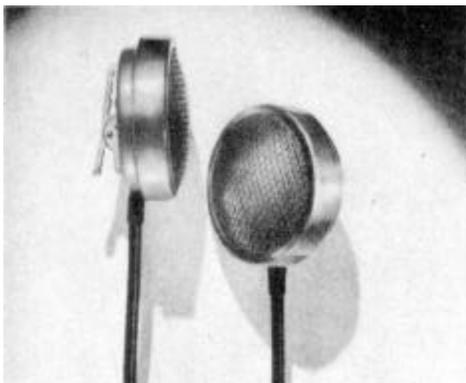


DATE: February, 1942

SUBJECT: Model 76B Lapel Crystal Microphone

Model 76B Lapel Crystal Microphone



GENERAL: Model 76B is a pressure-actuated diaphragm-type crystal microphone especially designed for high quality reproduction of speech when attached to the lapel. The crystal used is a grafoil (high capacity) bimorph unit, moisture-sealed to withstand adverse climatic conditions. The microphone is compact and light, weighing only 1-1/2 oz. It is provided with a 25 foot shielded rubber-jacketed cable.

APPLICATIONS: The Model 76B is designed for public address, lecturing in large halls, broadcasting from portable transmitters and all general uses where clear, intelligible reproduction of speech is of primary importance, and where the user must be able to move freely at all times.

INSTALLATION: Model 76B is supplied with an alligator clip especially designed to fasten firmly to the lapel or other parts of the wearing apparel. A 25 foot cable is furnished, which permits freedom of motion; the cable length may be increased if necessary. (See Connections).

CONNECTIONS: The inner conductor of the cable should be connected to the grid of the first tube in the amplifier across a load resistance of 1/2 to 5 megohms. Input resistance of approximately 1/2 megohms should be used to decrease the low frequency response of the Microphone, for improvement in speech transmission efficiency; but higher values are recommended if good low frequency response is desired. The shield should be connected to the chassis.

Added lengths or connecting cable will be accompanied by a decrease in output level as given in the table below. There is no frequency discrimination introduced by the cable, regardless of length.

Total cable length	Output Level* at Cable Terminals
25 ft. (Standard)	-61.0 db
50 ft.	-65.0 db
75 ft.	-66.5 db
100 ft.	-68.0 db
150 ft.	-71.5 db
200 ft.	-73.5 db

*(Expressed in db below 1 volt per bar.)

Most modern high-gain amplifiers have sufficient margin or gain to make up for the decrease in output levels shown in the table. If the amplifier does not have the necessary gain a preamplifier at the microphone or near the main amplifier, is suggested. Preamplifiers with low impedance output are recommended if the main amplifier system has low impedance transformer or mixed input.

Added cable should be of high quality and low capacity. The inner leads should be soldered and insulated with a good grade of rubber tape. Metal braid sleeve or a serve of fine wire should be soldered between the shields of the cable to complete the shielding. Longer lengths of cables with standard plug attached may be purchased at small cost, and may be used interchangeably with shorter cables.

OPERATION: No polarizing voltage is required for crystal microphones.

Crystal microphones may be seriously damaged if accidentally connected to loud speaker or power supply outlets carrying high voltage. Check your connections carefully.

Crystal microphones should not be used or kept in places where the temperature exceeds 125°F. They should not be exposed to rays of the sun in very hot weather for any considerable length of time - or left in closed automobiles parked in the sun during hot weather, as the temperature inside the automobile may easily build up to over 125° and permanently damage the crystal.

When used near a radio transmitter, use the minimum length of cable consistent with placement requirements. Careful grounding of the cable shield is advisable.

ACOUSTIC CONSIDERATION: The frequency response of the 76B Microphone extends from 30 to 6000 cycles per second. The high frequency response is accentuated for maximum intelligibility, and is smooth and free from undesirable peaks. The accentuation or high frequency response is very useful because of the fact that sounds reach the Microphone at an angle which tends to decrease transmission of high frequencies. The low frequency response is flat, but maybe attenuated if necessary as indicated under connections.

SPECIFICATIONS

VOLTAGE SENSITIVITY : 8.9 Millivolts for a 10 bar speech signal at the end or a 25-foot-cable. This is equivalent to 61 db below 1 volt per dyne per sq.cm.

INTERNAL OUTPUT IMPEDANCE: Equivalent to a 1,500 micro-micro-farad condenser.

RECOMMENDED LOAD IMPEDANCE: 1 to 5 megohms.

Model	76B
Diameter	1-29/32"
Thickness	3/4"
Thickness, including clip	1-3/16"
Finish	Iridescent Gray Chrome
Net Weight	
Microphone head only	
Complete with cable	1-1/2 oz.
Shipping Weight	1 lb.
Code Word (25' cable)	RULOP

GUARANTEE: Each microphone is guaranteed to be free from electrical and mechanical defects for a period of one year from date or shipment from the factory, provided all instructions are complied with fully. In case of damage, return the microphone to the factory for repairs. Our guarantee is voided if the microphone case is opened.

LICENSE NOTE: Shure patents pending. Licensed under patents of the Brush Development Company.