

**SHURE**

MICROPHONES AND ELECTRONIC COMPONENTS

® AREA CODE 312/328-9000 • CABLE: SHUREMICRO

**DATA
SHEET****MODEL CB45***Long Ranger***CONTROLLED MAGNETIC® NOISE-CANCELING CITIZENS BAND MICROPHONE****GENERAL**

The Shure Model CB45 LONG RANGER CONTROLLED MAGNETIC noise-canceling microphone is designed especially for use with Citizens Band transceivers, either mobile or base station. The microphone provides clear, crisp, natural voice response in even the noisiest surroundings. A small, rugged, hand-held CONTROLLED MAGNETIC unit, this dual-impedance microphone can be used to replace ceramic or dynamic microphones supplied as original equipment.

The Model CB45 noise-canceling microphone represents a significant improvement over most microphones with anti-noise features. Noise cancellation in Model CB45 is provided through the combination of highly directional operation and superior discrimination against noise from distant sources over an unusually wide frequency range. The CB45 is particularly suited for mobile use where wind, traffic, or engine noise may otherwise interfere with voice transmission.

With greater clarity and improved reliability and durability, Model CB45 also offers easy impedance selection at the end of the cable. The microphone is suitable for connection to either high-impedance or low-impedance (ceramic or dynamic) inputs.

The microphone fits naturally and comfortably in the hand and is not affected by heat or humidity. The exclusive ARMO-DUR® case is immune to oil, grease, fumes, salt spray, sun, rust and corrosion—and is outstanding in its ability to resist mechanical shocks and vibration. The "Million-Cycle" leaf-type switch is designed to withstand rigorous operating conditions and constant use.

Microphone Features:

- Highly intelligible voice response
- Extremely effective noise cancellation
- Replaces either ceramic or dynamic original equipment microphones
- Dual impedance—matches either high- or low-impedance inputs
- Sturdy and reliable CONTROLLED MAGNETIC cartridge
- Unparalleled ruggedness and durability
- Tough ARMO-DUR case
- Mounting bracket supplied—fits hang-up button on back of microphone

NOISE CANCELLATION

The important characteristics contributing to noise cancellation and clear speech transmission in the Model CB45 are shaped frequency response, directionality, and distance discrimination.

Shaped Frequency Response: The acoustical elements are arranged to optimize performance in the critical voice frequency range of 200 to 5,000 Hz. The result is the reduction in pickup of sounds outside the desired frequency range and proper control of those sounds within the desired range.

Directionality: Through its inherent directional properties, Model CB45 rejects sounds that do not originate from the front of the microphone. This reduces pickup of off-axis sounds extraneous to the user's voice.

Distance Discrimination: The Model CB45 discriminates against sounds arriving from a distance in favor of sounds from a near source. The microphone operates on the pressure gradient principle. Two sound entry ports spaced a small distance apart produce, by means of phase cancellation, reduction of sensitivity to all distant sounds.

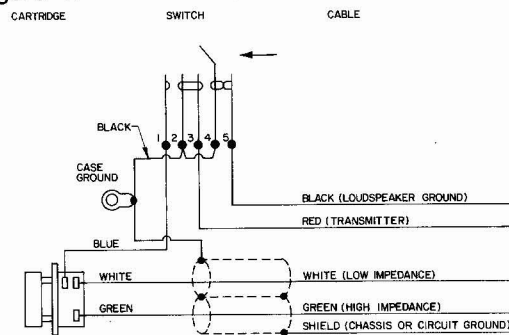
OPERATION

In order to obtain the best noise-canceling performance with Model CB45, "close-talking" is required. The lips must be as close as possible to the microphone grille (directly facing the grille and pressed against the rubber lip guard). For greatest discrimination between voice sounds and background noise, do not hold the microphone more than 25 mm (1 in.) from the mouth.

No special precautions beyond ordinary care are necessary in operating the Model CB45 microphone. It will function very satisfactorily under most conditions of humidity and temperature. Severe mechanical shocks, such as dropping the microphone, should be avoided.

CONNECTIONS

The internal connections of Model CB45 are shown in Figure 1.

**INTERNAL CONNECTIONS****FIGURE 1**

Refer to the Shure CB Wiring Guide enclosed with the microphone for detailed instructions for connecting the CB45 to your transceiver. If your unit is not listed in the Guide, contact your dealer or Shure Brothers Incorporated for information. This microphone is not designed for use with transceivers requiring five-conductor shielded cable.

The general wiring procedure for transceiver connections is as follows.

Relay or Switching Circuit:

GROUNDING SWITCHING

Most transceivers employ a grounded circuit to switch from the receive to the transmit position. To connect the microphone to such a circuit, proceed as follows.

1. Connect the RED lead to the terminal used to complete the transmitter circuit.
2. Connect the BLACK lead to the terminal used to complete the receiver circuit. This will usually be a ground return from the loudspeaker. If a microphone switching contact is not required for the loudspeaker ground, insulate (wrap with tape) the BLACK cable lead.
3. Connect the shield to chassis or circuit ground of the transceiver (see Guide)

ISOLATED SWITCHING

In some transceivers, an isolated circuit is required to switch power supply voltages rather than grounds. If an isolated switching circuit is required, proceed as follows.

1. Remove the three No. 4-40 pan head screws from the back of the microphone case; separate the case front and back. CAUTION: Microphone case is spring-loaded; care must be taken to hold the two halves of the microphone case together while removing screws.
2. Clip and remove the bare lead connecting switch terminals 2 and 4 (see Figure 1).
3. Unsolder the BLACK cable lead from switch terminal 5; solder the BLACK cable lead to switch terminal 4.
4. Locate springs in cutouts of cartridge shield and take care not to pinch leads when closing case. Fasten the two case halves together with the previously removed screws.
5. At the end of the cable, connect the RED lead to the isolated switch contact terminal used to complete the transmitter circuit.
6. Connect the BLACK lead to the other isolated switch contact terminal used for power supply voltage.
7. Connect the shield to chassis or circuit ground (see Guide).

CAUTION

Make certain that the shield is not connected to chassis ground for those models where the Guide specifies the shield should be connected to circuit ground.

Microphone Audio Input Circuit:

LOW IMPEDANCE

Connect the WHITE cable lead to the low-impedance microphone audio input terminal. Insulate (wrap with tape) the GREEN lead.

HIGH IMPEDANCE (ceramic microphone replacement)

Connect the GREEN cable lead to the high-impedance microphone audio input terminal. Insulate (wrap with tape) the WHITE lead.

NOTE

The high-impedance connection will generally be used when replacing a ceramic microphone supplied with original equipment. If you do not know whether your transceiver requires a high-impedance or a low-impedance microphone, follow the wiring instructions for the low-impedance connection. Check whether there is sufficient output from your transceiver. If the modulation output is too low, reconnect the microphone for high impedance.

SPECIFICATIONS

Type

CONTROLLED MAGNETIC®, Noise-Canceling

Frequency Response

Optimized response in the critical 200 to 5,000 Hz range

Impedance

Dual. Microphone rating impedance is 150 ohms (190 ohms actual) and "High". For impedance selection, see section on Connections.

Load Impedance Range

Low Impedance200 ohms to 1,000 ohms
High Impedance15 kilohms to 100 kilohms

Output Level (at 1,000 Hz)

	IMPEDANCE	
	Low	High
Open Circuit Voltage*	-39.5 dB (10.5 mV)	-20.0 dB (100 mV)
Power Level**	-58.5 dB	
	*0 dB = 1 volt per 100 microbars	
	**0 dB = 1 milliwatt per 10 microbars	

Switch

Push-to-talk leaf-type switch to actuate microphone circuit and an external relay or switching circuit. Microphone circuit normally open in either high- or low impedance.

Cable

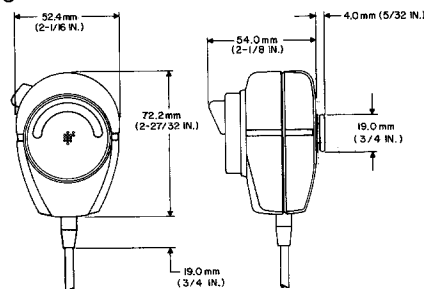
1.5m (5 ft) four-conductor, two conductors individually shielded, coiled cable

Case

Light gray ARMO-DUR®

Dimensions

See Figure 2



OVERALL DIMENSIONS
FIGURE 2

Net Weight

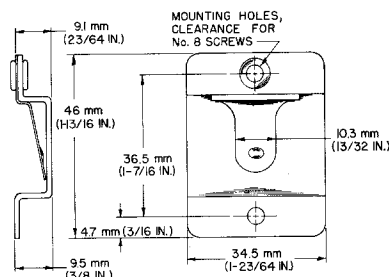
260 grams (9 oz)

Packaged Weight

401 grams (14 oz)

MOUNTING

A mounting bracket for permanent installation is supplied with each microphone (see Figure 3).



MOUNTING BRACKET
FIGURE 3

FURNISHED ACCESSORY

Mounting BracketRK6MB

REPLACEMENT PARTS

Cartridge90C1756
Switch Assembly90F1008
Switch Button65A240A
Cable70A4137
Case Front90D1084
Case Back90M1047

FULL ONE YEAR WARRANTY

Shure Brothers Incorporated ("Shure"), 222 Hartrey Avenue, Evanston, Illinois 60204, warrants to the owner of this product that it will be free, in normal use, of any defects in workmanship and materials for a period of one year from date of purchase. You should retain proof of date of purchase. Shure is not liable for any consequential damages. If this Shure product has any defects as described above, carefully repack the unit and return it prepaid to the above address. If you are not in the United States, return the unit to your dealer or authorized Service Center for repair. The unit will be repaired or replaced and returned to you promptly, and if it cannot be repaired or replaced, you may elect to receive a refund.