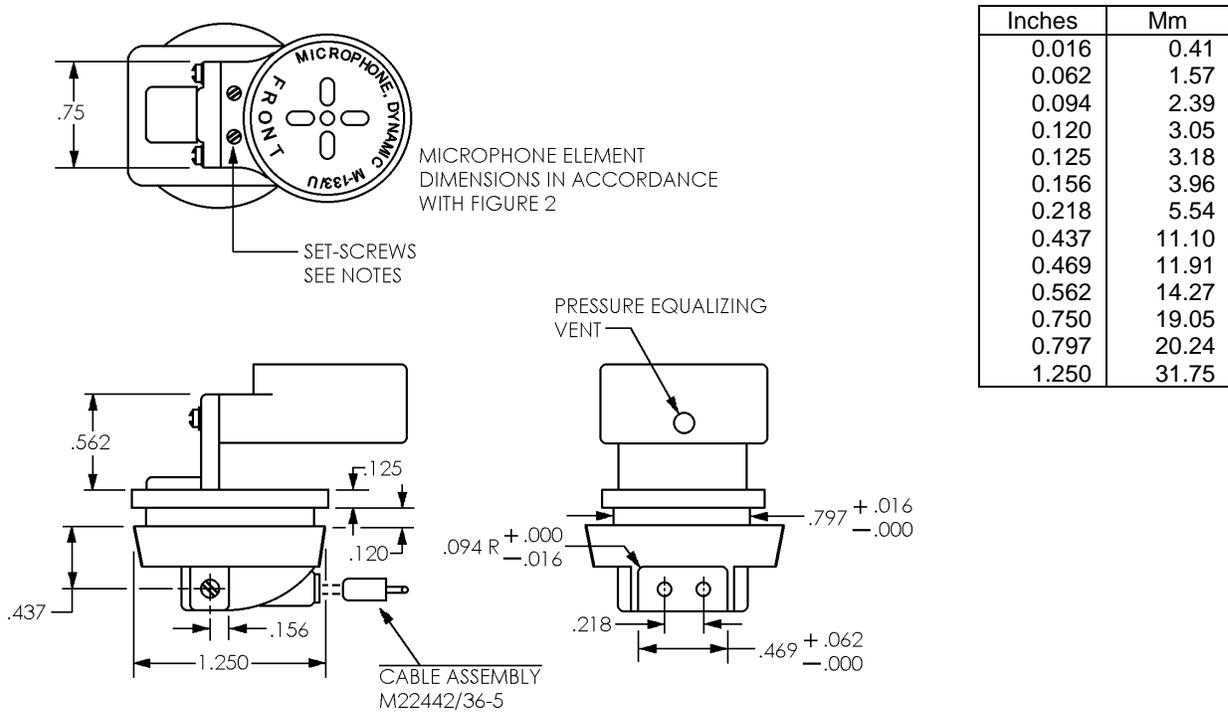


PERFORMANCE SPECIFICATION SHEET

MICROPHONE ASSEMBLY AND MICROPHONE, DYNAMIC,  
M-133/U AND M26542/9-01

This specification is approved for use by all Departments  
and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of  
this specification and MIL-PRF-26542.

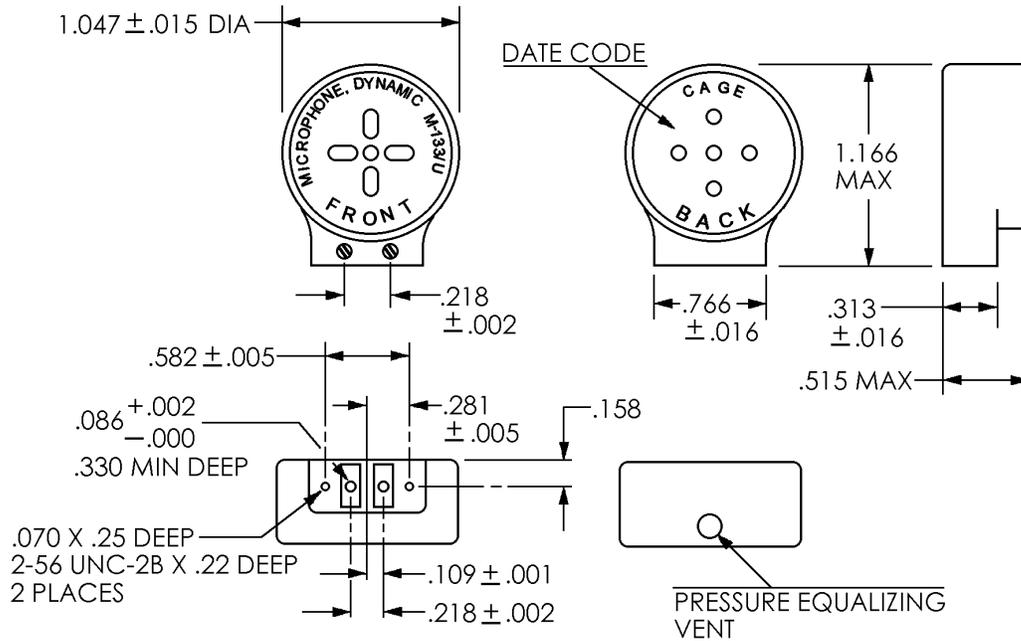


NOTES:

1. Dimensions are in inches. Tolerance is  $\pm .015$  inches (0.38 mm), unless otherwise specified.
2. Quantity and configuration of sound apertures is optional.
3. The microphone element shall be marked with the same Part or Identifying Number (PIN) (i.e., M-133/U). Placement on surface shown is optional. The combined microphone-cable assembly PIN (i.e., M26542/9-01) shall appear on the packaging for that assembly, in accordance with MIL-STD-129.
4. Set-screws shall secure the element to the bracket securely, of type slotted for consistency with established US Army field-repair procedures and tooling, and shall be recessed.

FIGURE 1. Microphone assembly, M26542/9-01.

Inches	Mm
0.002	0.05
0.005	0.13
0.016	0.41
0.070	1.78
0.086	2.18
0.109	2.77
0.158	4.01
0.218	5.54
0.220	5.59
0.250	6.35
0.281	7.14
0.313	7.95
0.330	8.38
0.515	13.08
0.582	14.78
0.766	19.46
1.047	26.59
1.166	29.62

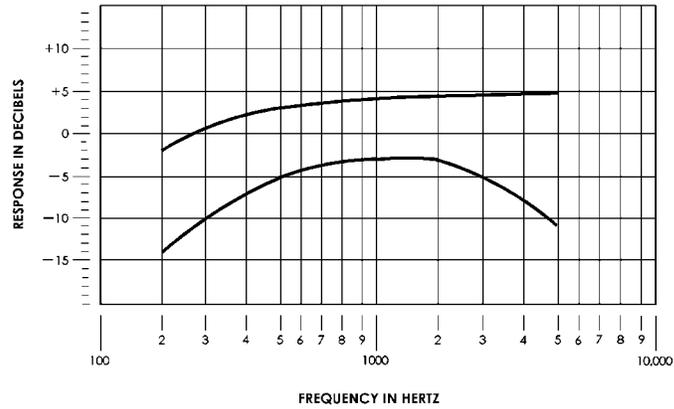


NOTES:

1. Dimensions are in inches. Unless otherwise specified, tolerances are  $\pm .015$  (0.38 mm).
2. The microphone element shall be marked with the same PIN (i.e., M-133/U). Placement on surface shown is optional.
3. Set-screws shall hold the part securely to the bracket, shall be slotted (for interchangeability of spares among manufacturers and tri-Service applications), and recessed.
4. Sound aperture location and configuration are optional, provided that frequency response, environmental and performance requirements are met as specified.

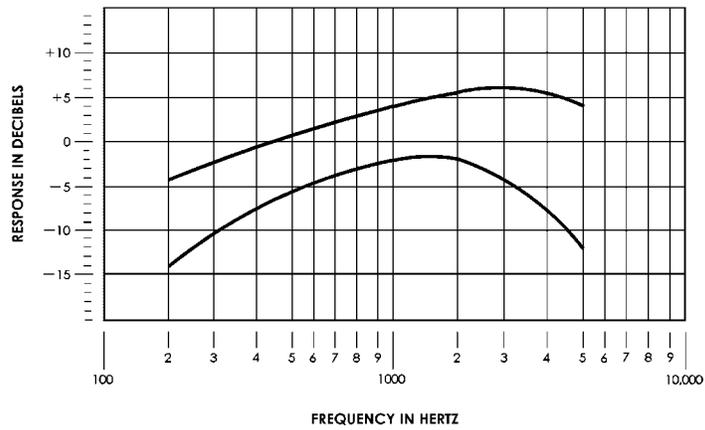
FIGURE 2. Microphone M-133/U.

MIL-PRF-26542/9C



Frequency points	200 Hz	1,000 Hz	5,000 Hz
Upper limits (dB)	-2.0	+4.0	+5.0
Lower limits(dB)	-14.0	-3.0	-11.0

FIGURE 3. Frequency response envelope for microphone element M-133/U at ground level.



Frequency points	200 Hz	1,000 Hz	5,000 Hz
Upper limits (dB)	-4.0	+4.0	+4.0
Lower limits(dB)	-14.0	-2.0	-12.0

FIGURE 4. Frequency response at 25,000 feet.

## REQUIREMENTS:

## Component parts:

Microphone element: Shall be in accordance with figures 1 and 2, as specified by the PIN (see table I).

Bracket: Shall be in accordance with figure 1, for interface to the dimensions of the gas mask assembly. Two (2) screws securing the bracket to the microphone element, Air Force-Navy Aeronautical Standard type AN500D-6 (3/8 inch) 2-56 thread, shall be supplied for interchangeability. The bracket shall also be supplied with suitable hardware to ensure that the microphone element does not become disengaged during normal use, such as lock washers.

Cable assembly: Shall be PIN M22442/36-5, for interchangeability, and to meet the environmental requirements of this specification and the end-item-assembly.

Plug assembly: U-173/U, in accordance with USAF Drawing 57B12662, or electrically and mechanically compatible part meeting the environmental requirements of MIL-PRF-26542.

## Performance:

Sensitivity at ground level: 36.90 dB - 42.92 dB (re 1  $\mu$ V) or 69.98  $\mu$ V – 139.63  $\mu$ V with a SPL input of 28 dynes/cm<sup>2</sup> at 1 kHz.

Sensitivity at a simulated altitude: Sensitivity shall be within 8 dB of the ground level sensitivity when tested at 25,000 feet.

Frequency response at ground level and at 25,000 feet: The envelope shall be as shown on figures 3 and 4. The frequency response range of the element shall be 200 Hz to 5,000 Hz.

The response curves generated shall be on the same scale as shown on figures 3 and 4. The response curve shall not exceed the upper and lower limit curves of the stationary Frequency Response Envelope, within the frequency ranges identified in the charts (see figures 3 and 4).

Impedance: 4.0 ohms to 6.0 ohms.

Resistive load: 5.0 ohms.

Intended use: Microphone element M-101/AIC is a noise canceling dynamic moving coil microphone element designed for use on a headband type headset at low altitudes or for use in an oxygen mask or pressure-type oxygen helmet, at altitudes where the use of an oxygen helmet is required. The microphone element is intended for use primarily in US Army applications requiring the M45 or the M40A1 series of gas masks, to provide communication under the noise conditions encountered in military aircraft.

TABLE I. PIN designations.

PIN	Characteristics
M26542/9-01	Supplied with the bracket and cable assembly M22442/36-5 (19.50 in), as shown on figure 1.
M-133/U	Supplied with microphone element only

The microphone assembly shall be tested in accordance with the tests listed in table II.

TABLE II. Parameter applicability.

Inspection	Qualification	Group "A"	Group "B"	Group "C"
<u>Group I</u>				
Visual and mechanical inspection	X	X		
Sensitivity at ground level	X	X		
Sensitivity at altitude	X	X		
Frequency response at ground level	X	X		
Frequency response at altitude	X			
Impedance	X			
Noise cancellation characteristic	X			
Effect of external magnetic field	X			
Stray magnetic field	X			
Linearity	X		X	
Talk-out	X		X	
Dielectric withstanding voltage				
Signal-to-noise				
Distortion				
Interchangeability				
<u>Group II</u>				
Thermal shock	X			X
Humidity	X			X
Drop	X			X
Pressure equalization	X			X
Explosive decompression				
Salt fog				
<u>Group III</u>				
Vibration	X			X
Bounce	X			X
Altitude	X			X
Moisture barrier seal				
Immersion	X			X
<u>Group IV</u>				
Fungus	X			
<u>Group V</u>				
Gun blast	X			

## CONCLUDING MATERIAL

Custodians:  
 Army - CR  
 Navy - EC  
 Air Force - 11  
 DLA - CC

Preparing activity:  
 DLA - CC

(Project 5965-0351-005)

Review activities:  
 Army - AR, AT, AV, CR4, EA  
 Navy - AS, OS  
 Air Force - 99