CONTROLLED MAGNETIC® NOISE-CANCELING COMMUNICATIONS MICROPHONES

NOISE CANCELLATION

The important characteristics contributing to noise cancellation and clear speech transmission in the Model 419 Series 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 4,000 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 their inherent directional properties, the Model 419 Series reject 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 419 Series discriminate against sounds arriving from a distance in favor of sounds from a near source. The microphones operate 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 the Model 419 Series, "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 419A and 419B. They will function very satisfactorily under most conditions of humidity and temperature. Dropping the microphone or other similar severe mechanical shocks should be avoided.

CONNECTIONS

The internal connections of Models 419A and 419B are shown in Figure 1.

In both models, the RED and BLACK cable leads control an external relay or switching circuit.

In the high-impedance Model 419A, the WHITE cable lead is the "hot" conductor for the audio input circuit; the shield is connected to the amplifier or chassis ground.

In the low-impedance Model 419B, the GREEN and WHITE leads are the "hot" conductors for connection to a balanced line audio input circuit; the shield is connected to the amplifier or chassis ground.
SPECIFICATIONS

Type
CONTROLLED MAGNETIC®, Noise-Canceling

Frequency Response
Optimized response in the critical 200 to 4,000 Hz range (see Figure 2)

Impedance
Model 419A: Microphone impedance is "High"
Model 419B: Microphone rating impedance is 150 ohms (200 ohms actual)

Load Impedance Range
Model 419A: 15 kilohms to 100 kilohms
Model 419B: 200 ohms to 1,000 ohms

Output Level (at 1,000 Hz)

<table>
<thead>
<tr>
<th></th>
<th>419A</th>
<th>419B</th>
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<tbody>
<tr>
<td>Open Circuit Voltage**</td>
<td>−18.5 dB</td>
<td>−40.5 dB</td>
</tr>
<tr>
<td>(.119 V)</td>
<td>(9.44 mV)</td>
<td></td>
</tr>
<tr>
<td>Power Level***</td>
<td>−59.5 dB</td>
<td></td>
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<tr>
<td>*0 dB = 1 volt per 100 microbars</td>
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<td></td>
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<tr>
<td>**0 dB = 1 milliwatt per 10 microbars</td>
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Switch
Push-to-talk leaf-type switch to actuate microphone circuit and an external relay or switching circuit.

Cable
Model 419A: 1.5m (5 ft) three-conductor, one-conductor shielded, coiled cable
Model 419B: 1.5m (5 ft) four-conductor, two-conductors shielded, coiled cable

Case
Matte black ARMO-DUR®

Dimensions
See Figure 3

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 4).

FURNISHED ACCESSORY
Mounting Bracket ..................RK6MB

REPLACEMENT PARTS

<table>
<thead>
<tr>
<th></th>
<th>419A</th>
<th>419B</th>
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<tbody>
<tr>
<td>Cartridge</td>
<td>90A1756</td>
<td>R19B</td>
</tr>
<tr>
<td>Cable</td>
<td>C24C</td>
<td>C25C</td>
</tr>
<tr>
<td>Case</td>
<td>RK19C</td>
<td>RK20C</td>
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<tr>
<td>Switch</td>
<td>90B1008</td>
<td>RK15S</td>
</tr>
<tr>
<td>Switch Button</td>
<td>RK16SB</td>
<td>RK16SB</td>
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GUARANTEE
This Shure product is guaranteed in normal use to be free from electrical and mechanical defects for a period of one year from date of purchase. Please retain proof of purchase date. This guarantee includes all parts and labor. This guarantee is in lieu of any and all other guarantees or warranties, express or implied, and there shall be no recovery for any consequential or incidental damages.

SHIPPING INSTRUCTIONS
Carefully repack the unit and return it prepaid to:
Shure Brothers Incorporated
Attention: Service Department
1501 West Shure Drive
Arlington Heights, Illinois 60004
If outside the United States, return the unit to your dealer or Authorized Shure Service Center for repair. The unit will be returned to you prepaid.