

**Electro-Voice®**

a MARK IV company

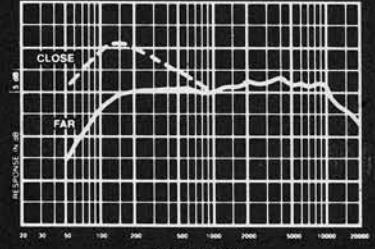


Figure 1  
Switch Position 1

# MODEL RE38N/D N/DYM® Dynamic Cardioid Microphone

## SPECIFICATIONS

**Generating Element:**  
Dynamic

**Frequency Response:**  
70 to 20,000 Hz (Far)  
25 to 20,000 Hz (Close)  
(see Figures 1-16)

**Polar Pattern:**  
Cardioid  
(see Figures 17-20)

**Equalization:**  
16 positions, switch selectable  
(see Figures 1-16)

**Impedance:**  
150 ohms, balanced

**Sensitivity,**  
**Open Circuit Voltage:**  
2.5 mV/ Pascal at 1000 Hz  
**Power Level:**  
-53 dB at 1000 Hz  
(0 dB = 1 mW/Pascal)

**Hum Pickup Level:**  
-135 dBm typical  
at 60 Hz  
in a 1 m OE field

**Magnetic Circuit:**  
N/DYM® magnet in  
a non-welded circuit

## Phasing:

Pin 2 will be positive referenced  
to pin 3 with a positive pressure  
on diaphragm

**Case Material:**  
Aluminum and Steel

**Dimensions:**  
122 mm (4.8 in.) Height  
109 mm (4.3 in.) Width  
89 mm (3.5 in.) Length  
(see Figure 21)

**Finish:**  
Satin Nickel

**Net Weight:**  
380 g (13.4 oz)

**Shipping Weight:**  
1.56 Kg (3 lbs, 7 oz)

**Package Dimensions:**  
355.6 mm (14 in.)  
x 215.9 mm (8.5 in.)  
x 152.4 mm (6 in.)

**Accessories Included:**  
81715 stand adapter  
Carrying case  
3/32 inch screwdriver

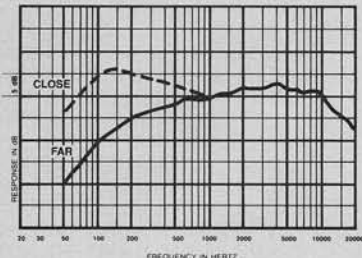
**Optional Accessories:**  
380 attenuator  
521 cable

## DESCRIPTION

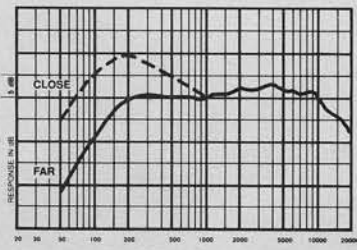
The Electro-Voice Model RE38N/D is a professional quality dynamic cardioid microphone designed especially for recording, broadcast and sound reinforcement applications requiring smooth tailorable response over a wide frequency range. The extended high frequency response and the 16-position equalization switch give the RE38N/D great flexibility in obtaining the appropriate sound for any situation. For those applications that require a deeper sound, the microphone has bass-boosting "proximity effect" when used up close. The amount of this "proximity effect" can be reduced by adjusting the equalization switch as shown on the frequency response curves. The "brightness" of the high frequency response is also adjustable with the equalization switch.

The RE38N/D incorporates a revolutionary neodymium alloy magnet to provide high sensitivity. Combined with the inherent low noise of a dynamic transducer, the high sensitivity ensures a superior signal-to-noise ratio ready for digital recording and sampling. To further reduce noise, the microphone uses a humbucking coil to attenuate hum from lighting and other sources. The RE38N/D utilizes Dyna-Damp™, an advanced vibration-isolation material, so that a large external shockmount is not required for studio use. DynaDamp™ is a unique foamed elastomer, specially formulated for vibration control.

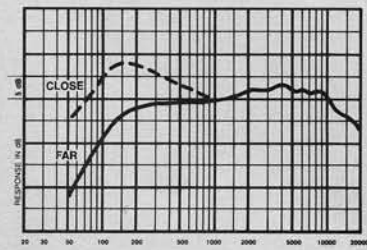
The dynamic element of the RE38N/D provides reliable operation in humidity and temperature extremes. An Acoustifoam pop



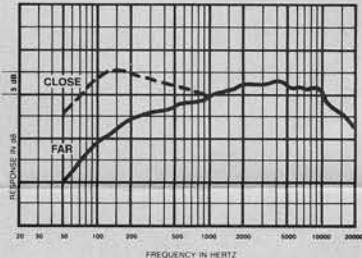
**Figure 2**  
**Switch Position 2**



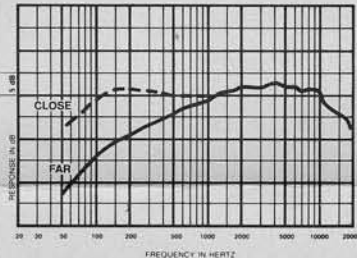
**Figure 3**  
**Switch Position 3**



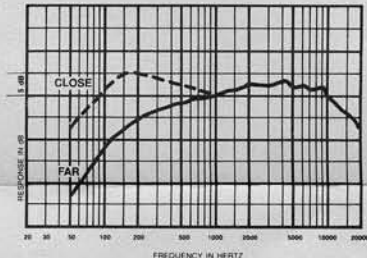
**Figure 4**  
**Switch Position 4**



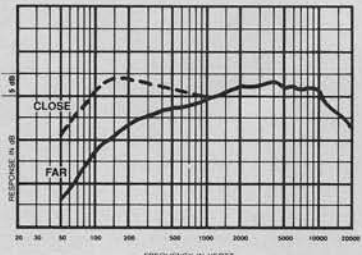
**Figure 5**  
**Switch Position 5**



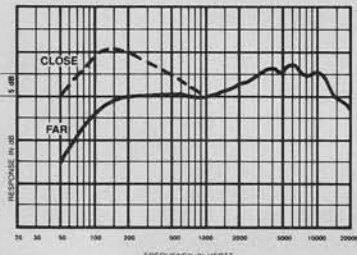
**Figure 6**  
**Switch Position 6**



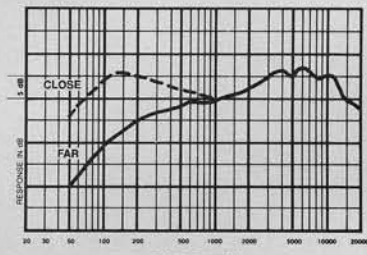
**Figure 7**  
**Switch Position 7**



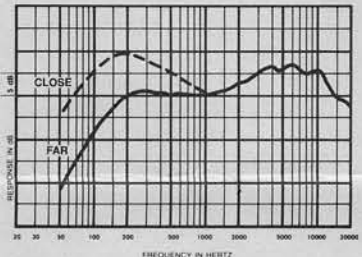
**Figure 8**  
**Switch Position 8**



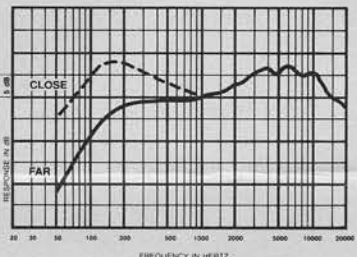
**Figure 9**  
**Switch Position 9**



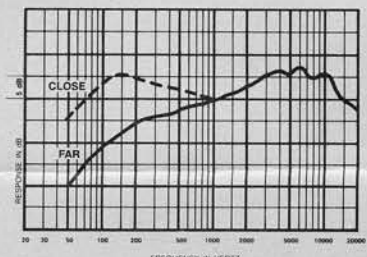
**Figure 10**  
**Switch Position 10**



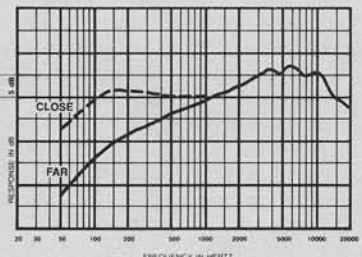
**Figure 11**  
**Switch Position 11**



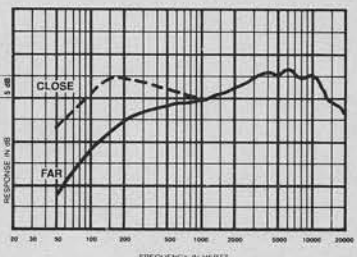
**Figure 12**  
**Switch Position 12**



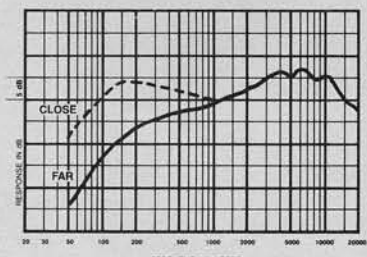
**Figure 13**  
**Switch Position 13**



**Figure 14**  
**Switch Position 14**



**Figure 15**  
**Switch Position 15**



**Figure 16**  
**Switch Position 16**

filter reduces both wind noise and "P-pop" breath sounds. The microphone features a rugged machined aluminum case and Memraflex grille screen designed to withstand all the rigors of professional use.

To solve the problem of microphone placement the RE38N/D features a pivoting yoke configuration. With the unique pivoting yoke, the microphone can be easily adjusted to position the front toward the sound source. The yoke positions are detented to assure the microphone doesn't shift during usage. This adjustment option in combination with the stand adapter provides a highly flexible mounting system.

The cardioid polar pattern of the RE38N/D provides excellent isolation at all frequencies. The directional control is smooth in transition from front to back to keep off-axis coloration to a minimum.

### USING THE EQUALIZATION ADJUSTMENTS

The graphic pictorials on the RE38N/D nameplate provide an approximation of the 16 possible far-field (distant) frequency responses which may be selected. This flexibility allows the user to obtain a desired sound character in almost any situation right at the microphone. There are eight low frequency tailoring combinations and two high frequency combinations to yield a total of 16 possible frequency responses built into the RE38N/D. With these options, the user can compensate for proximity effect, low frequency noise and sibilance to get that "right sound." The control is easy to adjust with a small screwdriver (provided) yet cannot be accidentally changed during use.

Experimentation is encouraged with the equalization positions to get the best performance for your application. To aid in determining the frequency response which is right for your application, the typical responses for the positions are shown in Figures 1 through 16.

Switch position 1 yields the flattest frequency response of all the positions to give a clean, uncolored representation of the input sound for signals in the far field. The far field response shown is the output when the sound source is at least 24 inches from the microphone grille. The low frequency response increases due to "proximity effect" when the sound source is less than 24 inches from the microphone. This low frequency response will continue to increase as the sound source moves closer to the microphone. The amount of "proximity effect" in the output of the microphone can be controlled by placing the microphone at different distances from the sound source and with the equalization choices provided in the RE38N/D. Positions 9 through 16 have the same low frequency shape as the respective positions 1 through 8, the difference being that high end response is "bright" in positions 9 through 16.

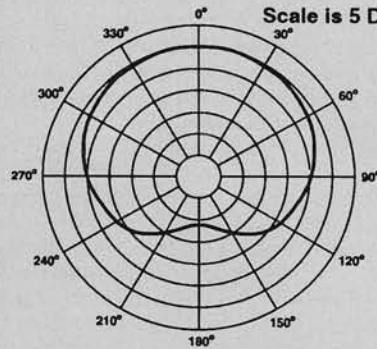


Figure 17  
Polar Response at 250 Hz

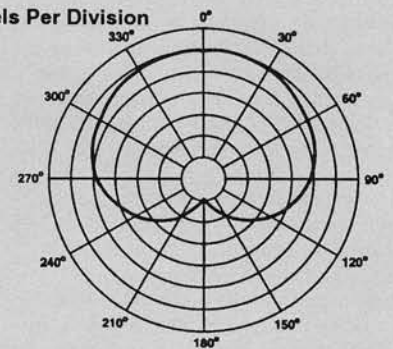


Figure 18  
Polar Response at 1000 Hz

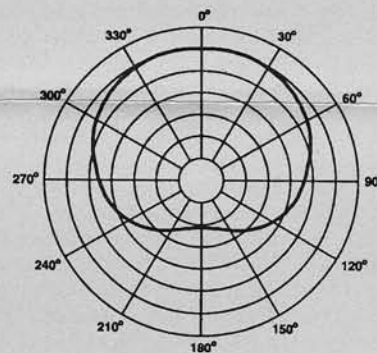


Figure 19  
Polar Response at 2000 Hz

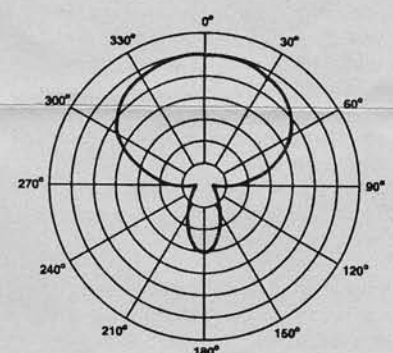
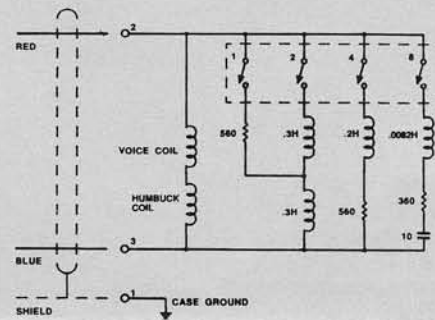


Figure 20  
Polar Response at 5000 Hz



NOTE: POSITIVE PRESSURE ON GENERATING ELEMENT CAUSES POSITIVE VOLTAGE AT PIN 2.

Figure 21 — Wiring Diagram

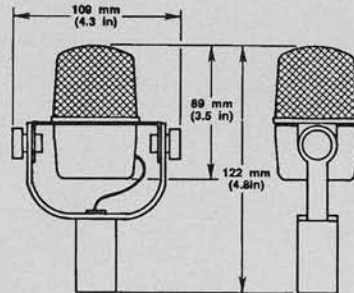


Figure 21 - Dimensions

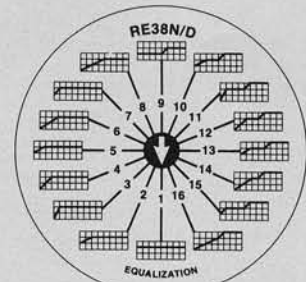


Figure 23 — Equalization Pictorial  
Note: Switch Shown in Position 1



## ARCHITECTS' AND ENGINEERS' SPECIFICATIONS

The microphone shall be a dynamic cardioid type with a wide uniform frequency response from 70 to 20,000 Hz. The microphone shall have bass-boosting "proximity effect" when used up close and an easy to adjust equalization switch permitting the selection of 16 different frequency response adjustments.

The open circuit voltage sensitivity shall be 2.5 mV/Pascal at 1000 Hz and the power level sensitivity shall be -53 dB at 1000 Hz where 0 dB equals 1 mW/Pascal. The magnetic circuit shall be a nonwelded circuit and employ a neodymium alloy magnet. The transducer shall employ a hum-buck coil with a resulting hum sensitivity of -135 dBm at 60 Hz in a 1 millioersted field and a shield to prevent dust and iron particles from reaching the diaphragm. Rated impedance shall be 150 ohms. Line shall be balanced to ground and phased. Pin 2 shall have a positive voltage with reference to Pin 3 with positive pressure on the diaphragm.

The microphone shall be supplied with a Memraflex grille screen, pop filter and an exceptional shock isolation system using DynaDamp™, an advanced foam elastomer formulated for vibration control.

Response at any angular position away from the major axis shall be essentially similar to the response on the major axis, except attenuated uniformly at all frequencies by an amount appropriate to that angular position. Polar characteristics shall be sufficiently uniform in all planes so that it is, effectively, a cardioid of revolution.

Case material shall be aluminum and steel. The microphone shall have a unique pivoting yoke, detented to hold a set position, and a stand adapter, to provide a highly flexible mounting system. The microphone shall have a maximum height of 122 mm (4.8 in.), length of 89 mm (3.5 in.), width of 109 mm (4.3 in.) and a net weight of 380 grams (13.4 oz). The finish shall be a non-reflecting satin nickel. The microphone shall have a built-in cable connector insert similar or equivalent to a Switchcraft QG3M. Accessories shall include an 81715 stand adapter, carrying case and 3/32 inch screwdriver.

The Electro-Voice RE38N/D is specified.

## WARRANTY (Limited)

Electro-Voice Professional Microphones are guaranteed against malfunction from any cause for a period of two years from date of original purchase. Also, these microphones are guaranteed without time limit against malfunction in the acoustic system due to defects in workmanship and material. Any active electronics incorporated in the microphone is guaranteed for three years from date of original purchase for parts and labor 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 extend to finish, appearance items, cables, cable connectors, switches or malfunction due to abuse or operation under other than specified conditions, nor does it extend to incidental or consequential damages. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion may not apply to you. Repair by other than Electro-Voice or its authorized warranty service agencies will void this guarantee. A list of authorized warranty service centers is available from Electro-Voice, Inc., 600 Cecil Street, Buchanan, MI 49107 (AC/616-695-6831); and/or Electro-Voice West, 8234 Doe Avenue, Visalia, CA 93291 (AC/209-651-7777). This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Service and repair address for this product:  
Electro-Voice, Inc., 600 Cecil Street,  
Buchanan, MI 49107.

Specifications subject to change without notice.



**ELECTRO-VOICE, INC., 600 Cecil Street, Buchanan, Michigan 49107**

MANUFACTURING PLANTS AT ■ BUCHANAN, MI ■ NEWPORT, TN ■ SEVIERVILLE, TN ■ OKLAHOMA CITY, OK ■ GANANOQUE, ONT.  
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