

AEA R92

OWNER'S MANUAL



CLASSIC PASSIVE RIBBON FOR UP-CLOSE

WELCOME

Congratulations on your purchase of the AEA R92 ribbon microphone and welcome to the AEA family. AEA's team of engineers set out once again to expand the sonic possibilities of ribbon microphones with the R92 model. We consider the R92 a near-field ribbon, delivering a bass-to-treble balance from up-close. It's reduced proximity bass boost and excellent wind blast protection make it suitable for close miking of guitar and bass amps, drums and vocals. In addition, the integrated shock mount and swivel allow for easy setup and positioning in tight spaces. Utilizing the R92's option of contrasting 'crisp' front and 'traditional' back lobe make the microphone a great tool to implement in the studio and live.

Your R92 microphone is 100% handcrafted in Pasadena, CA. AEA is a family owned company with a small crew of skilled technicians – most of them being musicians themselves. Proudly independent, we still manufacture all our ribbon microphones and preamps by hand from locally sourced parts.

We hope your microphone will capture many magical performances that touch the heart. This manual will help ensure that you get the best sound and longevity from your new microphone. Please become part of the AEA community by sharing your experiences via e-mail, phone or social media.

Wes Dooley
President of AEA

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INTRODUCTION

The R92 is a pill-shaped, side-address, passive ribbon microphone with a bidirectional (or figure-of-8) pickup pattern. It is assembled with the same Big Ribbon™, tuning (16.5 Hz) and transformer as the R44. Accommodating close and medium miking duties, the R92 exhibits a flat frequency response when placed 6-12 inches (15-30 cm) away from the source, capturing the classic body and dimension of the Big Ribbon™ sound with reduced bass proximity effect. As a result, the mic is well suited for electric guitar, percussion, brass, vocals and drums. Its compact, lightweight design and integrated 360° swivel mount allows for placement versatility, while the custom shock mount suspension mitigates undesired low frequency mechanical vibrations. What makes the R92 truly unique is the contrasting tonal response on the front and back lobes: the front side is defined by a “crisper” characteristic, while the back side has a smooth, “traditional” top end roll-off.

WARRANTY

Your R92 series mic comes with a one-year limited warranty on parts and labor, shipping not included.

Registering your product with AEA will extend the warranty to a full three years.

Register your microphone at [AEAribbonmics.com](https://www.aearibbonmics.com).

SUPPORT

If you should encounter any problems with your microphone or have questions regarding using your R92 in specific application, please contact our customer support team at support@ribbonmics.com.

To talk to a live human being, call +1 (800) 798-9127, between 9:00 A.M.- 5:00 P.M. PT Monday through Friday. AEA's repair center is located at 1029 N. Allen Ave, Pasadena, CA 91104, U.S.A.

GENERAL GUIDELINES

Your microphone is a valuable and important investment. Like any piece of recording equipment or musical instrument, it requires common sense and good basic care to keep it working properly. Given simple, basic care, your new microphone will perform admirably for decades.

PHANTOM POWER

Phantom power is not required or recommended for the passive R92. We recommend avoiding the use of phantom power with your R92 as a general rule. With a correctly wired cable and a properly working phantom power supply, there is actually little danger of damaging an R92 microphone with phantom power. However, passive ribbons such as the R92 will get hurt if ground Pin 1 is accidentally shorted, mis-wired, or hot patched in a patch bay to Pin 2 or 3. Using phantom power with a faulty or mis-wired cable or a defective supply can severely stretch or break a ribbon.

Since passive ribbon microphones or other transformer-coupled microphones are particularly sensitive to phantom-power, it is recommended to make disengaging phantom-power before plugging and unplugging a habit.

PREAMPS FOR PASSIVE RIBBONS

Passive ribbon microphones generally have low output level and require preamps that supply a high level of gain. If the preamp you use does not have enough gain, the signal might seem too soft or noisy.

The preamp input impedance affects the output level of the mic in addition to the mic's frequency and transient response characteristics. It is generally recommended to use a preamp that is at least 4 times the input impedance of the microphone's output impedance. However, a low or very high input impedance on a preamp will not hurt a ribbon microphone. We recommend clean, high impedance preamps with a minimum input impedance of 1.2k Ω and at least 65dB of gain. To unleash the full potential from your R92, AEA manufactures high-quality, high-gain, low-noise preamps with a very high input impedance designed to

bring out the full frequency response of ribbon microphones. Visit AEARibbonmics.com to view our line of exceptional preamps.

MICROPHONE STORAGE

Keep the microphone covered when it is not in use. Keeping the microphone covered when it is not in use will reduce the possibility of damage that might result from a sudden gust of air coming from air-conditioning or an open door or window. Place the supplied protective bag over the microphone when it is not in use. For long term storage, place the microphone in its protective case. Minute iron particles, sometimes known as “tramp iron,” are common within our environment. AEA ribbon microphones contain powerful magnets that produce strong magnetic fields. These fields can attract any ferric metal near the microphone that, if they are small enough, can penetrate the outer screening and work their way inside the microphone. Over time, this “tramp iron” can build up sufficiently in the magnetic gap to rub against the ribbon causing distortion, electrical shorts or tearing of the ribbon. The best prevention is to keep the microphone covered with the supplied plastic bag when it is not in use.

AIR TURBULENCE

Never expose the microphone to strong air turbulence. Ribbon microphones can withstand very high SPL (Sound Pressure Level) without difficulty, but can be damaged easily by a sudden, strong gust of air or high levels of very low frequency sound waves (like from a kick drum or bass cabinet). This can stretch the ribbon, causing the microphone to start sounding flabby. Sources that may produce strong blast of air, such as the bass port on an electric guitar or bass amp, a guitar being plugged (or unplugged) while the amp level is turned fully up, an on-axis kick-drum hole (particularly with a port on the head), are potentially damaging.

To avoid possible damage, follow this simple procedure when positioning the microphone called “The Hand Test”: put the back of your hand where the mic will be; if you can feel the motion of air on your hand, place a pop-filter between the microphone and the source of the wind gusts or simply pull the mic further back. When recording kick drums or bass guitar cabinets, angle the microphone to make sure that no wind blasts hit the microphone directly on-axis from the front or back.

Never blow directly into any microphone to test it. Not only does this force moisture and dirt into the microphone, strong air movement also can stretch the ribbon and while it may not break, it nonetheless could significantly degrade the microphone's performance. The ribbon in the R92 is protected by multi-layered screens and grille cloths to provide superior wind protection. Nonetheless, using it outdoors requires special care to avoid wind which can damage the ribbon. Indoors, however, it is also important to avoid serious air movement from stage curtains, open windows, doors, or air-conditioning systems.

MAGNETIC STRAY FIELDS

Ribbon microphones are fundamentally prone to picking up strong external magnetic fields caused by light dimmers or nearby power transformers. Guitar players will know this phenomenon from single-coil pickups. Even though much attention was paid to suppressing such sensitivity to external magnetic fields in the design of your microphone, it is still possible that you might encounter this problem. If you should pick up a hum, try rotating or moving the microphone to find a spot where the hum disappears, and try eliminating potential sources of stray magnetic fields. You can use the microphone to find where hum is originating. Rotate the mic for maximum interference and move it back and forth to sense its direction.

The high-performance magnets used in AEA microphones are incredibly strong, and a significant amount of stray magnetic field lines surround the microphone. Avoid placing the microphone in close proximity to hard drives, credit cards, analog tape, or any other magnetically sensitive items to prevent any data loss.

MICROPHONE POSITIONING

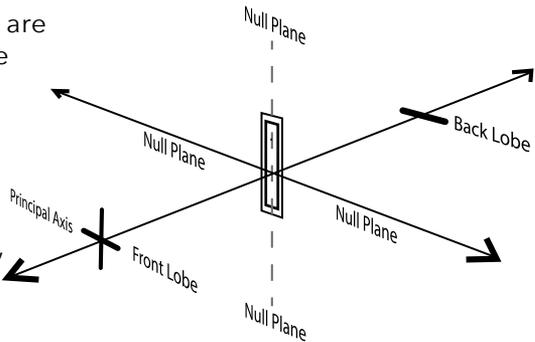
Always use a sturdy microphone stand. While the R92 was designed to work well with all standard microphone stands, a high-quality boom stand will make your life a little bit easier. The R92 was designed with placement versatility and vibration isolation in mind. The microphone body is supported by a C-shaped yoke, and is suspended using an elastic shock mount system. This structure was designed to mitigate unwanted low frequency artifacts. To obtain the shock mount benefits of the R92, we suggest adjusting the swivel mount towards the source then positioning the angle of the mic stand.

APPLICATIONS ADVICE

We actively encourage users to visit AEAribbonmics.com to access our comprehensive collection of in-depth articles and tutorials featuring the R92 microphone, along with a library of audio and video demonstrations of the R92 in action.

A FIGURE-OF-8 MICROPHONE

Figure-of-8 microphones are constructed with positive polarity on the front and negative polarity on the back. Positive pressure on the front side of the ribbon produces a positive voltage on Pin-2, with respect to Pin-3 on the output connector.



Since the R92 is bidirectional, it exhibits nulls at right angles to the principal axis. These nulls produce a “plane of rejection” around the sides, top and bottom of the mic.

DIFFERENT SIDES, DIFFERENT TONES

AEA intentionally designed the R92 to capture slightly different frequency responses from the front and rear pickup lobes. The front lobe of the R92 (denoted by the AEA emblem) is the “crisp” side, offering exceptionally clean and realistic high end detail. The rear lobe is the traditional “smooth” side, with the classic ribbon extended roll-off of the highs, reminiscent of the iconic R44. This gentle roll off helps handle harsh transients in a refined and flattering way.

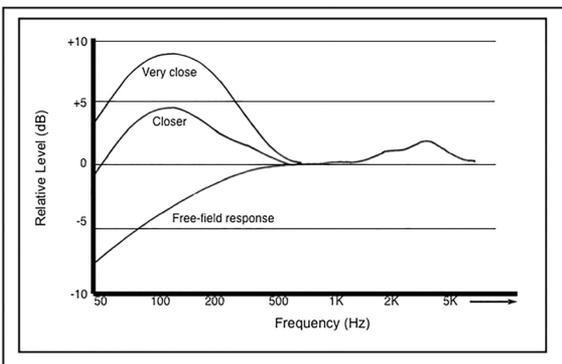
The R92’s dual characteristic provides two significant options for your recording or live projects. If one side isn’t doing the trick, try the other!

HOW TO MINIMIZE BLEED

A significant and ever-present challenge in contemporary studio recording is minimizing “bleed” (also called “leakage” or “crosstalk”) from nearby instruments into the various microphones. The deep nulls of bidirectional ribbon microphones provide good rejection of unwanted sounds, which also can be beneficial in sound reinforcement situations where feedback is always a threat. While gobos can be effective in isolating performers from each other, they introduce their own set of problems, they usually are bulky, they also inhibit the ability of the musicians to hear and see each other easily.

Keep in mind that a certain degree of bleed is not necessarily bad. For some styles and genres, it can, in fact, be beneficial to embrace a little bit of bleed in order to create cohesive and natural sounding recordings. Simply arrange the musicians so that nearby instruments are placed in the “null” of their neighbor’s microphone, and vice versa. Although this does not entirely eliminate the need for gobos, it can significantly reduce how many you may need to use. You will generally find that well-designed ribbon microphones like the R92 capture a natural off-axis sound, which means that bleed from other instruments can contribute to the overall sound in a pleasing way.

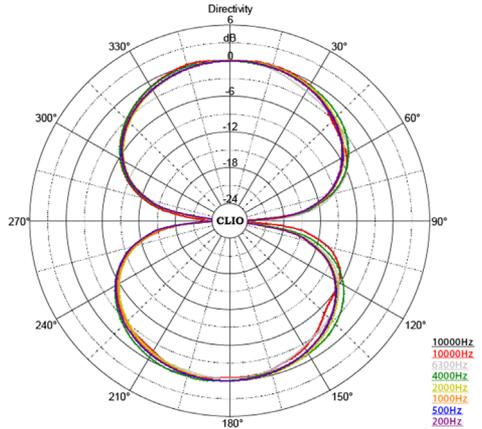
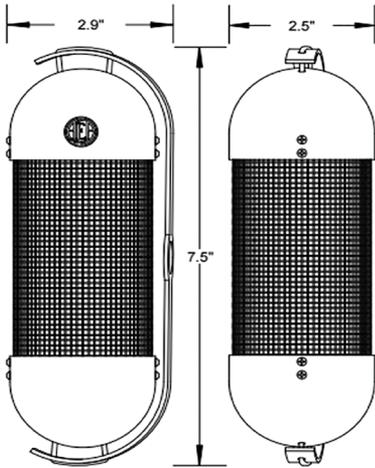
PROXIMITY EFFECT



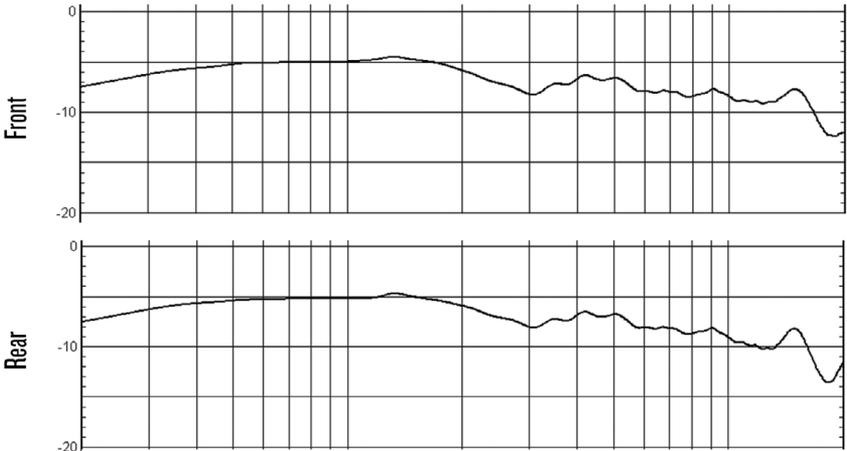
Proximity effect is a characteristic of all directional microphones; it is a rise in low-frequency response that increases at closer working distances. While this can be used to good effect, particularly with male voices to give them

an enhanced richness and depth, the potential trade-off is reduced articulation or clarity that can result from the masking effect on the treble due to “excessive” bass boost.

We consider the R92 a near-field ribbon microphone which means the R92 was designed to shine on close miking applications. However, as a figure-of-8 microphone, it intrinsically exhibits proximity effect. Compared to the R44, which achieves proximity effect from six feet away, the proximity effect from the R92 is substantially less and exhibits a flat frequency response when placed at a distance of 6-12 inches (15-30 cm) from the source.



FREQUENCY RESPONSE



R92 frequency response curves: Upper curve is front. Lower curve is rear.
0 dB = -55dBV referenced to one Pascal (94 dV SPL.)

SPECIFICATIONS

Operating Principle:	Pressure gradient transducer
Directional Pattern:	Bidirectional
Frequency Range:	<20 Hz to >20 kHz
Maximum SPL:	165+ dB SPL (1% third harmonic > 1 kHz)
Sensitivity:	1.8 mV/Pa (-55 dBV) into unloaded circuit
Output Impedance:	270 Ω Broadband
Recommended Load Impedance:	1.2k Ω or greater
Phantom Power:	Not required or recommended.
Polarity:	Pin 2 high for positive pressure at the front of the microphone.
Polar Response:	Native bidirectional, figure-of-8 pattern.
Horizontal:	Up to 90 dB rejection at right angles to the front/back axis.
Vertical:	Level changes with angle of incidence, but frequency response is consistent.
Transducer Element Material:	Pure aluminum corrugated ribbon
Thickness:	1.8 μ m
Width:	0.185 in (4.7 mm)
Length:	2.35 in (59.7 mm)
Microphone Dimensions:	
Height:	7.5 in (19.1 cm) 2.9 in (7.4 cm)
Width:	2.5 in (6.4 cm)
Depth:	1.97 in (50.0 mm)
Weight:	2 lbs (0.9 kg)
Shipping Weight:	2 lbs (0.9 kg)
Connector:	XLR-3M

Accessories Included

Storage/shipping case, user manual, captive 10" (3 meter) output cable with XLR-3M connector.



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