn counter-clockwise. See photo below:

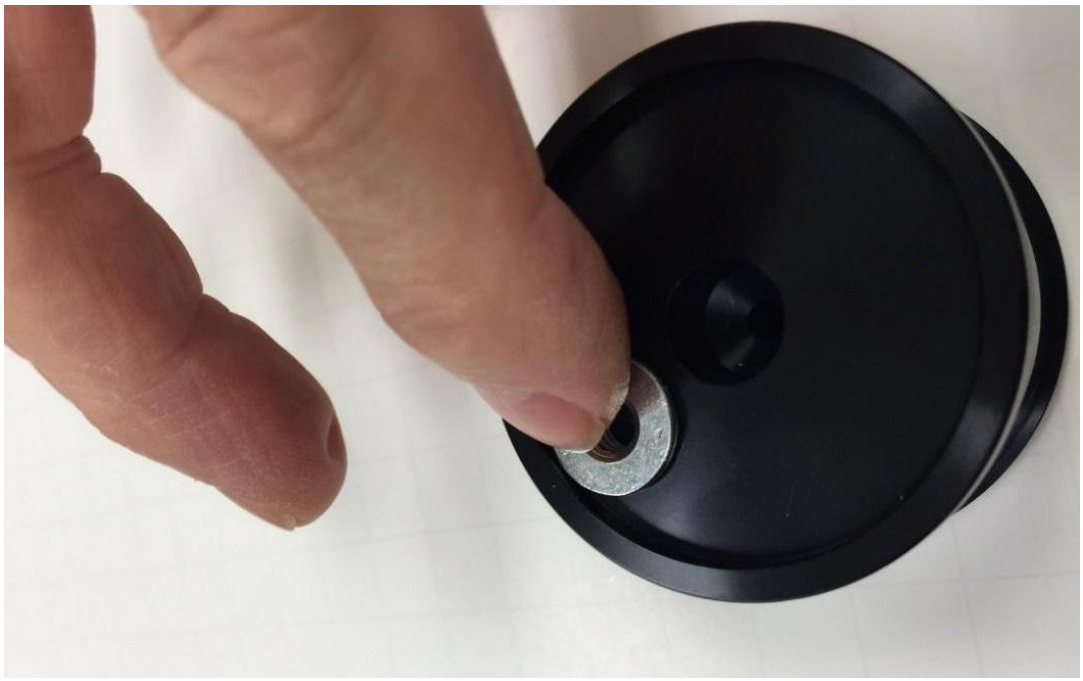
Once the set screw is loosened, slide the knob off the encoder shaft by gently pulling the knob forward.

Installing the Counterweight in the Finger Dimple Recess Hole

Place the VFO-A tuning knob face down on a flat surface. Insert the counterweight (flanged nut) into the finger dimple recess hole so that the flange is parallel with the back of the tuning.

Preparing to install the counterweight

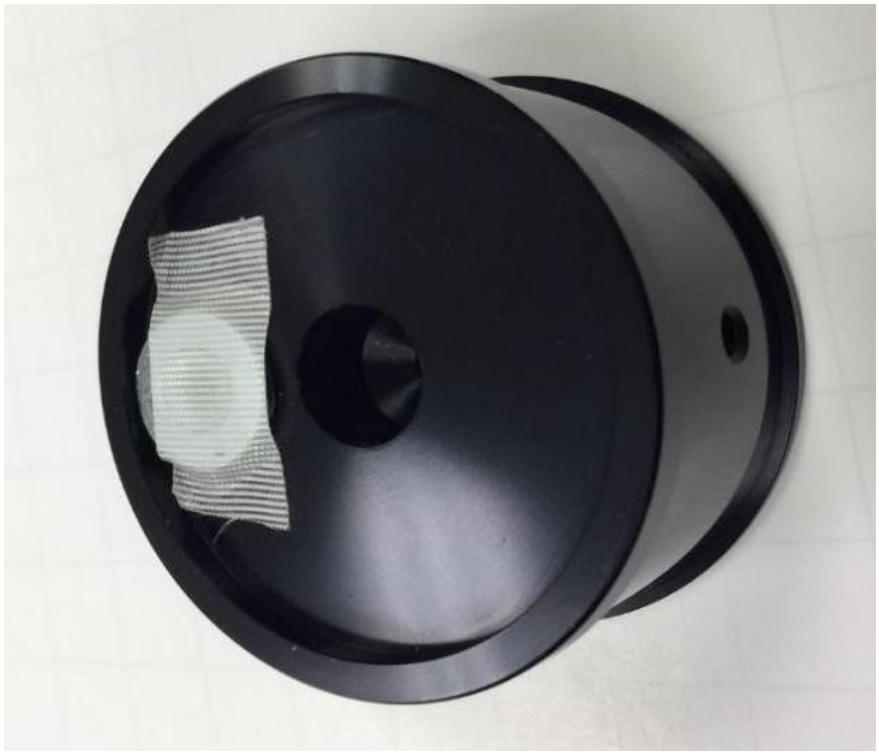
Below is an image showing the counterweight properly seated in the finger dimple recess hole.



Secure Counterweight to the back of the VFO-A Tuning Knob

Using a 1” (2.54cm) length of cloth tape, secure the counterweight in place by taping it to the back of the knob Use caution not to apply the tape to the top ring on the back of the tuning knob, keeping all of the tape on the inside recessed surface (tape may be trimmed to fit if necessary). Press firmly on complete top surface of tape to ensure the counterweight is secured in place. An extra length of tape provided in case first application difficulties

Below is an image showing the counterweight properly installed



Reinstall the VFO-A Tuning Knob on the Maestro

Place knob back on Maestro VFO-A shaft until it rests on the bottom of the shaft encoder. Insert and use the 5/64 L-wrench to retighten set screw. Use caution not to over tighten the set screw.

Start up the Maestro and test the push button and rotational action of the knob to ensure it is working properly. Once satisfied with the knob is working properly, slip the VFO-A rubber grip ring back on knob.

When installing the rubber grip ring, note that there are wide flat ridges that extend the entire width of the ring. There is also a set of two shorter and smaller ridges with a "gap" on one end interspaced around the knob. The correct orientation of rubber grip ring is when the gap is facing forward as shown below.