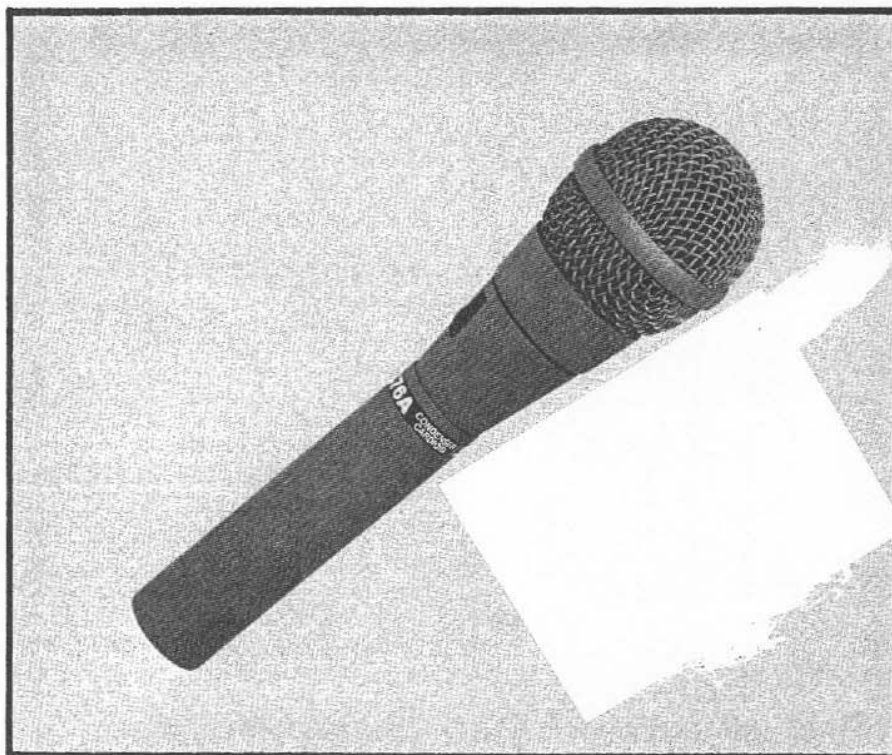




Electro-Voice®
a gulton company

Model PL76A Condenser Cardioid Vocal Microphone

SPECIFICATIONS

Generating Element:

Electret condenser

Frequency Response (see Figure 3):

50 – 20,000 Hz

Polar Pattern (see Figure 4):

Cardioid

Impedance:

150 ohms balanced

Output Level:

–50 dB with
phantom power or 4.5-volt battery
–54 dB
1.5-volt battery
(0 dB = 1 mW/10 dynes/cm²)

EIA Sensitivity:

–144 dB with
phantom power or 4.5-volt battery
–148 dB with
1.5-volt battery

Dynamic Range:

100 dB with
phantom power or 4.5-volt battery
94 dB with
1.5-volt battery

Equivalent Noise Level:

Less than 30 dB
(0 dB = .0002 dynes/cm²)
A weighted

Power Supply:

4.5 or 1.5-volt internal battery
(not included) or 24-to-48-volt
phantom supply with 506A
phantom power adapter (not
included)

Battery Selection Guide, 4.5-Volt Battery,

Carbon Zinc:

Eveready No. 333

Alkaline:

Mallory PX-21
Eveready 523
Burgess AL-523
Panasonic PX-21

*Mercury:

Mallory TR-133
Eveready E-133
- Burgess H-133
Panasonic H3P

1.5-Volt Battery:

Any AA size cell

Current Drain:

1 mA from 1.5-volt battery
3-5 mA from 4.5-volt battery or
phantom power

Battery Life,

4.5-Volt Battery,

Carbon Zinc:

150 hours

Alkaline:

175 hours

Mercury:

350 hours

1.5-Volt Battery:

In excess of 1000 hours for any
type AA size cell

Switch:

On-off (battery and audio)

Pop Filter:

Built-in Acoustifoam™ filter

Case Material:

Diecast zinc & aluminum

Dimensions:

191 mm long (7.5")
25.4 mm (1.0") shank diameter
50.8 mm (2.0") maximum diameter

Weight:

343 grams (12 oz)
(with battery but not
including cable)

Finish:

Non-reflecting gray

Accessories Furnished:

301 stand adapter
Zippered vinyl carrying case

Optional Accessories

376 windscreen
380 10 dB attenuator
502C matching transformer,
Lo to Hi-Z inline
502CP matching transformer,
Lo to Hi-Z with plug
506A phantom power adapter
541 25' professional cable with
A3F type connector at mike end
542 25' professional cable with A3F
& A3M type connectors
543 25' professional cable with
switch connector at mike end
544 50' professional cable with A3F
& A3M type connectors

*Do not use below 4.5° C (40° F)

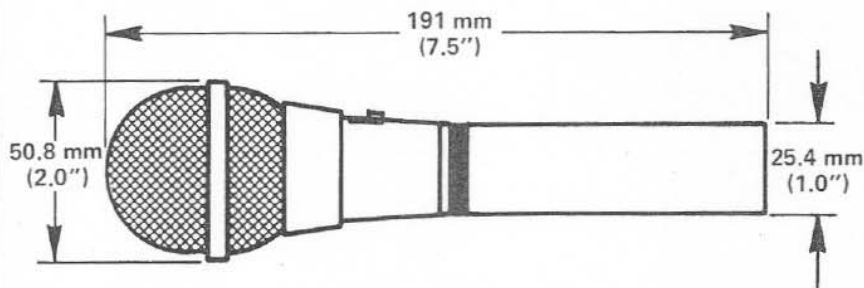


FIGURE 1 - Dimensions

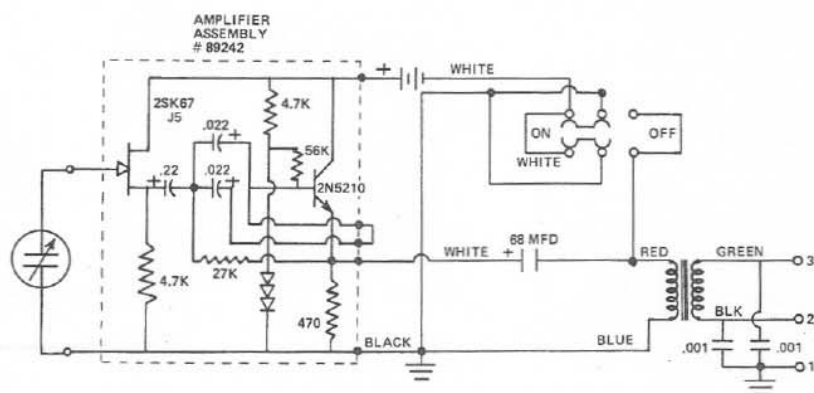


FIGURE 2 - Wiring Diagram

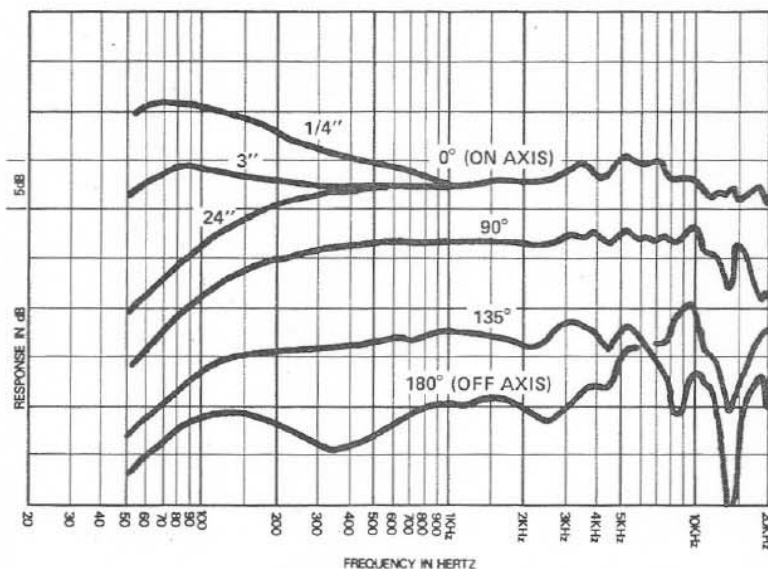


FIGURE 3 - Frequency Response

DESCRIPTION & APPLICATIONS

The Electro-Voice PL76A is a Single-D electret condenser cardioid microphone designed for the professional vocalist. The unusually extended, shaped high-frequency response provides a natural, transparent sound quality not available in the usual vocal microphones (see Figure 3). The Single-D design provides the up-close bass boost (proximity effect) preferred by many entertainers. In addition, the PL76A features a two-position bass response switch which effectively tailors the sound to fit the voice. Unusually uniform directional characteristics over the entire frequency range (see Figures 3 and 4) provide high feedback resistance when working close to sound reinforcement speakers and monitors. A built-in Acoustifoam™ blast filter enables close talking or singing without worry of "P-popping" or other excessive breath and sibilant noise. The very low mass of the generating element acts as an effective shock mount which keeps handling noise to a minimum. The rugged construction of the PL76A makes it unique among other condenser microphones. The case is constructed of rugged diecast zinc and the battery compartment sleeve is made of aluminum. The Memraflex grille screen resists deformation. The PL76A is battery powered but may be adapted for phantom powering (see powering the PL76A).

POWERING THE PL76A

Unlike normal condenser microphones, the electret condenser does not need a polarizing voltage because a permanent charge is captured in the diaphragm material. However, a small voltage with low current drain is necessary to power the FET impedance converter which must be used to lower the extremely high impedance of the electret head.

Standard Battery Powering

The PL76A is powered by an internal battery. To prolong battery life, the PL76A's on/off switch should be in the "off" position when the microphone is not in use. Usually, as a battery approaches the end of its service life, a gradual but noticeable reduction in microphone output level occurs, allowing replacement of the battery without a program interruption.

Access to the battery compartment is gained by unscrewing and pulling away the sleeve shown in Figure 5, exposing the battery clips. A 4.5- or 1.5-volt battery may be inserted, being sure to follow the polarization (plus and minus) label. Note that the battery lies on top

of the black ribbon, which then serves as an aid in the later removal of the discharged battery. A 4.5-volt battery should be used for maximum output level and dynamic range. The more easily obtainable 1.5-volt AA-size battery will produce a slightly lower dynamic range and output level (see "Specifications" section). Specific batteries and battery life figures are also shown in the "Specifications" section. In general, alkaline and mercury batteries are recommended because of much greater shelf life and less likelihood of leakage. However, with regular usage, a fresh carbon-zinc battery will give nearly as long a service life due to the low current drain of the PL76A.

Adapting For Phantom Power

The optional 506A phantom power adapter may be used to replace the battery and permit operation of the PL76A from remote, phantom-type power supplies (like the EV-AC24M) delivering 24 to 48 volts DC. Current drain is approximately 4 mA per microphone. Note that battery operation will no longer be possible after the 506A has been installed.

INPUT REQUIREMENTS AND CONNECTIONS

The PL76A's 150-ohm balanced output is appropriate for the typical balanced input designed for low-impedance microphones. Usually, such inputs require a Switchcraft A3M-type three-pin audio connector, as shown in Figure 6.

The PL76A's output level is 5 to 10 dB higher than the typical low-impedance dynamic microphone. This higher-than-usual output level may overload some low-impedance inputs when the microphone is driven with very high sound pressure levels. Evidence of such overload is a rough, raspy sound quality — caused by clipping the first gain stage — that is not affected by the mixer's volume control. The optional 380 10 dB in-line attenuator reduces microphone output just ahead of the mixer input, thus removing the cause of the input overload.

The higher-than-usual output level of the PL76A also makes it appropriate for most medium-impedance and some high-impedance inputs, without the use of a matching transformer. Most medium- and high-impedance inputs are unbalanced, requiring the 1/4" phone plug connector shown in Figure 6.

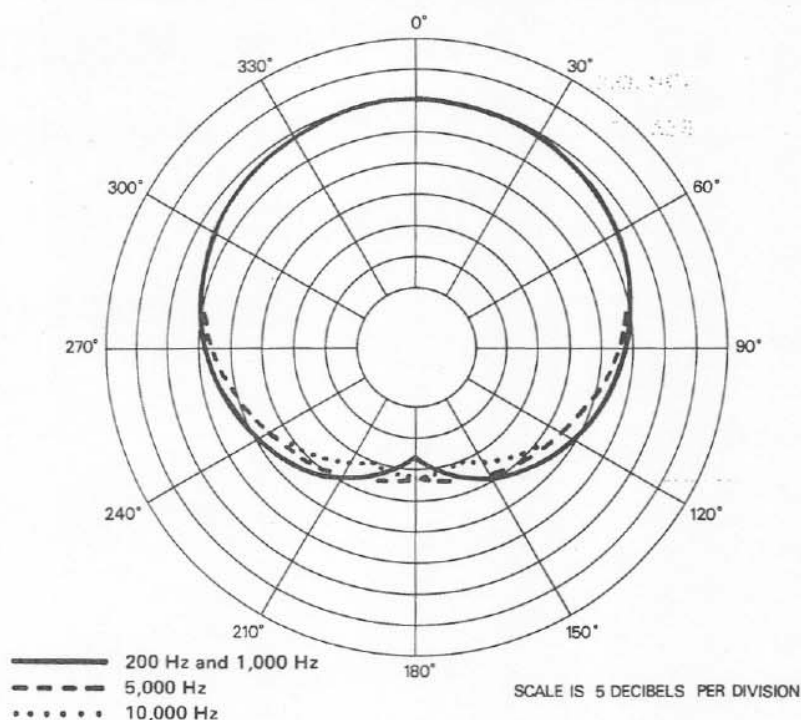


FIGURE 4 — Polar Response

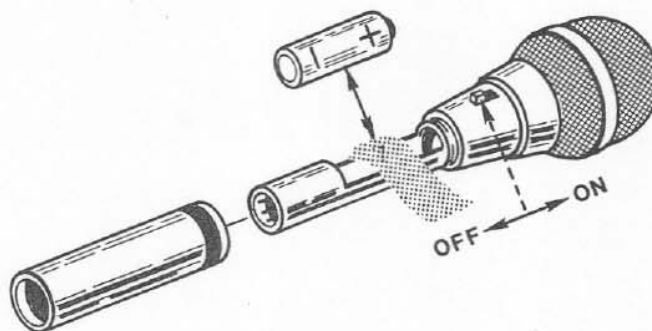


FIGURE 5 — Battery Replacement

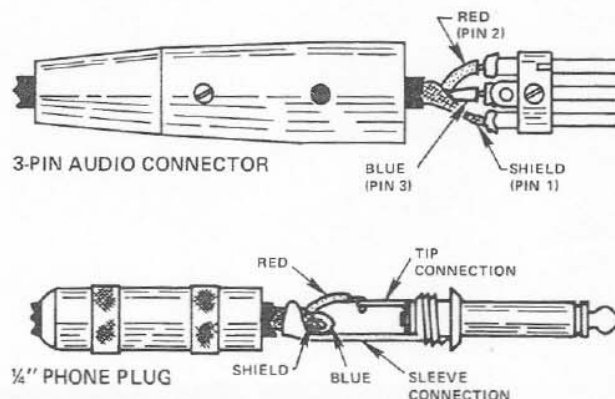


FIGURE 6 — 3-Pin Connector & 1/4" Phone Plug Wiring Connections

USING THE VARIABLE LOW-FREQUENCY RESPONSE (PROXIMITY EFFECT)

The PL76A's low-frequency response varies with the distance from the sound source to the microphone as shown in Figure 3. Maximum bass response is produced in close-up use with the microphone 1/4-inch from the sound source. Minimum bass response is experienced at distances greater than 24 inches.

Useful special effects can be created by an imaginative application of the PL76A's proximity effect.

1. By working closer to the microphone, the human voice will sound more robust, although intelligibility may be adversely affected.
2. Working close to the PL76A provides a reduced tendency to PA system feedback, over and above that provided by the cardioid directional characteristic and close working-distance alone. When close-talked, the substantial bass boost provides an increase in overall microphone output level. The mixer gain may be proportionately reduced, resulting in a reduction of the system's sensitivity to feedback caused by sound entering the microphone from the distant loudspeakers.

3. For musical instrument pickup, the variable bass response can be utilized to achieve a "clean" bass pickup at a distance of 24 inches or more. By moving the PL76A to a few inches from the instrument, bass will be increased.

Caution note: with the sound source (lips) closer than 2 inches, bass response is increased dramatically (as shown in Figure 3). If too much signal is generated at the microphone, overloading in the amplifier input circuits may occur, causing severe distortion.

MAINTENANCE INSTRUCTIONS

You have purchased one of the finest electret condenser microphones available. A little care will allow you continued use of this precision instrument for many years. Your electret condenser microphone should not be left in the open sun or other hot environments where temperatures may approach or exceed 54.4° C (130° F) for any period of time. Following this suggestion will prolong the life of the generating element.

If you feel your unit is malfunctioning, have it examined and repaired only by an Electro-Voice authorized repair service station.

WARRANTY (Limited) —

All Electro-Voice PL Microphones are guaranteed for one year from date of original purchase against defects in workmanship and materials. If such malfunction occurs, microphone will be repaired or replaced (at our option) without charge for materials or labor if delivered prepaid to the proper Electro-Voice service facility. Unit will be returned prepaid. Warranty does not cover finish or malfunction due to abuse or operation at other than specified conditions. Repair by other than Electro-Voice or its authorized service agencies will void this guarantee.

For repair information and service locations, please write: Service Dept., Electro-Voice, Inc., 600 Cecil Street, Buchanan, Michigan 49107 (Phone: 616/695-6831) or Service Department, Electro-Voice West, 8234 Doe Avenue, Visalia, CA 93277 (209/625-1330,-1).

Electro-Voice also maintains complete facilities for non-warranty service of E-V products.

Specifications subject to change without notice.