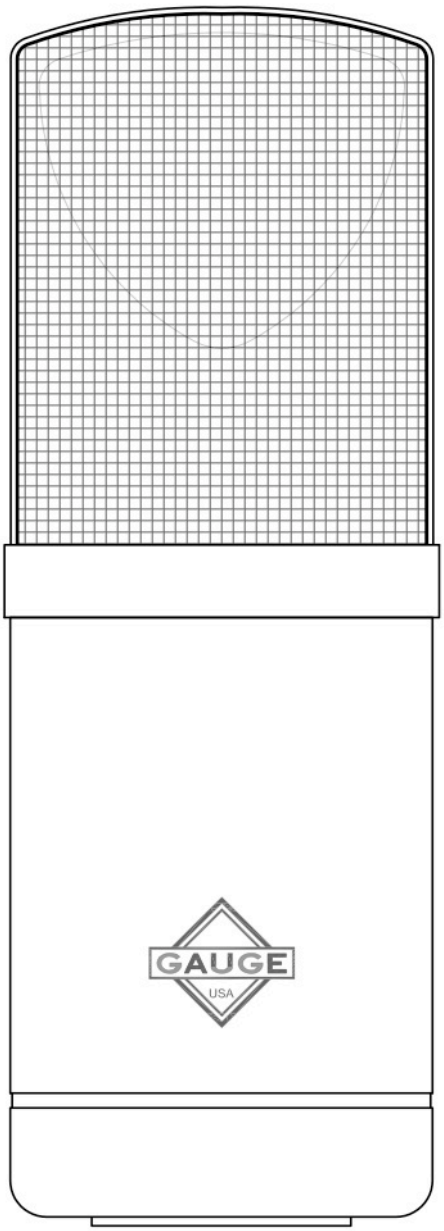
Gauge Precision Instruments

Model ECM-47 Users Manual



Model ECM-47 Tube Microphone

Congratulations on purchasing the Gauge ECM-47 Tube Microphone!

Your ECM-47 was hand built in one of the most advanced microphone manufacturing facilities in the world. It was constructed using the finest quality electronic components to provide you with years of trouble-free operation.

Like all Gauge Microphones, your ECM-47 was designed & tested by a team of talented engineers. Each ECM-47 is then ear-tested and hand picked, assuring that your microphone is one of the very best, most musical sounding microphones available today.

Enjoy!
Chander Bridges & Rob Chiarelli

About Your Microphone

The Gauge ECM-47 microphone is a high quality, variable pattern, studio condenser microphone utilizing vacuum tube electronics and a gold sputtered, ultra-light diaphragm in an advanced capsule design.

Each Gauge ECM-47 comes complete with a high quality pop-screen and a precision-made, flexible shock mount designed to minimize the effect of floor vibrations reaching the microphone through the microphone stand.

The Gauge ECM-47 also comes with its own proprietary power supply and cable and does not require a 48v phantom power.

Specifications and other important information on Gauge Microphones can be found at: www.gauge-usa.com

Proper Connection of Cables & Power Supply

1. Before plugging in or switching on the power supply, ensure that the voltage selector switch is set correctly for the proper voltage in your area.
    a. The United States & Canada is 110v
    b. Europe is typically 220v
    c. Please check the local supply voltage and use a voltage converter as necessary.
2. Make certain that the power switch is “off” on the power supply
3. Connect the AC cable to the ECM-47 power supply and then to your grounded wall outlet.
4. Connect the ECM-47 shock mount to the Microphone

5. Insert the FEMALE end of the 5-pin cable into the ECM-47
6. Insert the MALE end of 5-pin cable into the ECM-47 Power Supply
7. Mute the volume on your preamp, console and/or speakers.
8. Connect the 3-pin audio cable (XLR-MALE) from power supply to the recording console or microphone pre-amp.
9. Turn on the ECM-47 power supply.
10. Allow at least 5-minutes for the ECM-47 to warm up. For optimum performance, allow your ECM-47 microphone to warm up for at least 15-minutes.

Using Your Microphone

When recording vocals at close range, place the provided pop screen midway between the singer and the microphone. This will reduce or eliminate loud puffs of air from reaching the microphone diaphragm. A pop screen should not be necessary when recording voices or musical instruments that are more than a foot (12") away from the ECM-47.

For tips and tricks on recording the human voice and musical instruments, visit the Gauge website at: www.gauge-usa.com

Pickup Patterns

The Gauge ECM-47 pickup pattern control switch is located on the front of the power supply. The directional pattern of the ECM-47 is fully adjustable through 9 pickup patterns; from Omni-directional to Cardioid to Figure-of -Eight.

NOTE: Whenever the polar pattern is changed, please allow at least 3-minutes for the change to take full effect.

Cardioid Pickup Pattern

The Cardioid (or Directional pattern) simply means the microphone is most sensitive in one particular direction and sound is picked up primarilly from the front.

The Cardioid pattern is popular for general-purpose recording. The microphone can be directed at the desired sound source while offering a measure of rejection to sounds approaching the microphone from the rear, and to a lesser extent, the sides.

Where several musicians are playing together, this pattern reduces the amount of crosstalk between microphones. The Cardioid pickup pattern will also minimize room sound or ambience and will provide a more present sound.

NOTE: Cardioid microphones are a type of "pressure-gradient microphone" as their output signal depends on the differences in air pressure between the front and rear of the capsule.

All pressure gradient microphones exhibit some degree of proximity effect. This means that there is a rise in their bass response when positioned very close to the sound source. This is easily controlled by adjusting the distance between the microphone and sound source.

Hyper-Cardioid Pickup Pattern

The Hyper-Cardioid pattern is an exaggerated version of the Cardioid pattern.

It is a narrower pickup pattern than the normal Cardioid response and it is very directional, greatly reducing sound from the sides and rear.

Omni-Directional Pickup Pattern

The Omni-directional pattern means the microphone will capture sound equally from all directions. The Omni-directional pattern will not exhibit the proximity bass boost effect inherent in Cardioid or Hyper-Cardioid patterns.

Omni-directional microphones have a very natural sound. This pattern is often used where there is a need to capture the sound of the room acoustics or where there are several musicians or singers performing together. Omni-directional microphones are often used for stereo recording of ensembles or when the sound is coming from many directions or if the sound source is moving.

Figure-of-8 (Bi-Directional) Pickup Pattern

The Figure-of-Eight pattern means the microphone will capture sound equally from both the front and rear of the microphone, but not from the sides.

Sound arriving from the sides will result in equal air pressure on both sides of the diaphragm and consequently there will be no electrical output. Conversely, on-axis sounds produce the maximum pressure differential and hence the maximum output.

Figure-of-eight microphones are often used in specialist stereo recording applications and where a high degree of rejection of off-axis sounds would be useful.

Care and Maintenance

The ECM-47 contains fragile parts, including the tube, which may be easily damaged by excessive shocks, such as dropping it onto a hard surface.

Care should always be taken with all microphones to avoid damp conditions, humidity, excessive dust and smoke.

Microphones brought into a warm studio from a cold vehicle, for example, may have condensation on the diaphragm and circuitry, which will compromise the performance of the microphone until it has completely dried out.

Your Gauge ECM-47 Microphone may be cleaned using a clean cloth. Solvents, thinners or aerosols should never be used as this may impair operation.

The ECM-47 cables and connectors should be checked regularly for damage. If the cable connecting a tube microphone to its power supply is damaged, contact Gauge Precision Instruments or your local service agency for a replacement.

Under no circumstances should a different cable be used as this could damage the microphone circuitry and/or power supply.

CAUTION: Never run your ECM-47 power supply with the ground disconnected as this increases the risk of electric shock.

CAUTION: Shock Hazard: Deadly High Voltages Inside.
Do not open the microphone case or the power supply case. There are no user serviceable parts inside.

CAUTION: Do not "hot swap" the microphone or power supply. If you need to remove a cable or change a microphone, be sure to turn off the power supply before connecting or disconnecting any cables.

CAUTION: Do not interchange your ECM-47 microphones and power supplies. Each power supply has been optimized for each microphone.

NOTE: All Gauge Microphones are manufactured to the highest modern standards. There are no user serviceable parts inside. Do not attempt to service a microphone or power supply yourself. This will void the warranty and may cause serious damage or injury.

Technical

The ECM-47's audio output is a standard male XLR 3-pin. A positive excitation of the diaphragm at the front of the microphone will result in a positive voltage at the output XLR pin 2. The audio output of the ECM-47 is transformer balanced.

In the unlikely event that you experience any problems with your microphone, please contact Gauge Precision Instruments at support@gauge-usa.com

For more information please visit www.gauge-usa.com