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Earthworks PM40 and PM40T PianoMics

BY PAUL VNUK JR.



At its simplest, piano miking is a balance of microphone choice and proper placement. But which mic, and where to place it? Is the lid at full or half-stick? I want stereo, but what about phase and tonal issues when adding a second mic? What if the lid needs to be closed due to bleed from outside instruments?

Much of the time a simple large-diaphragm mic or two in a fully open piano is a great solution, but the minute you add other musicians into the mix, or a coughing, cell phone-addicted audience in a solo recital, you may need to find some other solutions. I have taped boundary mics to the piano lid, placed packing blankets over the piano at half-stick, placed mics on the floor under the soundboard, and gone through every large- and small-diaphragm condenser in my collection in my attempts at getting a believable piano tone minus bleed.

For me the solution arrived a few years ago when the church where I do sound purchased an Earthworks PM40 PianoMic System, and now that Earthworks has expanded the line with the new PM40T touring model, I get to fill you in on what they can do for you.

The system—solutions to problems

The PianoMic system consists of a pair of Earthworks miniature-diaphragm omni condenser mics, mounted on a telescoping metal bar that rests on the piano edges parallel to the keyboard. Sounds simple enough, but looking closer you will see that each of these areas is actually an innovation designed to tackle a specific area of the piano miking problem.

The mics are a matched pair of what Earthworks calls random incidence omnidirectional microphones. Unlike a guitar or a violin with a single focused sound hole, inside a piano the sound resonates from

everywhere, and these mics are designed to not care where the sound emanates from.

Some mic specs: 9 Hz–40 kHz frequency response, a sensitivity of 15mV/Pa (–36 dBV/Pa), a peak acoustic input of 148 dB SPL, and self-noise of 22 dBA. Each mic is 1 1/2" long and approximately 1/2" at its largest diameter, attached to a 4 3/4" flexible but sturdy gooseneck arm. The mics are US-made and have a 15-year warranty.

Setting the bar

The goosenecks attach to the telescoping metal bar that extends from 46 to 64" with a set of adjustable compression clamps like you would find on typical mic stand. The mic goosenecks are permanently spaced 16" apart, or 1/3 the width of a standard piano keyboard, the distance chosen to eliminate phase issues.

Each end of the bar is attached to a flat L shaped/felt lined bracket that gently rests on the straight parallel sides of the piano body, so the bar hovers just above the strings and dampers.

On the original PM40 model this bar is one single piece; on the new PM40T touring model it is actually two pieces that connect via a specialized internal XLR connection, making it easy to collapse for storage and travel. Each model includes its own specialized aluminum flight case, the PM40T's being much easier to transport due to its break-apart design.

Attached to one end of the bar is a thin, durable cable that terminates into a 5-pin male XLR connector that plugs into the included DI box. This box has two standard male XLR connections on its opposite end for connection to your mixer. It also distributes the necessary phantom power to each mic.

Earthworks recommend two things for setting up the PM40T: One, do not try and place the armature on the curved part of the piano, and two, for the most natural sound try and place the bar so the mics are 2 to 3" in front of the dampers, meaning the side away from the keyboard. All in all, set up takes less than 10 minutes. Clip the bar together, adjust to fit, plug and go. From there you can make small tweaks to the mic positions for treble and bass response.

Setup and use

The PM40T exhibits the clean and unobtrusive realism that Earthworks is known for. In other words, it sounds like your piano. If your piano is in poor shape, with noisy pedals, bad dampers, and buzzes, you'll hear it all!

Working with these mics I noticed an instant difference in our piano sound, and the musicians on stage noticed a huge change in their in-ear monitoring system. Not only was the bleed from the other instruments significantly lessened, but even with the lid fully closed the sound retained its natural character without sounding boxy like a boundary mic on a closed lid.

In a mix this system gives fuller bass tone at much louder volumes with little chance of feedback. And even though the mics are essentially in a fixed position, you can adjust the goosenecks pretty liberally to tweak the highs and lows and find the sweet spot. See the Earthworks website for figures and diagrams with suggested placement tweaks.

Conclusion

At \$3000–\$3200 street the PianoMic is not a cheap investment, but then again neither is a good-sounding, well-maintained grand piano! If piano recording or mixing in a live setting is part of your world, this system commands serious consideration. ☺

Prices: PM40/40T, \$2999/\$3199 (street)

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