



SV33
Studio Vocal
Microphone

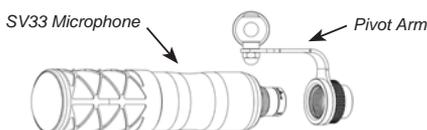
for Recording & Broadcast
User's Guide

Congratulations on your purchase of the SV33 High Definition Studio Vocal Microphone

The SV33 Studio Microphone is the culmination of two decades of engineering and innovation at Earthworks Inc., the goal of which was to celebrate the human voice by revolutionizing the way in which one can capture the full depth of nuance and emotional expression. The objective of this manual is to provide a basic understanding of the features and capabilities of this new microphone as well as some fundamental information to help you get started. As with all new technologies, the innovation process continues with you in your discovery of what is now possible.

Packing List and Identification of Items

- SV33 Microphone
- Pivot arm
- Cherry-wood box
- Warranty
- Manual

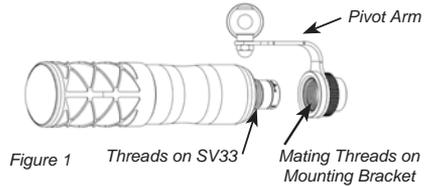


A Quick Tour

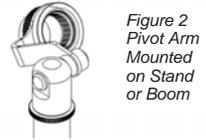
- **SV33 Microphone**
 - The SV33's grille contains a sonically transparent pop-filter, in most cases eliminating the need for an external popscreen.
 - The SV33 is an end-address electret condenser microphone leveraging Earthworks proprietary technologies to deliver a cardioid pattern with consistent flat frequency response across the microphone's entire front hemisphere. Rejection at the rear of the microphone is similarly consistent across the entire frequency range, including low frequencies.
 - The SV33 has an extremely gentle proximity effect providing consistent low frequency response that doesn't become boomy up close or thin at a distance.
- **Cherry-wood Box** - The SV33 box is hand-crafted from solid cherry-wood, providing both beauty and functionality. The strength and durability of natural hardwood coupled with its timeless aesthetic will protect your microphone for years to come.
- **Pivot Arm** - Allows mounting the SV33 on a stand or boom and enables rotation along either the vertical or horizontal axis. The microphone is constructed to provide mechanical isolation, however the pivot arm does not provide shock absorption and can be substituted with a shockmount (available as an optional accessory) if needed.

Stand and Boom Mounting

1. Because the mass and weight of the SV33 can introduce complexity into the mounting process. It is recommended to first remove the SV33 from the Pivot Arm by unscrewing the knurled black ring with your fingers (Figure 1). Gently set the microphone aside in a safe location until you are ready to complete step 3.

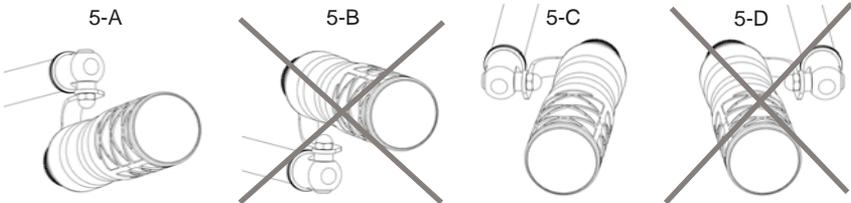
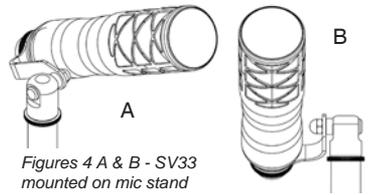
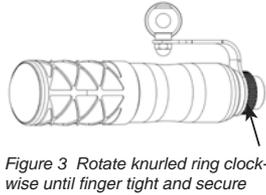


2. Mount the Pivot Arm onto the microphone stand or boom (Figure 2).



3. Insert the threaded end of the microphone into the knurled black ring, (Figure 3) and rotate the ring until it is finger tight (do not use tools to tighten).

4. Figure 4 A&B shows the SV33 mounted on a mic stand while Figures 5-A & 5-C show the recommended positions for boom mounting in order to avoid loosening of the pivot arm from the boom due to rotational torque from the weight of the microphone.



Preamps & Input Capabilities

The SV33 can provide a very clean output of up to 10 volts. However, some preamps are unable to handle this amount of input level. Be aware of the limitations of your preamps and choose one that can handle high input levels. The use of electronically balanced inputs is recommended. If you use a transformer preamp, it is suggested that you not push it too hard. Only a very high quality transformer can cleanly handle the high levels and low frequency output of the SV33.

Connecting the SV33

The SV33 requires 24-48 volt phantom power. As with all condenser microphones, the SV33 “thumps” when phantom power is applied or removed. Before connecting the microphone or applying phantom power, make sure the channel is muted. Connect the SV33 using a high-quality 3-pin XLR microphone cable. Wait 15 to 20 seconds (up to 1 minute with transformer-coupled inputs) before unmuting the channel as the internal circuitry takes time to stabilize.

SV33 Use and Fundamentals

The SV33 is capable of delivering excellent results with only modest attention given to room acoustics and conventional microphone etiquette; However, the following guidelines and suggestions are presented to help achieve consistently exceptional results.

Microphone Placement

At its core, the SV33 has been designed to pick up a wider array of sound emanating from the human body and voice. When a performer speaks or sings, there are multiple sources generating sound all at once. The contributions of the chest, neck, mouth, nose and head all sound very different from one another, and their balance continually changes. As with other complex musical instruments, like drums, piano and guitar, the position of the microphone greatly affects the sound that is captured. Developing an understanding of the unique SV33 capabilities will transform microphone placement into a powerful tool for shaping the desired vocal sound.

The following provides a few examples of what is possible through placement of this microphone:

- To capture a natural vocal sound that is similar to what a listener would hear in the room with the performer, consider placing the microphone at the same height as the performer's mouth, 6 to 12 inches away, aimed at their mouth.
- Reducing the distance to 3 inches or so while still positioning the mic in front of the mouth allows you to get a drier and more intimate vocal sound. As with all microphone placement techniques you still need to move the mic around from that starting point to find the desired tonal balance.
- A distance greater than 12 inches can be used to increase the ratio of room sound to direct vocal sound.

On-axis Frequency Response

The SV33 is flat from 30Hz to 33kHz (Figure 6).

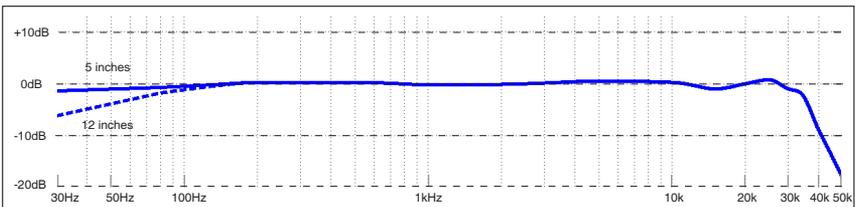


Figure 6 SV33 Frequency Response

Proximity Effect

Conventional studio vocal microphones typically exhibit a strong proximity effect. Consequently their low frequency response varies widely with distance, dropping off as the performer moves away from the microphone and increasing as they get closer. There is often only a narrow sweet spot in the range of distances that provides the appropriate balance of low frequency content for a performer's voice.

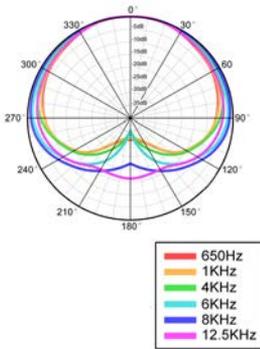
In practice this often leads to a compromise of the overall tonal balance and naturalness of the vocal sound, as keeping the microphone inside the sweet spot for low frequencies places it too close to the vocalist to capture the natural balance of all of the sound-generating parts of the human body.

The SV33 has been engineered with the gentlest possible proximity effect to avoid this sort of compromise. This microphone's low frequency response is almost entirely unaffected by distance, therefore a whole new constellation of use and placement options open up, making it possible to achieve the desired vocal sound.

Polar Response

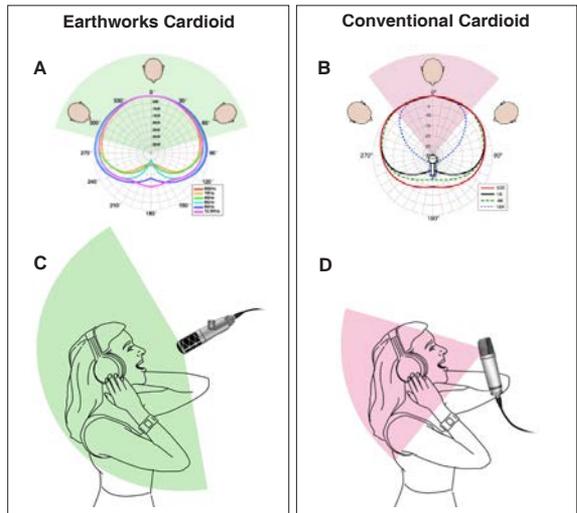
The polar response of the SV33 provides a wide area of pickup that is consistent in frequency and amplitude out to 70 degrees off-axis (Figures 7 & 8). It also provides a large area of uncolored rear rejection beyond 110 degrees off-axis (Figures 10-A & 10-B). Depending on what else is happening in the room, aim the rear of the SV33 toward sources you want to avoid. The SV33's rear rejection of deep bass is also extraordinary.

Figure 7 SV33 Polar Response



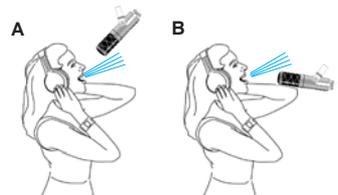
Note: The wider accurate pickup pattern of the SV33 allows you to place 3 singers on a single mic and pick each of them up with the same pristine sound quality.

Figures 8 A-D Accurate Pickup Patterns i.e. Usable Sweetspots



Pop Screens & Plosives

The SV33 has a built-in screen to keep saliva, lipstick or dirt from the capsule; however, when working close to the SV33 an external pop-screen should be used as an additional prevention against plosives. It is also recommended to use the mic placements shown in Figures 9-A & 9-B to help reduce plosives.

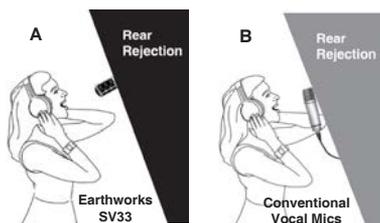


Figures 9-A & 9-B Positioning a Microphone to Prevent Plosives

Cleaning

When cleaning the windscreen or microphone body do not spray cleaning solutions onto the microphone. Instead, use a damp cloth (not too wet) to carefully remove dirt, grease or lipstick.

If more extensive cleaning of the windscreen is required, first remove the windscreen by unscrewing it from the body of the microphone. Gently hand wash with warm water and a small amount of mild dish detergent. After thoroughly rinsing, gently shake any water droplets from the windscreen and air-dry before using.



Figures 10-A & 10-B Microphone Rear Rejection

Do not attempt to remove the pop filter from the windscreen assembly. Do not directly wet or submerge the body of the microphone in any type of fluid.

If Something Seems Wrong

If you experience unexpected behavior from the SV33 such as noise, distortion or a lack of output signal, it is recommended that you start by checking the following:

- Is phantom power switched on? Is it at least 24V, and is the phantom power source capable of supplying at least 10mA of current?
- Are you using high quality microphone cables? Failed solder joints and poor shielding found in low-quality microphone cables can be a source of various types of unwanted noise and distortion, and can prevent the proper functioning of the microphone and phantom power.
- If distortion occurs when miking loud sources like drums, electric guitar or very loud vocalists at close range, verify that the preamp itself isn't clipping. Some preamps will not handle high input levels. Even with the gain control set to minimum they are sensitive enough to overload and clip when loud sources are captured with high output condenser microphones. In such cases an external inline pad (such as the Earthworks LP20) can be used to reduce the microphone's signal level before it enters the preamp.

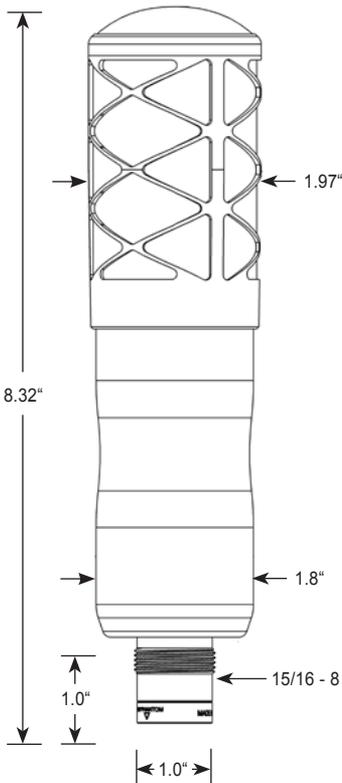
If the problem still persists, please contact earthworks tech support at: returns@earthworksaudio.com

EARTHWORKS WARRANTY

All Earthworks® products carry a limited warranty (parts and labor). Please register your warranty at www.earthworksaudio.com/register If you have any problems with your Earthworks products, please contact our warranty/repair department by email at: returns@earthworksaudio.com or by telephone at (603) 654-2433, ext.119

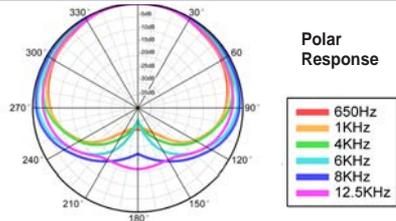


SV33 Vocal Microphone for Recording & Broadcast



SV33 Vocal Microphone

Frequency response	30Hz to 33kHz
Polar Pattern	Cardioid
Sensitivity	10mV/Pa (-40dBV/Pa)
Power requirements	24-48V Phantom @ 10mA
Peak acoustic input	145dB SPL
Signal-to-Noise Ratio	79dB A-weighted
Output	XLR (PIN 2+)
Output Impedance	65Ω bal. (between pins 2&3)
Minimum output load	600Ω, balanced between pins 2&3
Noise	15dB (A-weighted)
Dimensions	8.32 inches (211.32mm) long 1.97 inches (50mm) max dia .860 inches (22mm) min dia
Weight	2.5lb (1.13kg)



Expertly Handmade in U.S.A.

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