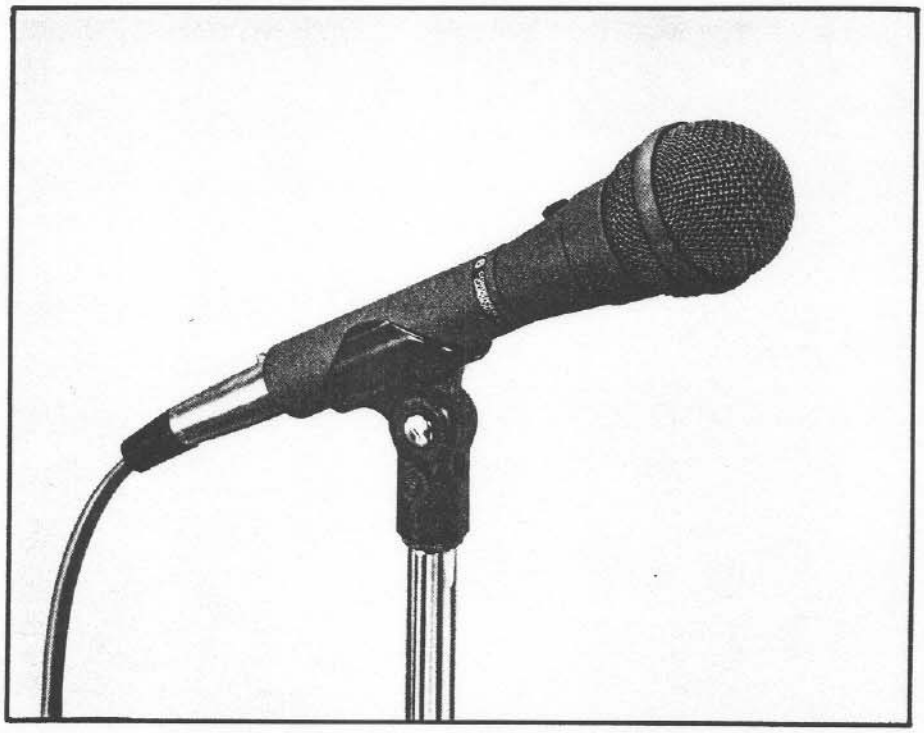
Electro-Voice®
a gulton company



Model 1776
Cardioid Electret Condenser Microphone

SPECIFICATIONS

Generating Element:
Electret condenser

Frequency Response:
50-18,000 Hz

Polar Pattern:
Cardioid

Impedance:
150 ohms balanced

Output Level:
−50 dB
(0 dB = 1 mW/10 dynes/cm²)

EIA Sensitivity:
−144 dB

Dynamic Range:
100 dB

Equivalent Noise Level:
30 dB (0 dB = .0002 dynes/cm²
A weighted

Switch:
On/Off

Power Supply:
4.5 Volt Internal Battery
(Not included)
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

* Do not use below 4.5°C (40°F).

Current Drain:
3.5 mA

Battery Life,
Carbon Zinc:
150 hours
Alkaline:
175 hours
Mercury:
350 hours

Pop Filter:
Built-in-Acoustifoam™ Filter

Cable,
1776:
4.6 m (15 feet),
two-conductor, shielded, brown
rubber-jacketed, with
Switchcraft A3F connector
1776P:
7.6 m (25 feet),
two-conductor, shielded, brown
rubber-jacketed, with
Switchcraft A3F connector
at the microphone end and Switchcraft A3M at equipment end.

Case Material:
Diecast zinc & aluminum

Dimensions:
190.5 mm long (7½")
50 mm (1.97") maximum diameter

Weight:
343 grams, (12 ozs.)
(With battery but not including cable)

Finish:
Non-reflecting gray

Accessories Furnished:
301 Stand adapter

Optional Accessories:
456 Carrying case
380 Attenuator
351 Windscreen

DESCRIPTION & APPLICATIONS

The Electro-Voice 1776 is a single-D electret condenser cardioid microphone. The Model 1776 represents the latest state-of-the-art design in electret technology. The rugged construction of the Model 1776 makes it unique among other condenser microphones. Frequency response, sensitivity and polar response uniformity are all tailored to the needs of the discriminating professional user. The highest quality results can be achieved by using this electret condenser microphone in professional recording, serious home recording, and high quality sound reinforcement. The Model 1776 is especially suited for the professional performer who demands the finest.

The 1776 case is constructed of rugged diecast zinc and the battery compartment sleeve is made of aluminum. A conveniently located on/off switch is provided. Slow activation of this switch eliminates the usual popping associated with this type of microphone. The 1776 features a built-in blast filter which enables close talking or singing without worry of "P-popping" or other excessive breath and sibilant noises. The very low mass of the generating element acts as an effective shock mount which keeps handling noise and other mechanically-transmitted noises to a minimum. The output level of the 1776 is sufficiently high to work into most medium impedance inputs as well as low impedance inputs.

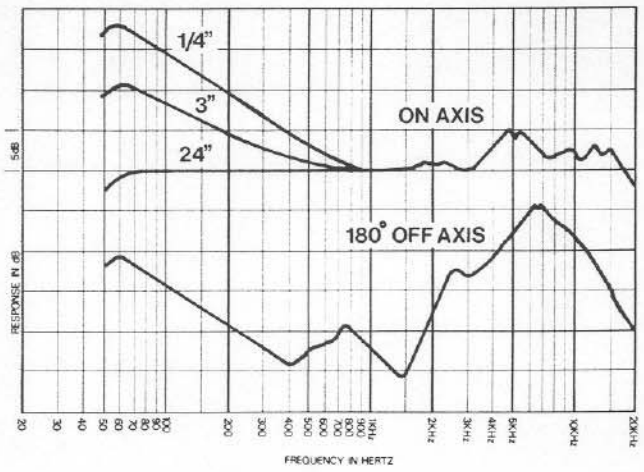


FIGURE 2 – Frequency Response

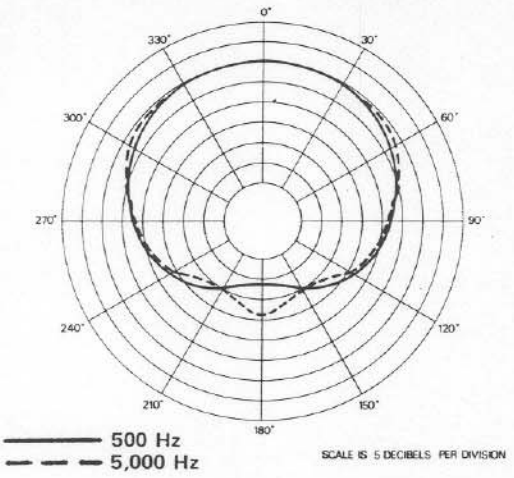


FIGURE 3 – Polar Response

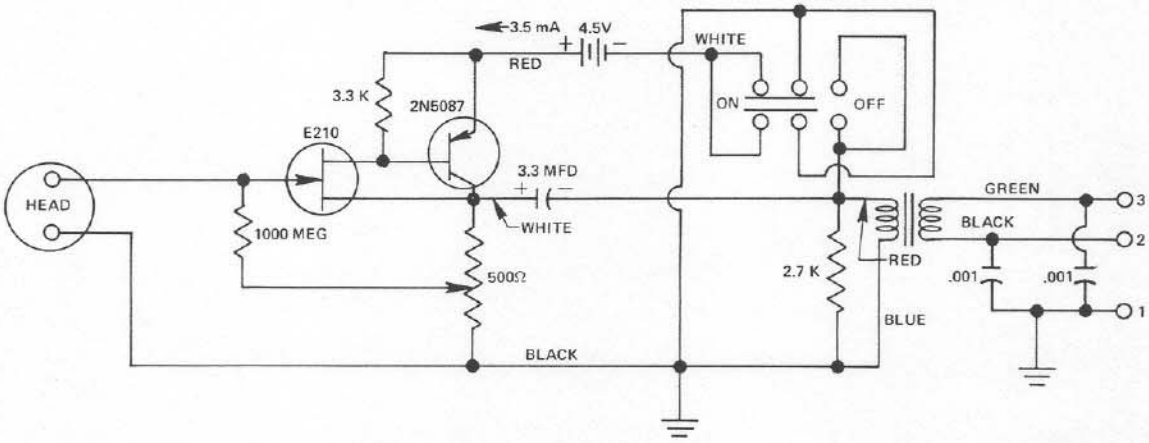


FIGURE 4 – Schematic

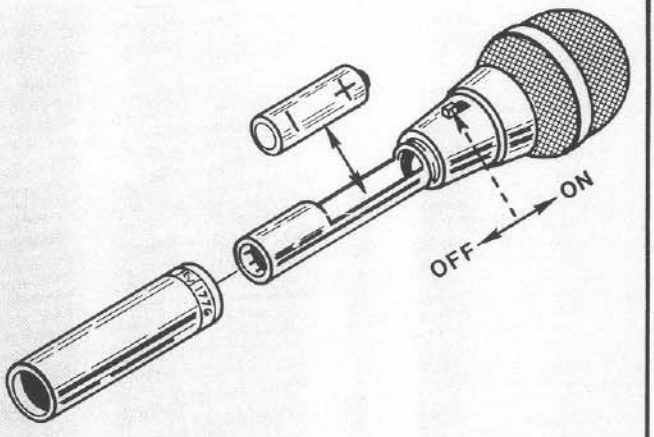


FIGURE 5 – Battery Replacement

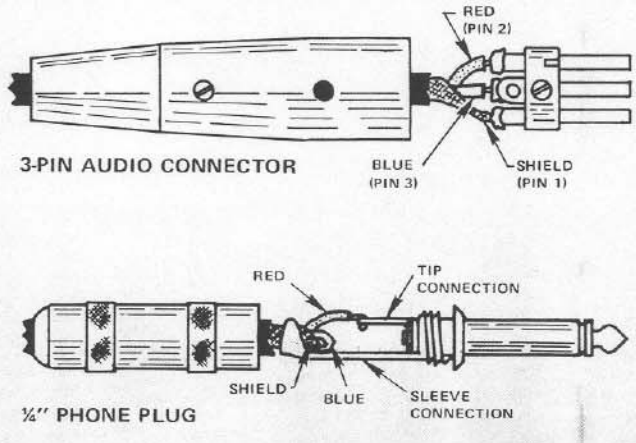


FIGURE 6 – 3-Pin Connector & ¼" Phone Plug Wiring Connections

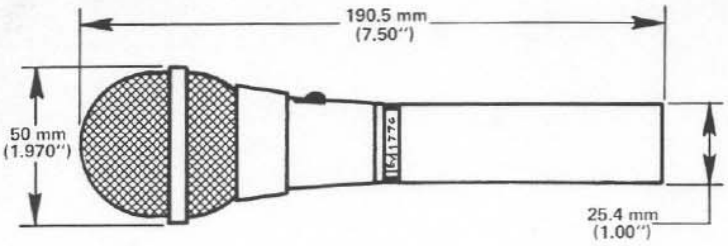


FIGURE 1 – Dimensions

The 1776 uses the professional standard three pin type connector. In addition, the 1776P has a three pin type connector at the equipment end of the cable. The 1776P is intended to operate into Medium-Z or Lo-Z inputs.

Using The Variable Low-Frequency Response:

The 1776 low-frequency response varies with the distance from the sound to the microphone as shown in the response curve (Fig. 2). Maximum bass response is produced in close-up use with the microphone ¼" from the sound source (Fig. 2/A). Minimum bass response is experienced at distances greater than 24" (Fig.2/C).

Useful special effects can be created by an imaginative application of the variable low-frequency response:

1. By working closer to the microphone, the human voice will sound more robust, although intelligibility may be adversely affected.

2. Feedback in a public address system is sustained by reflection of sound into the microphone. For all microphones, as the artist moves closer, the level of his voice (at the microphone) increases and the microphone's signal to the amplifier is increased. For a constant volume of sound from the system, the amplifier gain setting must be proportionately reduced. This results in a reduction of the system's sensitivity to reflected sound, hence a reduction of the tendency to feedback.

   The variable low-frequency response of the 1776 provides a further feedback reducing advantage in close talking applications. At ¼", low-frequency response is greatly enhanced, while response to distant sound (as from sound system loudspeakers) is unaffected. The result is a reduced tendency to feedback, over and above that provided by the cardioid directional characteristic alone.

   In short, system sensitivity reduction because of close working, added to the advantage resulting from the bass boosting low-frequency characteristic of the 1776, makes this instrument an exceptionally effective tool for stage and nightclub use.

3. For musical pickup, the variable bass response can be utilized to achieve "clean" bass pickup at distance of 24" or more. By moving the 1776 to a few inches from the instrument, bass will be increased.

   Caution notes: With the sound source (lips) closer than 2", bass response is increased dramatically (as shown in Fig. 2/A/B). 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.

POWERING THE 1776

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. You may gain access to the battery compartment by unscrewing and pulling away the rear sleeve of the microphone, exposing the battery clips (see Figure 5). A 4½-volt battery should be inserted, being sure to follow the polarization label. The very small current drain of 3.5 mA ensures many hours of use between battery changes. (See Battery and Battery Life information on front of data sheet).

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-type battery will give nearly as long a service life due to the low current drain.

A noticeable reduction in output gradually occurs well before complete failure usually, allowing replacement of the battery without program interruption.

ARCHITECTS' AND ENGINEERS' SPECIFICATIONS

The microphone shall be a Single–D cardioid electret condenser type with frequency response of 50 to 18,000 Hz.

The microphone shall have an 150-ohm balanced output, with an output level of –50 dB (0 dB = 1 mW/10 dynes/cm^2), and EIA sensitivity rating of –144 dB. The microphone shall have an electret condenser generating element whose output shall not be appreciably affected by temperature extremes from –17.8° C (0° F) to 54.4° C (130° F) and/or by humidity extremes. An on/off switch shall be provided. A 4.6 m (15 ft), two-conductor shielded, brown, rubber-jacketed cable with Switchcraft A3F connector installed at the microphone end shall be provided.

The case shall be zinc diecast with an aluminum battery compartment cover. The finish will be non-reflecting gray paint. Dimensions shall be 190.5 mm (7½") long, not including cable connector, with shank diameter of 25.4 mm (1"). Net weight (including battery, but less cable) shall be 343 grams (12 ozs). The Electro-Voice Model 301 stand adapter shall be furnished.

The Electro-Voice Model 1776 is specified.

WARRANTY (Limited) –
Electro-Voice General Purpose Microphones are guaranteed without time limit against malfunction in the acoustic system due to defects in workmanship and materials. (Any active electronics incorporated in a microphone is guaranteed for three years from date of original purchase against such malfunction.) 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, appearance items, cables, cable connectors, or switches and does not cover 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 Department, Electro-Voice, Inc., 600 Cecil Street, Buchanan, Michigan 49107 (Phone 616/695-6831) or 7473 Avenue 304, Visalia, CA 93277 (209/625-1330,-1).

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

Part Number 53314 – 727

a Gulton COMPANY **ELECTRO-VOICE, Inc., 600 CECIL ST., BUCHANAN, MICH. 49107**

MANUFACTURING PLANTS AT ■ BUCHANAN, MICH. ■ NEWPORT, TENN. ■ SEVIERVILLE, TENN. ■ GANANOQUE, ONT. ■ LITHO IN U.S.A.