INSTRUCTIONS

Pressure Microphone
TYPE BK-1A
MI-11007

TECHNICAL DATA

Effective Output Level at 1000 Cycles
-52 dbm
Sound Pressure, 10 dynes/cm²
Gm -14 db RTMA Rating

Frequency Response
60 to 10,000 cycles (See Fig. 2)

Stand Fitting
1/2 inch pipe thread

Recommended Load Impedance
Unloaded input transformer

Output Impedance
250 ohms, can be connected for
30 or 150 ohms, See Fig. 4.

Hum Pickup
-102 dbm, hum field .001 gauss

Dimensions and Weight
Diameter 1-7/8 inches
Length 7-3/4 inches including
mounting
Weight 18 oz. less cable

Finish
TV gray and chrome

Cable
MI-43-B Length 30 ft.

Directional Characteristics
Semi-directional when mounted hori-
zontally.
Non-directional when mounted vertically.
See Fig. 3 for horizontal-directional
pattern.

DESCRIPTION

The Type BK-1A pressure Microphone is a
high-fidelity instrument of the pressure-
actuated type, especially designed for an-
nouncing and remote pickup. Its smooth
response and frequency range (60 to 10,000
cycles) make it suitable for reproducing both
music and speech. It is effectively non-
directional when mounted vertically and is
semi-directional when mounted horizontally.

The moving element consists of a light-
weight molded diaphragm attached to an annu-
lar coil assembly which is placed within a
magnetic field. Coupled to the diaphragm is
an acoustic circuit so proportioned that the
diaphragm velocity remains essentially

Figure 1 - Type BK-1A Microphone
on Desk Stand MI-11008

IB-24883
Figure 2 - Frequency Response

Figure 3 - Directional Patterns
constant for a constant sound pressure from 60 to 10,000 cycles. The coil is connected to a transformer which provides output impedances of 30, 150 and 250 ohms.

When mounted vertically the BK-1A Microphone is non-directional with the higher frequencies uniformly attenuated. When mounted horizontally, the microphone is essentially nondirectional for frequencies below 2000 cycles, and the higher frequencies are attenuated more as the angle with the perpendicular line to the diaphragm increases. Figure 3 shows the relative directional output or pickup with the microphone horizontally positioned.

The BK-1A Microphone is particularly recommended for broadcast announcing and remote pickup. It is a small, lightweight microphone which may be carried in the hand for interview and mobile use or used with a stand. The relatively high output level, which provides a good signal-to-noise ratio, is advantageous for remote work. When it is used in the open air, its construction makes the effect of air currents practically negligible. This microphone is also excellent for many studio applications which require a nondirectional or semi-directional microphone.

OPERATION

Connections

The microphone is shipped connected for an output impedance of 250 ohms. To change the impedance to 30 or 150 ohms, remove the AS-32 two-inch screw shown in Figure 5. Slide the foot down along the cable, thus exposing the terminal board. Change the cable connections according to Figure 4.

Phasing

When the outputs of two or more microphones are fed into a common mixing circuit their respective outputs must be in phase. Otherwise, the output of one will oppose the output of the other resulting in a reduction in output instead of a gain.

The BK-1A Microphone is phased so that the red cable lead is electrically positive when the sound pressure on the front of the microphone is in the positive half of the cycle.

To check the phasing of two or more microphones, connect one microphone to the amplifier input and set the volume control to obtain the desired output level while talking into the microphone. Then connect the second microphone in parallel with the first and, without changing the volume control setting, hold the two microphones side by side and talk into them. If a decrease in volume results, reverse the connections of one of the microphones at the amplifier input terminals. Each additional microphone should be checked in a like manner and, if necessary, the cable connections should be reversed to make the phasing agree with the microphones already connected.

Stand Fitting

The BK-1A Microphone is supplied with a ball and socket mounting designed for use with stands having a 1/2-inch pipe thread such as the MI-4092-D, MI-11050, and MI-12065 microphone stands. The Desk Stand MI-11008 is expressly designed for use with this microphone.

Placement

When the microphone is used in the studio, it should be kept in mind that correct placement in relation to artists and instruments is of extreme importance. The requirements for particular installations vary widely and results will be determined best by experience. Exact placement must be determined by the following factors:

![Connection Diagram](image)

Figure 4 - Connection Diagram
M A I N T E N A N C E

It is not recommended that the customer attempt repairs other than replacement of the transformer, front case assembly or mounting parts. To replace these assemblies, proceed as follows:

1. Remove the microphone from the base.
2. Remove the #8-32 two-inch screw shown in Figure 5.
3. Slide the foot down along the cable, thus exposing the terminal board.
4. Dismantle the motor from the case by removing two #85964 nuts. Refer to Figure 5.
5. Slide the upper assembly out the top of the front case.
6. Reassemble in reverse order, making sure to align the key to engage the keyway at each joint.


C A U T I O N : A i r t i g h t j o i n t s a b o v e t h e f o o t ( 9 5 0 9 4 ) o f t h e B 1 -1 A M i c r o-
phone are essential to its proper operation. Use a silicone grease to seal the joints when reassembling after servicing.

For replacement of the diaphragm and coil assembly or magnet assembly, it is recommended that the microphone be returned to the manufacturer. Before returning a unit, make sure the trouble is in the microphone and not elsewhere in the circuit. Obtain a Returned Apparatus Tag and Repair Order from your RCA Field Office or write to RCA Service Company, Returned Apparatus Control, Camden, N. J. Attach the tag, properly filled out, to the damaged equipment and send the equipment and the repair order to the manufacturer.

REPLACEMENT PARTS

Figure 5 and the following parts list are included to provide identification when ordering replacement parts. Order from RCA Replacement Parts Department, Camden, N. J. giving the Stock Number and Description of
Figure 5 - Parts Location Diagram

the parts wanted. Replacement parts supplied may be slightly different in form or size from the original parts but will be completely interchangeable with them.

LIST OF PARTS

<table>
<thead>
<tr>
<th>Symbol No.</th>
<th>Description</th>
<th>Stock No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>95036</td>
<td>Ball swivel joint, .310&quot; dia. ball with .375&quot; Iq. x .365&quot; dia. mtg. stud</td>
<td></td>
</tr>
<tr>
<td>95035</td>
<td>Bushing, shoulder, fibre 1/8&quot; dia. shoulder and .076&quot; dia. taper x 1/16 high, .048&quot; dia. bore</td>
<td>95044</td>
</tr>
<tr>
<td>95042</td>
<td>Bushing, shoulder, fibre 1/4&quot; dia. shoulder and 3/16&quot; dia. taper x 1/16&quot; high, -110 dia. bore</td>
<td>95043</td>
</tr>
<tr>
<td>95040</td>
<td>Screw #8-32 X 2&quot;</td>
<td></td>
</tr>
<tr>
<td>57203</td>
<td>Cable MI-438</td>
<td></td>
</tr>
<tr>
<td>95041</td>
<td></td>
<td></td>
</tr>
<tr>
<td>95049</td>
<td></td>
<td></td>
</tr>
<tr>
<td>95048</td>
<td></td>
<td></td>
</tr>
<tr>
<td>95047</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symbol No.</th>
<th>Description</th>
<th>Stock No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>95044</td>
<td>Case, microphone middle</td>
<td>95033</td>
</tr>
<tr>
<td>95043</td>
<td>Cover, microphone case front</td>
<td>95035</td>
</tr>
<tr>
<td>95041</td>
<td>Diaphragm, diaphragm and coil assembly</td>
<td>95039</td>
</tr>
<tr>
<td>95042</td>
<td>Foot, microphone case back</td>
<td>95034</td>
</tr>
<tr>
<td>95040</td>
<td>Insulator, laminated phenolic 1/32 thk. x 1.196 dia. with three .196&quot; dia. holes and two .128&quot; dia. holes</td>
<td>95050</td>
</tr>
<tr>
<td>Symbol No.</td>
<td>Description</td>
<td>Stock No.</td>
</tr>
<tr>
<td>-----------</td>
<td>-----------------------------------------------------------------------------</td>
<td>-----------</td>
</tr>
<tr>
<td></td>
<td>Nut, hex, brass, .047&quot; thick x 5/12&quot; dia. #60-112 tap</td>
<td>95041</td>
</tr>
<tr>
<td></td>
<td>Nut, hex #2-56 for lower pole bridge</td>
<td>59208</td>
</tr>
<tr>
<td></td>
<td>Nut, hex, steel #4-40, 1/4&quot; across flats, .093 thick</td>
<td>95864</td>
</tr>
<tr>
<td></td>
<td>Cable, 30 ft.</td>
<td>MI-438</td>
</tr>
<tr>
<td></td>
<td>Plate, mounting plate and stud assembly</td>
<td>95049</td>
</tr>
<tr>
<td></td>
<td>Plug, swivel joint retaining plug</td>
<td>95047</td>
</tr>
<tr>
<td></td>
<td>Screen, microphone perforated cover</td>
<td>95036</td>
</tr>
<tr>
<td></td>
<td>Screw, flat fillister head, #8-32 thd. .060&quot; dia. x .107&quot; lg.</td>
<td>95040</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Symbol No.</th>
<th>Description</th>
<th>Stock No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Screw, flat fillister head, #8-32 thd. .060&quot; dia. x .107&quot; lg.</td>
<td>95042</td>
</tr>
<tr>
<td></td>
<td>Seat, swivel joint retaining seat</td>
<td>95046</td>
</tr>
<tr>
<td></td>
<td>Socket, swivel joint retaining socket</td>
<td>95045</td>
</tr>
<tr>
<td></td>
<td>Spring, swivel joint compression spring</td>
<td>95048</td>
</tr>
<tr>
<td></td>
<td>Stud, brass, #4-40 thd. x 3-1/2&quot; lg. (Motor Supports)</td>
<td>95052</td>
</tr>
<tr>
<td></td>
<td>Transformer, microphone, turns ratio, ori. to sec. #1 - 1:2.1 min., ori. to sec. #2 - 1:5 min.</td>
<td>57203</td>
</tr>
</tbody>
</table>