

## How to adjust the aftertouch sensitivity for a Korg M1

If you are reading this your M1 more than 20 years old.

The mechanism for sensing aftertouch on a keyboard will go out of adjustment after a number of years. Usually the result is a keyboard that you really have to push down on hard to get any aftertouch MIDI output. Just as bad as having to push down hard to get a change it also rapidly goes to full just past that point, because you are pressing too hard to smoothly change downward pressure.

Fixing this is easy, all you need is a #2 Philips screwdriver, and optimally a connection to a computer running a program like midiox that will allow you to see the actual midi controller levels while they are being tweaked. You can make these adjustments without connection to a computer but it really helps in setting the sensitivity curve.

First get some books and stack them up so you have 2 piles about 3 inches high as blocking. You are going to have to lay the korg upside down and on its back. When it is upside down you want to make sure that it isn't resting on the joystick. When setting the levels you will want to be able to have the keyboard on its back, straight up, so you can make adjustments while pressing on a key, put it on books then as well so it is not resting on the plugs.

Make a simple **DWGS sine 16', one tone program, no FX, gated envelope, no lfo, or modulation, set aftertouch pitch to -12**. Use this patch when setting. I found it best for hearing the response curve.

With the keyboard upside down remove every screw on the bottom but the ones that hold the feet on.

Tilt the bottom panel up and slide it to the front of the keyboard to remove it. It hooks a bit at the front.

There is a felt covered strip that runs under all the keys close to the front. It works by measuring the compression on a three layer strip under the felt. I think it measures the capacitance. The three layer strip is copper/rubber/copper, so any compression anywhere along the strip changes the Farads. It is attached by a grey shielded wire to a small circuit board that is on the back of the keyboard assembly. It is the smallest circuit board there. On it are two white trim pots (rotary variable resistors), they are the only pots you can see.

The pot closer to the joystick controls the pressure level to start outputting aftertouch pressure data, and the pot farther from the joystick controls how hard you have to press to get maximum aftertouch levels.

Make the adjustments with the keyboard on its back so you can press a key and turn a pot at the same time.

Start with the one **closest to the joystick**, The more you turn it **counter clockwise the less you need to press to start outputting aftertouch** messages, the more you turn it **clockwise the harder** you have to press to **start** outputting aftertouch.

For the one **farthest from the joystick**, the more you turn it **counterclockwise the less you need to press to get a max aftertouch level**, and the more **clockwise the harder you need to press** to get a maximum level (7F).

Additional notes:

- Don't set the lower level too low, the keyboard will be too sensitive (unless you want it that way). Or it will always output a MOD level higher than Midi hex 00.
- If you try and get the range too close in pressure levels, transition data won't be smooth; there will be a big jump from 00 to 20. You will have to go back and forth a bit with the two settings as adjusting one affects the other slightly.
- If you are using MidiOx to view the data, make sure that the output range starts at 0 and there are no jumps, you should see data from the full range (00-7F).
- If you are setting by ear use the DWGS sine patch, hold one note lightly and press another note an octave above harder. You should be able to get a full slide, with no chop without pressing too hard and you shouldn't have any pitchbend when lightly touching the keys.
- While you are under there you can improve the joystick action as well. The M1 outputs MOD control by pushing it forward, and BreathControl when pulled towards the player. In most cases you want BC to spring back to zero but it would be nice to be able to park the MOD CC like you can on a wheel. You can do this by tying back one side of the forward/back spring to the frame of the joystick module with a piece of thin wire. Pull it back far enough that when the joystick is fully forward it outputs 100% mod (Midi Hex B0 01 7F) and tie the spring in place. Don't pull the spring all the way back, set it so the joystick mechanism engages the spring exactly when it reaches full MOD output. Otherwise there will be a dead-zone of unsprung movement that does not change the mod level. This way you can park the stick like a mod wheel.
  
- The korg M1 was and still is a 'flagship' level keyboard. The mechanical keyboard parts in it are as good as or better than pretty much anything built today. For example the note on/velocity triggers on it are the double metal-reed types, not the elcheapo computer keyboard silicone cup on a circuit board. And the keys are the long style, hinged farther back in the keyboard than right at the back edge of the visible key, giving it a slightly heavier touch with a bit of rebound than a standard springy synth. Even if you think the synth sucks soundwise it's a great controller. You still see it on stage today, driving other racks.

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