

Miata Headrest Speaker Specifications and Installation Tips

 Check out our on-line installation guide with over 20 pictures! <http://www.3rdstrategy.com/gallery.html>

Installation tips

Don't hesitate to just screw these into your existing Miata headrest boxes and go for a drive! However, if you are interested, we do have a few tips to help maximize performance:

- We do not recommend using the Millennium-5 speakers without boxes. If you need speaker boxes we manufacture an exact-fit replacement available on our website. As a past 3rd Millennium customer, you can get the boxes at a discounted price. See website.
- We recommend that the Miata stock headrest boxes be lightly filled with fiberglass or acoustic dampening material. We include the correct type of filling with our headrest boxes (part NABX1) and Retrofit Kit.
- For the ultimate in performance, the speakers should form an air tight fit in the boxes. While not absolutely required, you can easily accomplish this. Apply a very fine bead of silicone caulk (available at any home improvement store) to the rim of the box where the speaker will lie. You only need enough to wet the area. Let it dry completely before installing the speaker. This essentially forms a gasket to better acoustically seal the speaker into the box. Also, before the final fitting of the speaker, put a dab of silicone caulk where the wires enter the box to seal that hole. Let the caulk dry completely before playing music.
- All Millennium-5's include crossover/blocking capacitors to help protect the speakers and permit maximum performance. Regardless of crossovers, always be careful not to drive the speakers to distortion! Note that damage to the speakers caused by overdriving with excessive power or low-frequency energy is not a defect and is not covered by the limited warranty.
- If after installing the speakers they sound weak or thin, the polarity of the wiring may be mixed up causing the speakers to be out of phase. Many Miata's came from the factory with incorrectly wired harnesses for the headrest. This is easy to correct. Simply open up the headrest in question and remove only one of the speakers. Reverse the wiring and reinstall. The sound should be noticeably improved when the phase is correct. For the factory harness, the wiring can only be installed one way – **the large terminal is plus.**
- Also, some users have reported finding existing capacitors in their headrest wiring that are noticeably different in value from the 150uf recommended above. If you find such a capacitor and the sound still seems thin or weak to you even after checking phase, remove the capacitor entirely and re-test. Many capacitors are incorrectly sized allowing only the highest frequencies through to the speakers.
- Finally, if you have a Miata factory radio still in your car, we should point out that some of these radios came configured with blocking capacitors for the headrests outputs intended for tweeters. Obviously you don't have tweeters in your headrests but midrange speakers. While it's possible to remove your radio and have the components that limit the lower frequencies from reaching the headrest speakers removed, we suggest you seriously consider replacing the head unit. Even though the factory radios (Panasonic) were of good quality, some of these factory radios are as much as 25 years old and we don't suggest putting money into maintaining such an old radio. With HD radio now becoming widely available, you have many good and new choices for Miata radios.

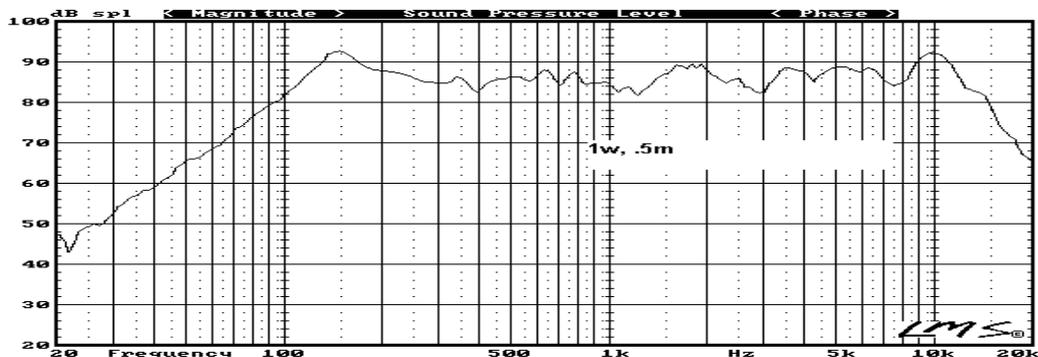
Usage tips

We recommend adjusting your stereo balance as follows: while safely driving at a normal speed, turn your stereo's balance control fully forward so that all sound is coming out of your door speakers. Adjust your left/right balance until you get a good stereo coverage. Then slowly adjust your fader to start bringing sound to the headrest speakers. Continue fading to the headrest speakers until you are hearing more content from the headrests than the doors. Stop and fade back slightly to the door speakers so that they are now louder. This is the optimal point for creating a 3D stereo field and also compensating for wind noise.

Specifications

The Millennium-5 is a high fidelity, compact mid-range speaker specifically designed for the 90-97 Miata. The oem headrest enclosures in the 90-97 Miata or our NABX1 boxes are sized for good response and damping.

Speaker rated impedance	8 ohms	Sensitivity	85db ± 2dB average measured at 0.5 / 0.6 / 0.8 / 1.0KHz, 5.4v osc. input
Cone type	Polymer impregnated paper	Speaker impedance at resonance	12.41 ohms
Surround	Butyl rubber	Vas	.13 liters
Basket	Stamped steel	Magnet weight	1.7 ounces
Speaker DC resistance	10.9 ohms	Rated Power	5 watts continuous white noise 8 hours, 10 watts 10 minutes, 75 watts peak
Free air resonance	145 Hz	Frequency Response	100 - 14KHz -3dB



Miata Headrest Speaker Wiring Recommendations

Miata headrest speakers can be properly wired in either a parallel or a serial configuration. The Millennium-5 speakers are 8 ohms so it is safe to wire either in parallel or series.

If factory wiring is present in your Miata, it is usually parallel. Note that factory headrest speaker harnesses were often mis-wired so we recommend you verify wiring with an ohm meter all the way from the radio to each headrest speaker. Also, Miata's are many years old at this point and often previous owners will have installed various radios & speaker combinations over the years. Regardless of the year or apparent visual condition of your wiring/radio, we recommend that you verify the speaker wiring and correct polarity from the back of whatever head unit is installed all the way up to the headrests.

Note that all Millennium-5 speakers include crossover/blocking capacitors pre-installed.

And while not a wiring issue, we emphasize that speaker boxes should always be used in the Miata. They not only ensure proper damping and sound of the speakers, but provide a means for safely securing the speakers. If you're performing a retrofit installation or your headrest boxes are missing or damaged, we have replacements available on our website at www.3rdstrategy.com

