

C-55P FET CONDENSER MICROPHONE

TURNING CAPSULE SYSTEM

TECHNICAL MANUAL OPERATING INSTRUCTIONS



SPECIFICATIONS

Type	C-55P FET Condenser Microphone
Capsule	C-7P type capsule
IC	Hybrid IC
Microphone Cable	0.205" ϕ (5.2mm ϕ) 2 conductor cadmium bronze cable, 20 ft (6m)
Frequency Response	40-16,000Hz \pm 2.5dB
Directivity	Uni-directional (Cardioid)

Output Level

Position of the Pad Switch	Output Impedance (ohms)	Effective output level (dBm)* 1	Open circuit voltage (dB)* 2	EIA rating GM (dB)* 3
[0]	250	-49.8	-50.0 (3.16mV)	-141.8
[-8dB]	250 (PAD)	-57.8	-58.0 (1.25mV)	-149.8

Deviation \pm 2dB

Note *1 0dBm=1mW/10 μ bar

*2 0dB=1V/10 μ bar

*3 EIA Standard SE-105

Output Impedance	250 ohms \pm 20% at 1,000Hz balanced
Power Supply	Normal operating voltage DC 48V* Permitted operating voltage DC 48-54V Current drain less than 2.5mA * internal impedance 3.5k Ω ; open output voltage

Noise Level	S/N ratio; more than 50dB (1,000Hz, 1 μ bar) Inherent noise; less than 24dB SPL Wind noise *1; less than 43dB SPL Induction noise of external magnetic field*2; less than 5dB SPL/m gauss
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Note *1 Wind noise is the value measured by applying a wind velocity of 6.6ft(2m)/second from all directions to the microphones. The mean value is taken and converted to the equivalent input sound level. (0dB=2 \times 10⁻⁴ μ bar)

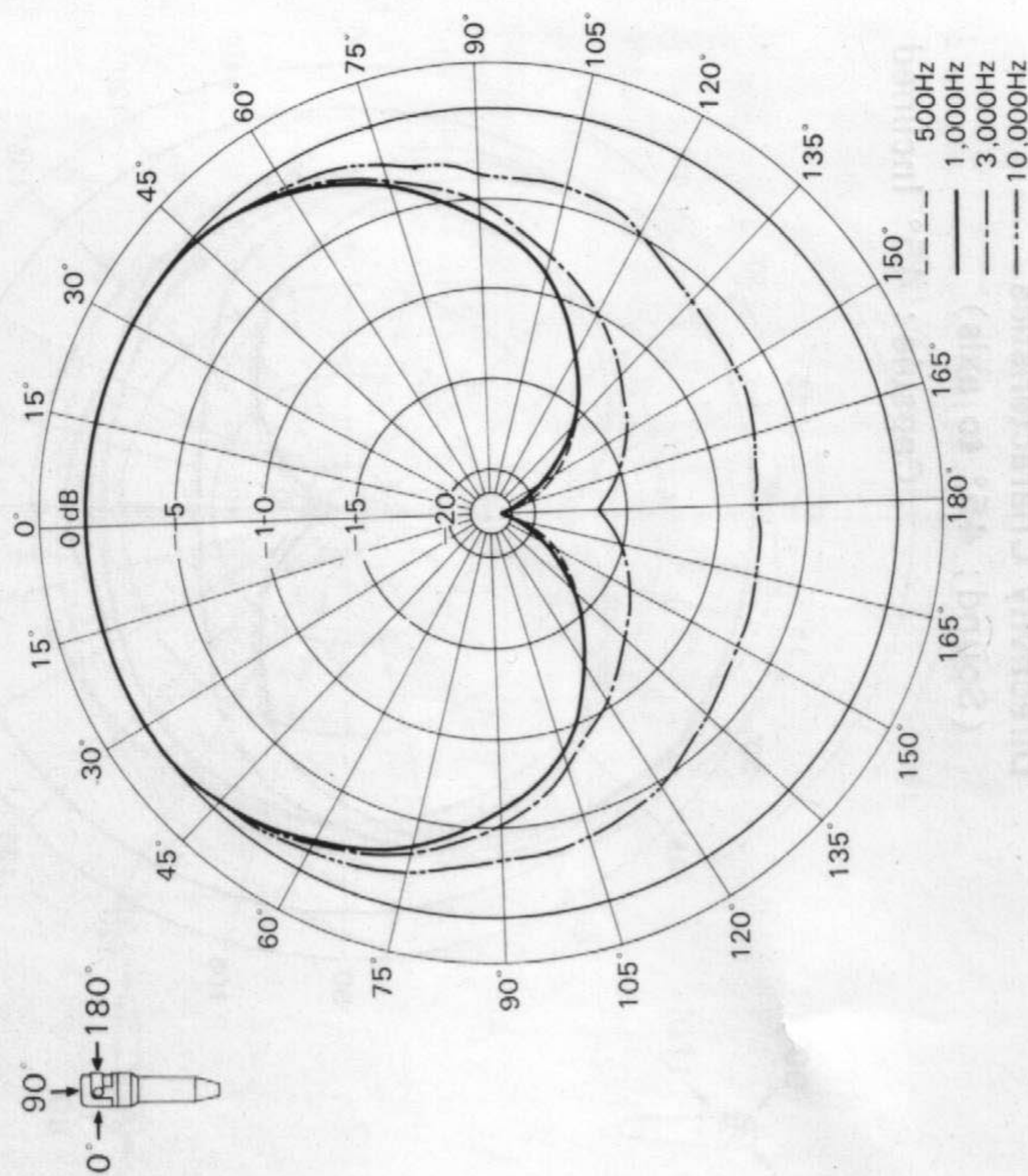
*2 The external magnetic field induction noise is measured with the microphone placed in the alternating magnetic field of 50Hz, 1 milligauss. The maximum noise value is taken and then converted to the equivalent input sound level (0dB=2 \times 10⁻⁴ μ bar)

Maximum Sound Pressure Input Level	154dB SPL
Dynamic Range	About 130dB
Storage Temperature	-4°F (-20°C)-140°F (60°C)
Operating Temperature	32°F (0°C)-140°F (60°C)
Shock Resistance	more than 30 G
Dimensions	1 $\frac{1}{8}$ " ϕ \times 6 $\frac{1}{8}$ " (32.6mm ϕ \times 167mm)
Weight	10oz (280g) without cable
Supplied Accessories	Wind screen Microphone Holder SAD-8PB (PF $\frac{1}{2}$ ") Stand Adaptor SAD-3B (PF $\frac{1}{2}$ " to NS $\frac{5}{8}$ ")

Design and specifications subject to change without notice.

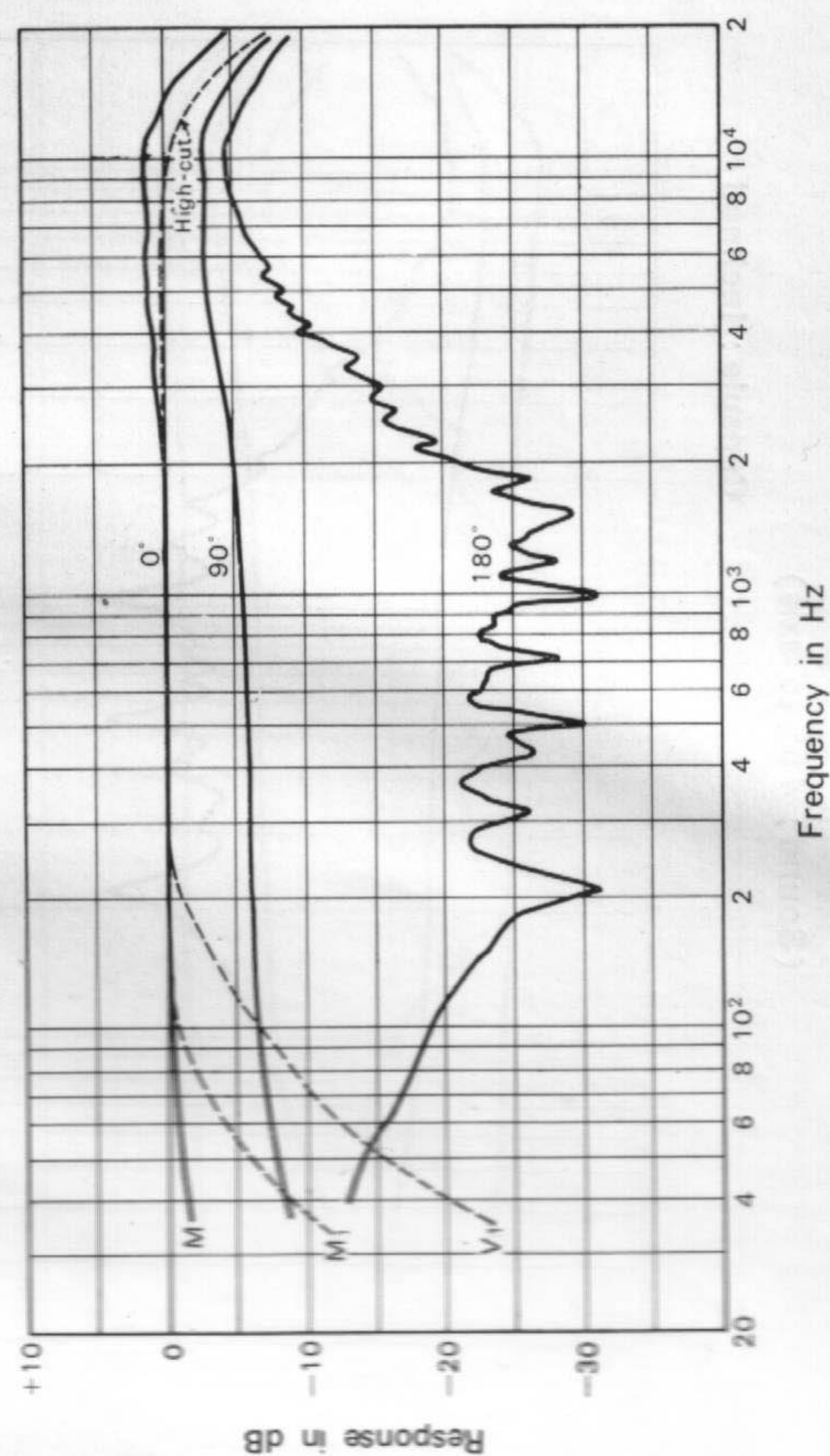
Directivity Characteristics
(Sound; 90° to axis)

Capsule: Vertical



Frequency Response Characteristics
(Sound; 90° to axis)

Capsule: Vertical



The SONY C-55P microphone is the highest quality unidirectional (cardioid) condenser microphone possible to achieve.

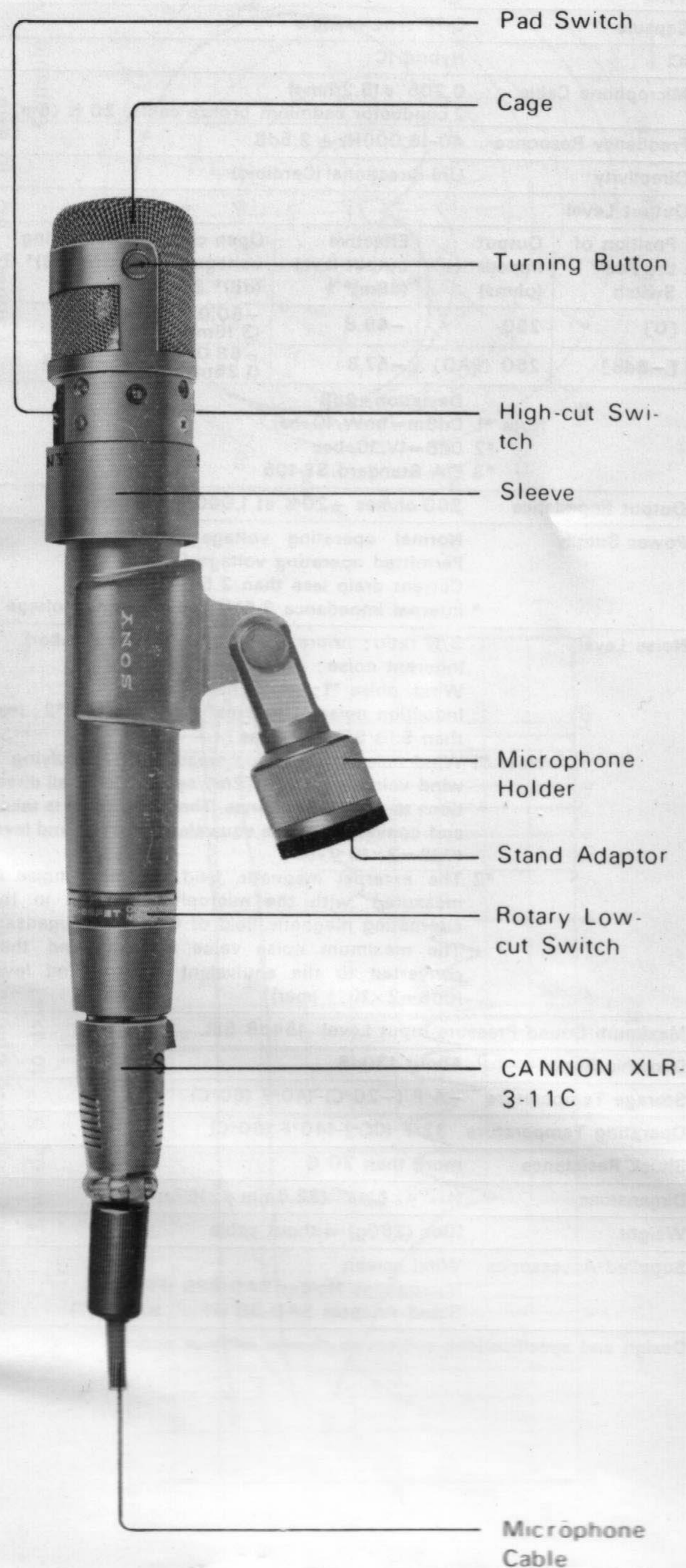
It provides superior performance together with the utmost in operating convenience and reliability.

SONY CORPORATION who proudly presented the famous C-37 FET condenser microphone which constantly surpasses the most severe requirements of radio/TV stations, recording studios and professional recordists (until it has become out of the standards in the industry) now utilizes its design techniques and production experience to bring the C-55P unidirectional condenser microphone to the audio and broadcast industries as an adjunct to the C-37 FET condenser microphone. These two microphones, the C-37 FET and C-55P together make possible any combination of uses which are experienced in professional fields.

FEATURES

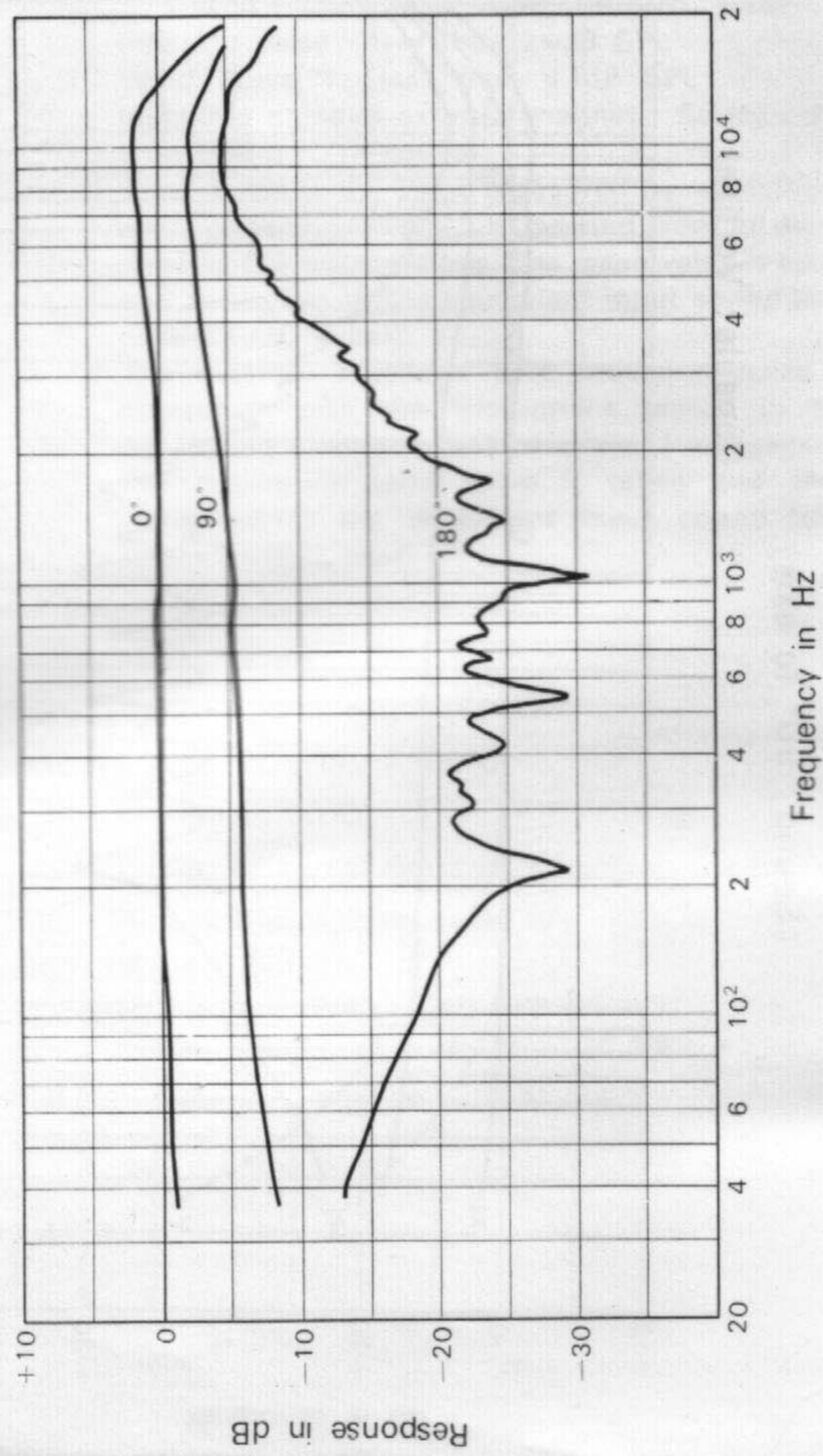
- Capsule turns through 90 degrees by fingers pressure, without the use of tools, providing a unique versatility for hand held, stand, or boom mount use.
- Smooth frequency response, sharp directional characteristics, low noise and wide dynamic range is realized by the use of a precision engineered capsule which supports a pure gold deposited micro thin diaphragm as well as specially selected low noise field effect transistors (FET) from the SONY semiconductor division.
- Its sturdy construction prevents mechanical vibration, dampens wind noise and provides shielding against external magnetic fields and TV wave buzz; the C-55P will perform satisfactorily under the most adverse operating conditions.
- The C-55P is finished in a non-reflective satin-nickel plating ideal for use in front of TV cameras.
- The phantom power system makes possible providing operating DC voltage and transmitting microphone output signals through the same cable.
- Functional rotary Low-cut Switch engineered to select desired frequency response characteristics.
- Pad Switch effective to prevent overload of the microphone impedance translator resulting from the pickup of excessively high level sound source. It reduces the output of the capsule by approximately 8 dB. This allows even the highest sound levels to be reproduced without distortion.

LOCATION OF ITS PARTS



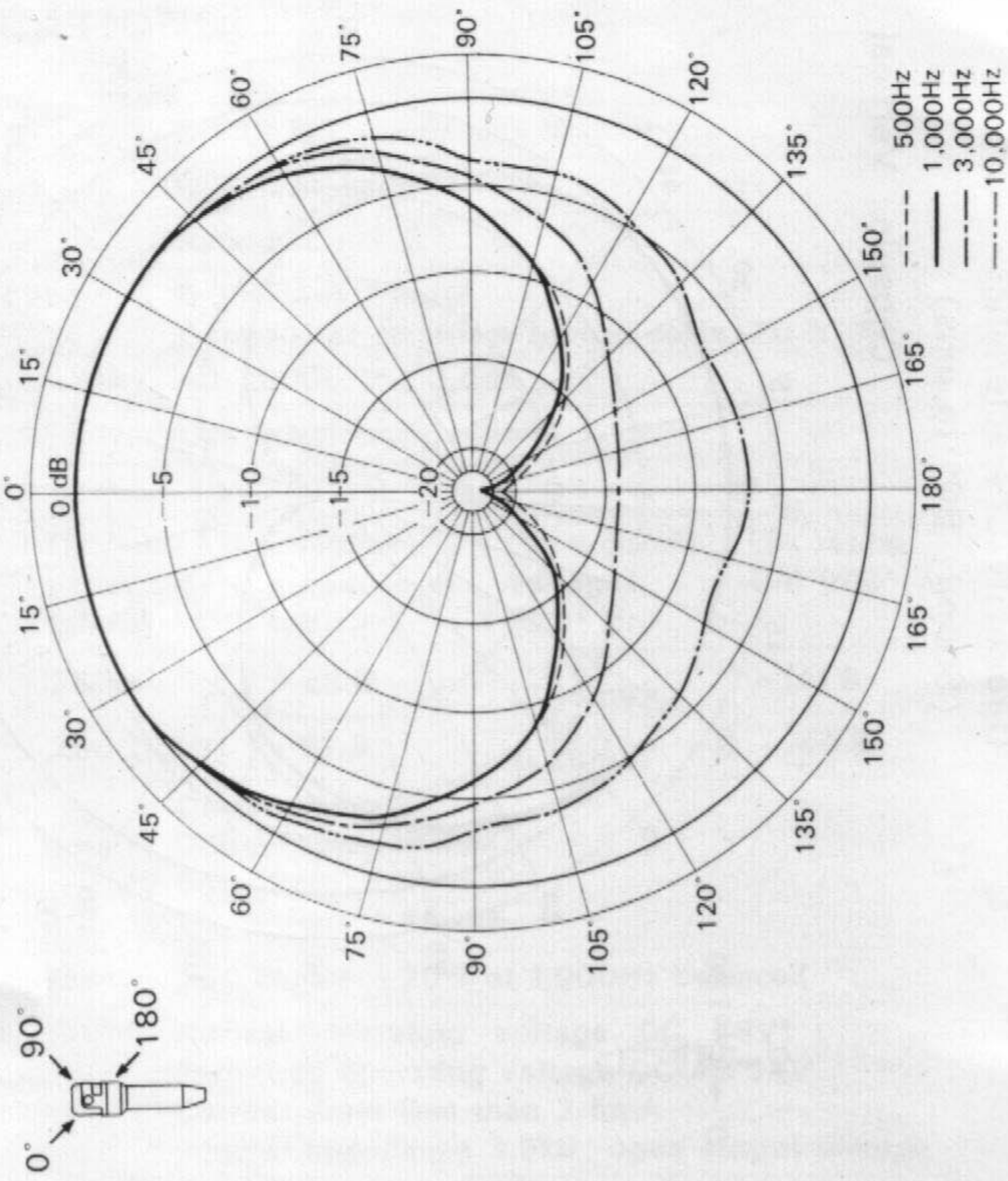
Frequency Response Characteristics
(Sound ; 45° to axis)

Capsule : Inclined



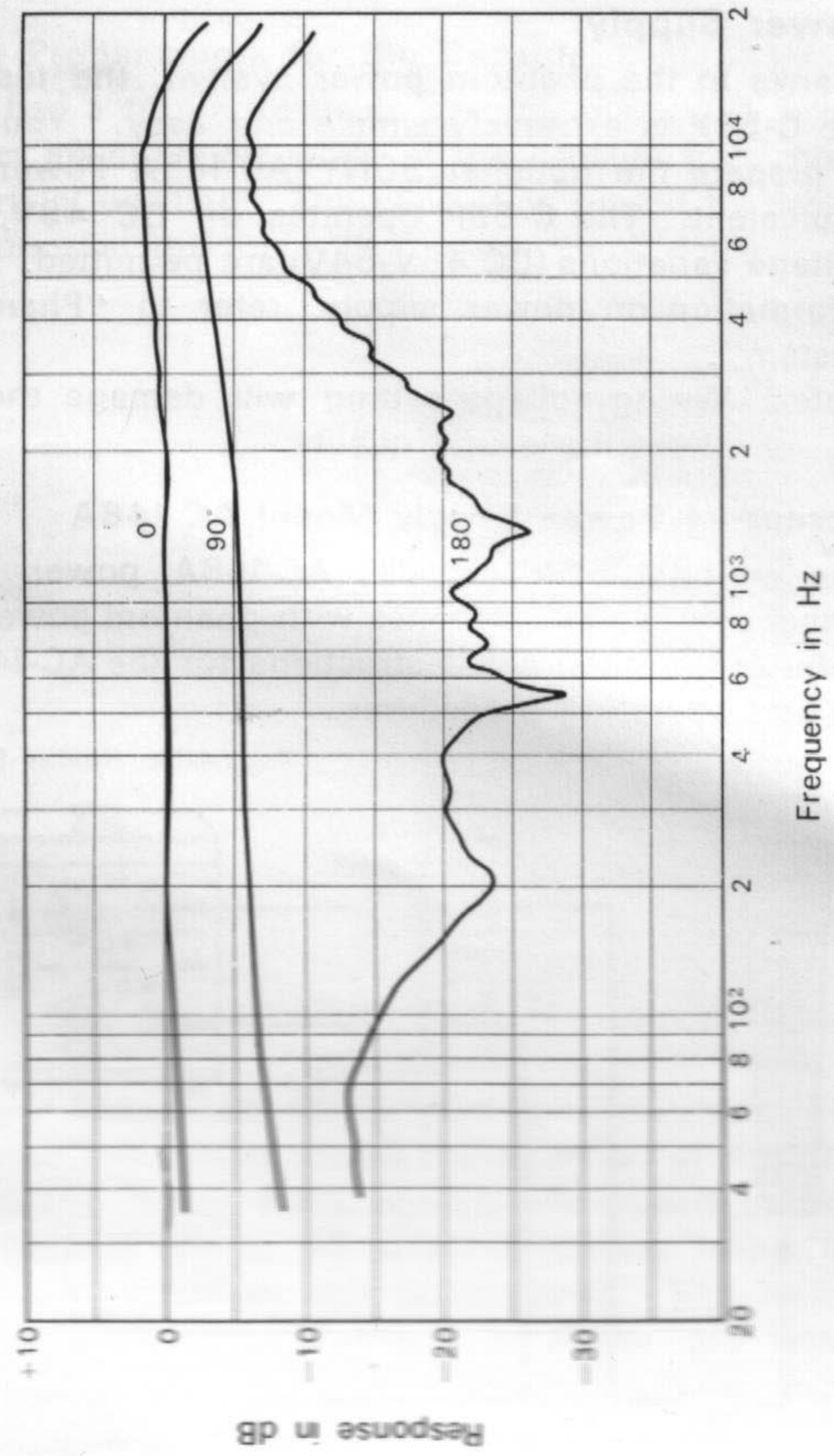
Directivity Characteristics
(Sound ; 45° to axis)

Capsule : 45° Inclined



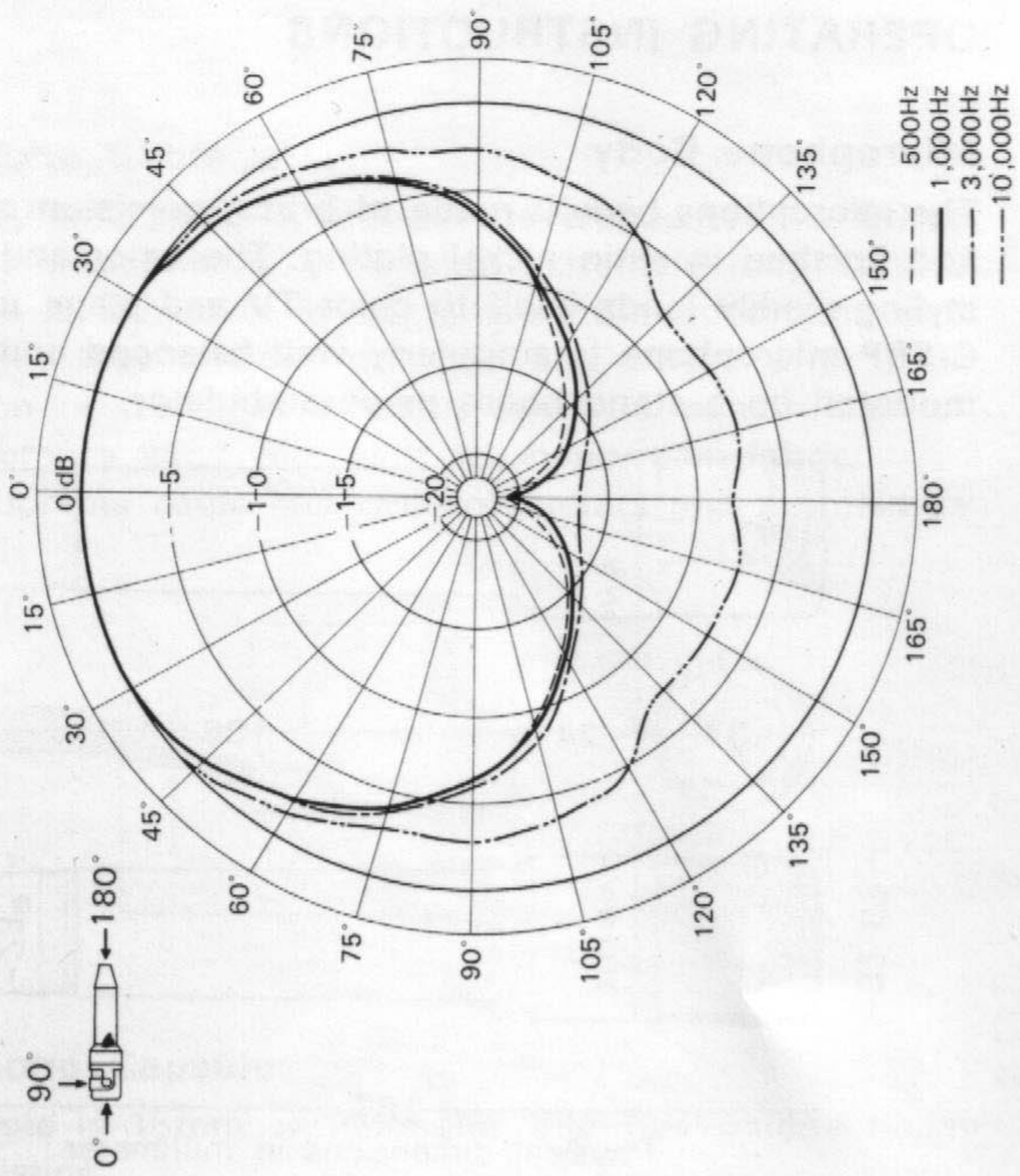
Frequency Response Characteristics
(Sound ; along with axis 0°)

Capsule : Axial



Directivity Characteristics
(Sound ; along with axis)

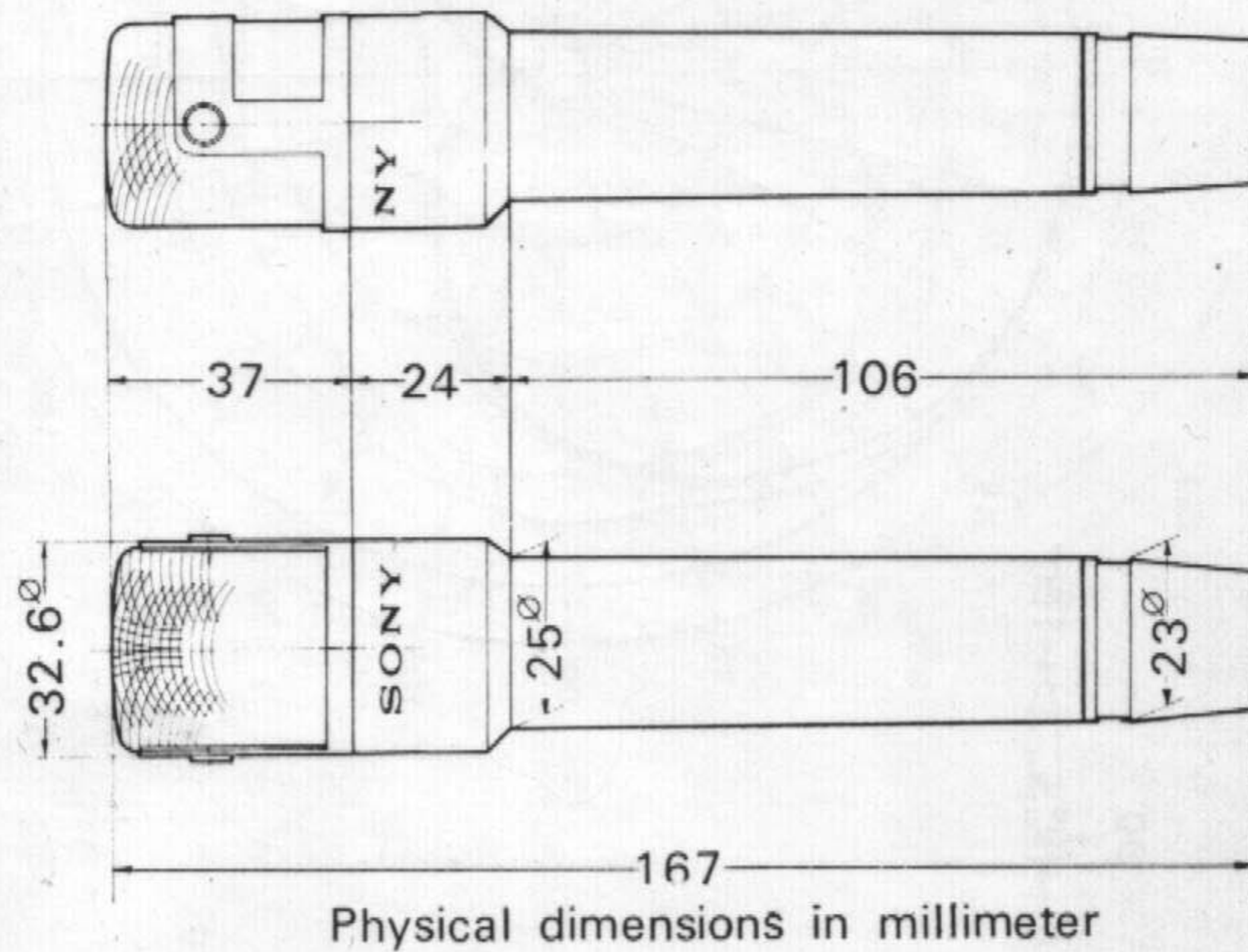
Capsule : Axial



OPERATING INSTRUCTIONS

Microphone Body

The microphone body is made of brass, precision machined and finished in satin nickel plating. The color and modern styling readily lends itself to color TV and stage use. The C-55P microphone is singularly well balanced and may be mounted on a stand boom or perambulator.



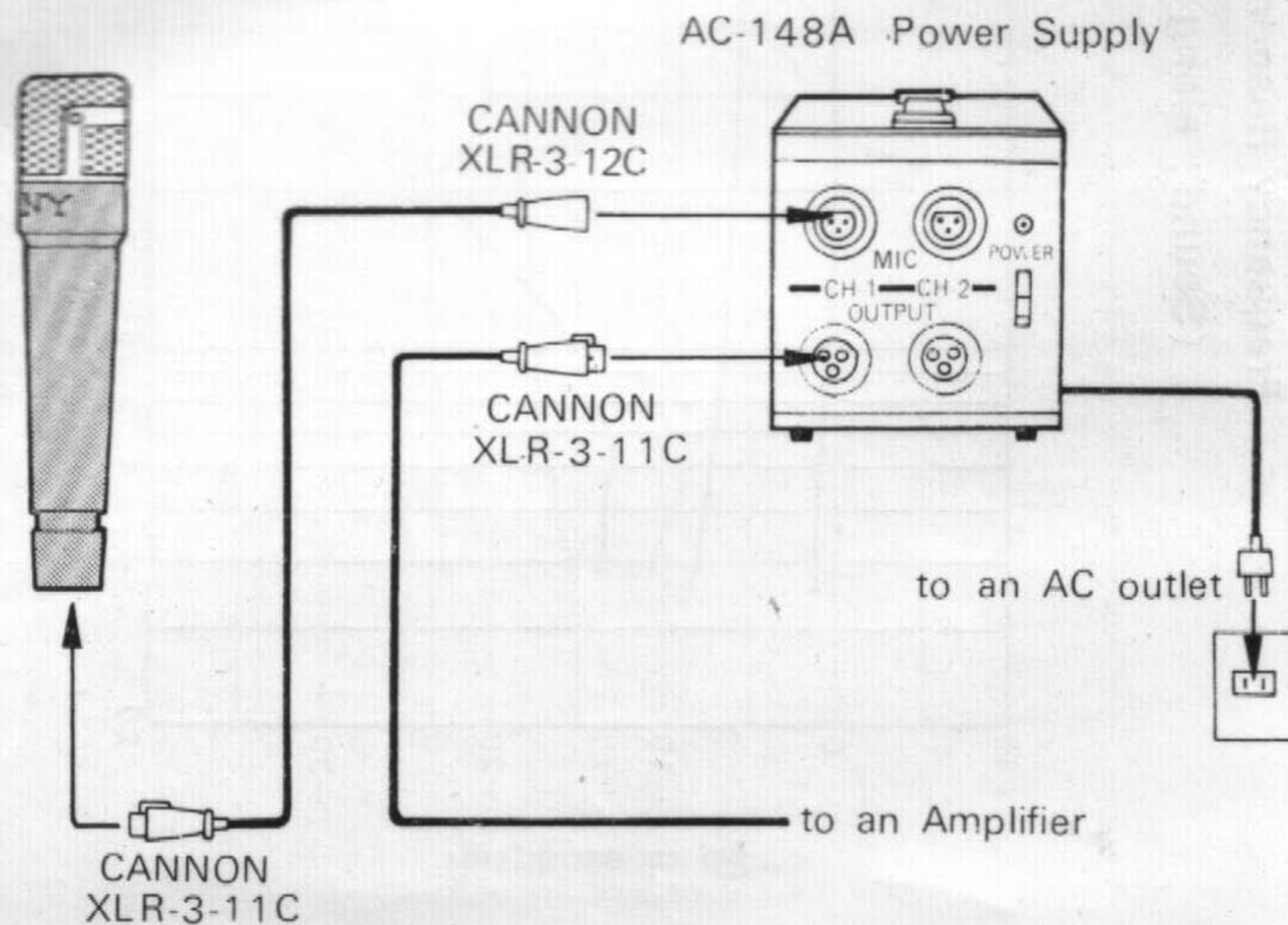
Power Supply

Thanks to the phantom power system, the installation of the C-55P is extremely simple and easy. You have only to prepare the optional SONY AC-148A Power Supply or equivalent. The C-55P operates on DC 48V, but slight voltage variations (DC 48V-54V) are permitted. For further information on power supply, refer to "Phantom Power System".

Note: Wrong voltage setting will damage the C-55P or affect the sound quality.

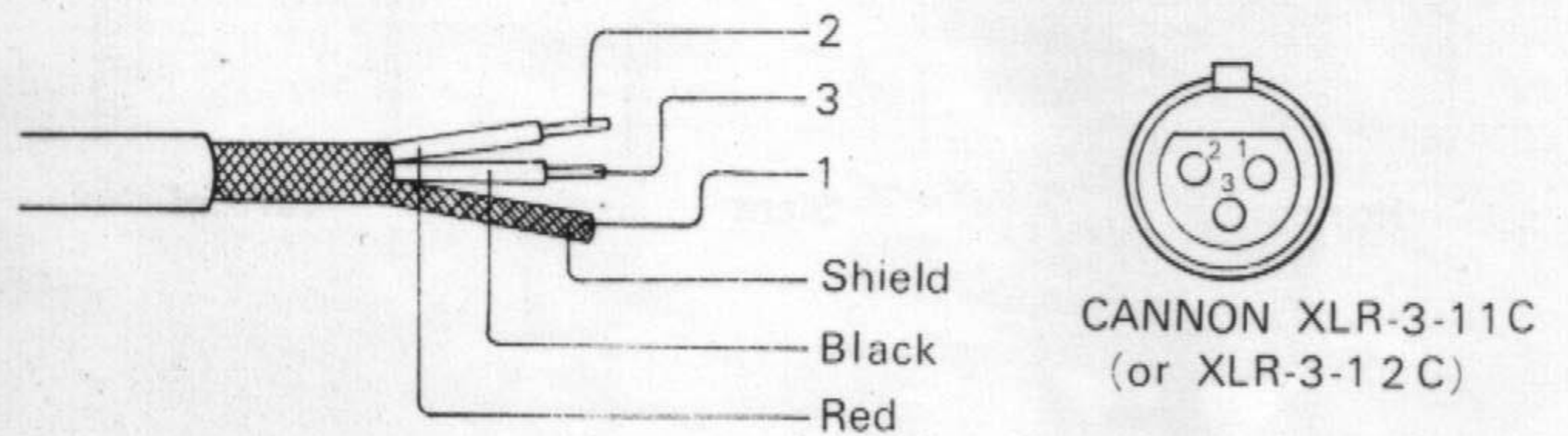
Accessory Power Supply Model AC-148A

The optional SONY model AC-148A power supply will power any two microphones with phantom power capability. Refer to the operating instructions for the AC-148A for set-up and operating procedures.



Microphone Cable

The microphone cable is specially developed for the SONY condenser microphones. It has an extremely long service life due to its flexibility in all temperature conditions and to the fact that it does not curl and stiffen after it is wound on a roll. The cable core is constructed of cadmiumbronze alloy wire with synthetic resin fabric. The microphone cable has two conductors and a shield as illustrated.



Microphone Capsule

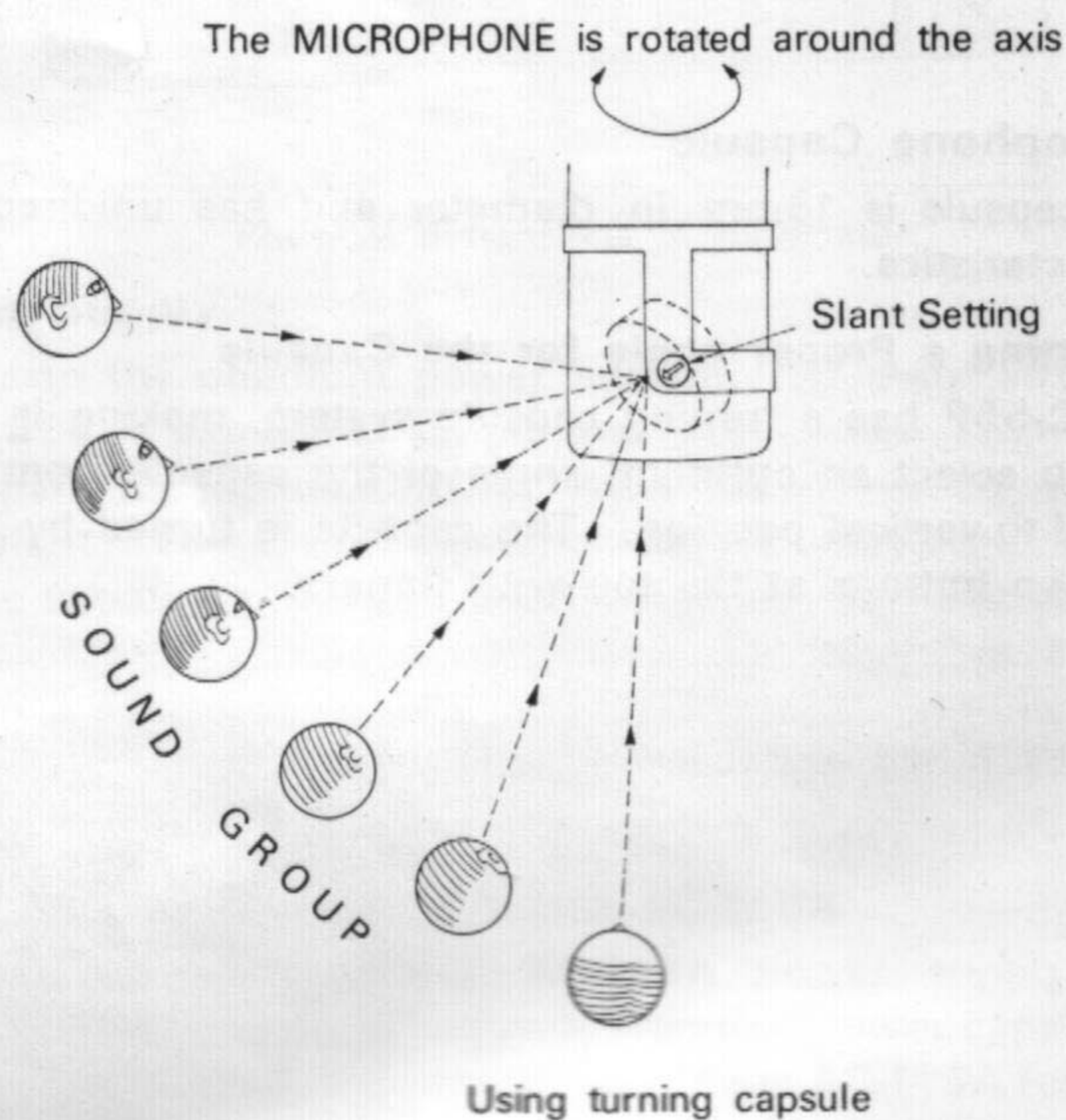
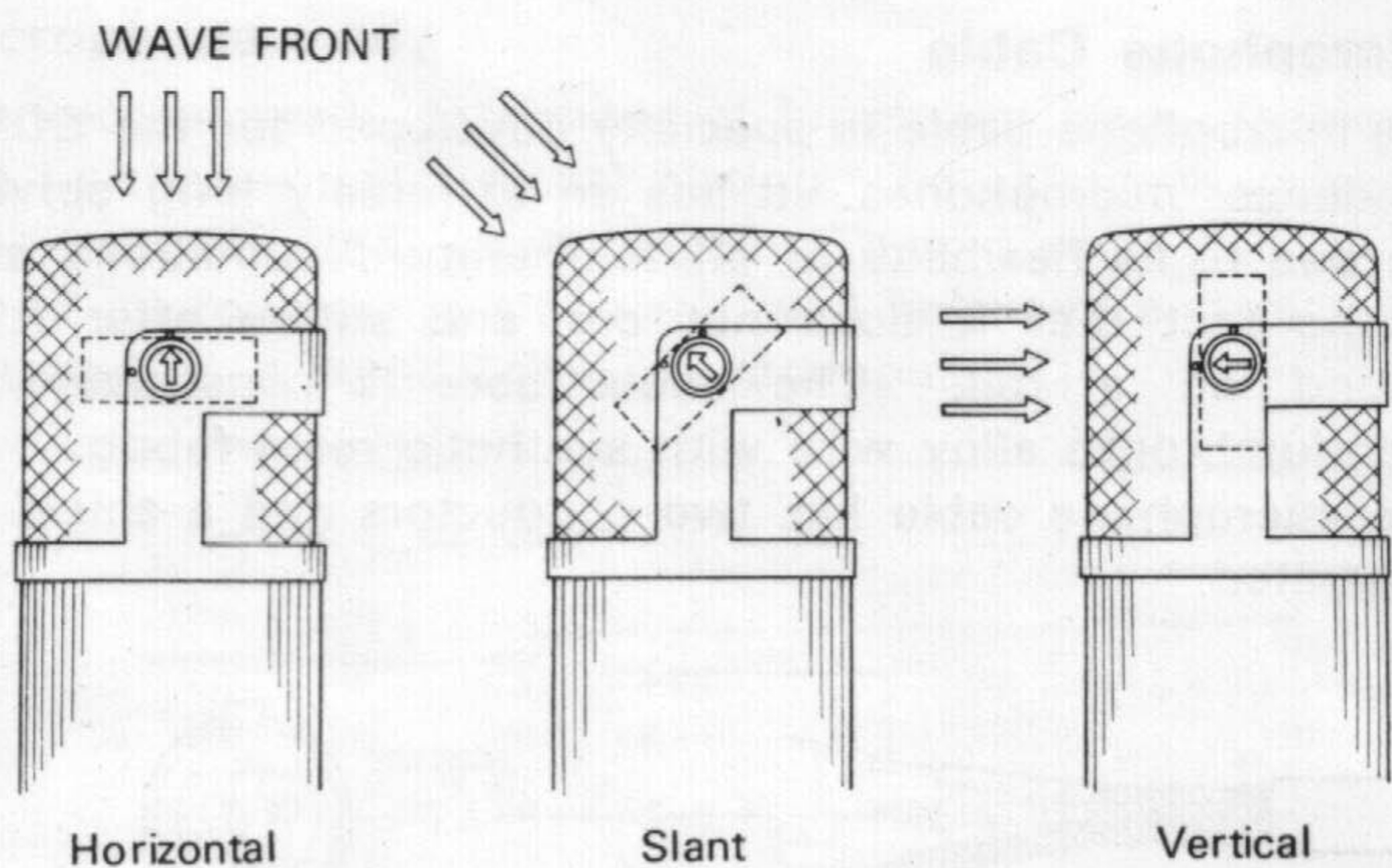
The capsule is 18mm in diameter and has unidirectional characteristics.

Selecting a Proper angle for the Capsule

The C-55P has a turning capsule system, making it possible to select an optimum angle of the capsule from horizontal to vertical position. The capsule is turned by pressing two buttons at the top with fingers.



The capsule is locked as the fingers are released. The arrow mark on the button shows the direction of the capsule. Direct the arrow mark toward the sound source. The arrow mark is set to 45 degrees position when the microphone is mounted on the boom-stand. The microphone can be rotated around the axis of the unit which gives an optimum pick-up for sounds coming from many directions.



ROTARY LOW-CUT SWITCH

The Low-cut Switch located at the end of the Microphone rotates from M to M1 and V1, or vice versa. So, position M, M1, or V1 can be selected to provides the best frequency characteristics for the specific sound pickup circumstances. (See Page 5)

- M position Flat frequency response
- M1 position Slight low frequency attenuation
- V1 position Low frequency attenuation



HIGH-CUT SWITCH

The High-cut Switch is incorporated inside the Sleeve, and set the Switch to "—" position when high frequency attenuation is required. The Switch in "—" position provides no high frequency attenuation. "⌒" position provides roll-off in the frequency range higher than 5,000Hz. (See Page 5)



PAD SWITCH

The Pad Switch is also incorporated inside the Sleeve. Slide down the Sleeve and set the Switch to "-8dB" position when the recording of high sound levels is necessary.

The Switch in "0" position provides normal performance. The Switch in "-8dB" position provides a reduction of 8dB of the Microphone output level.



WIND SCREEN AND SHOCK MOUNTING

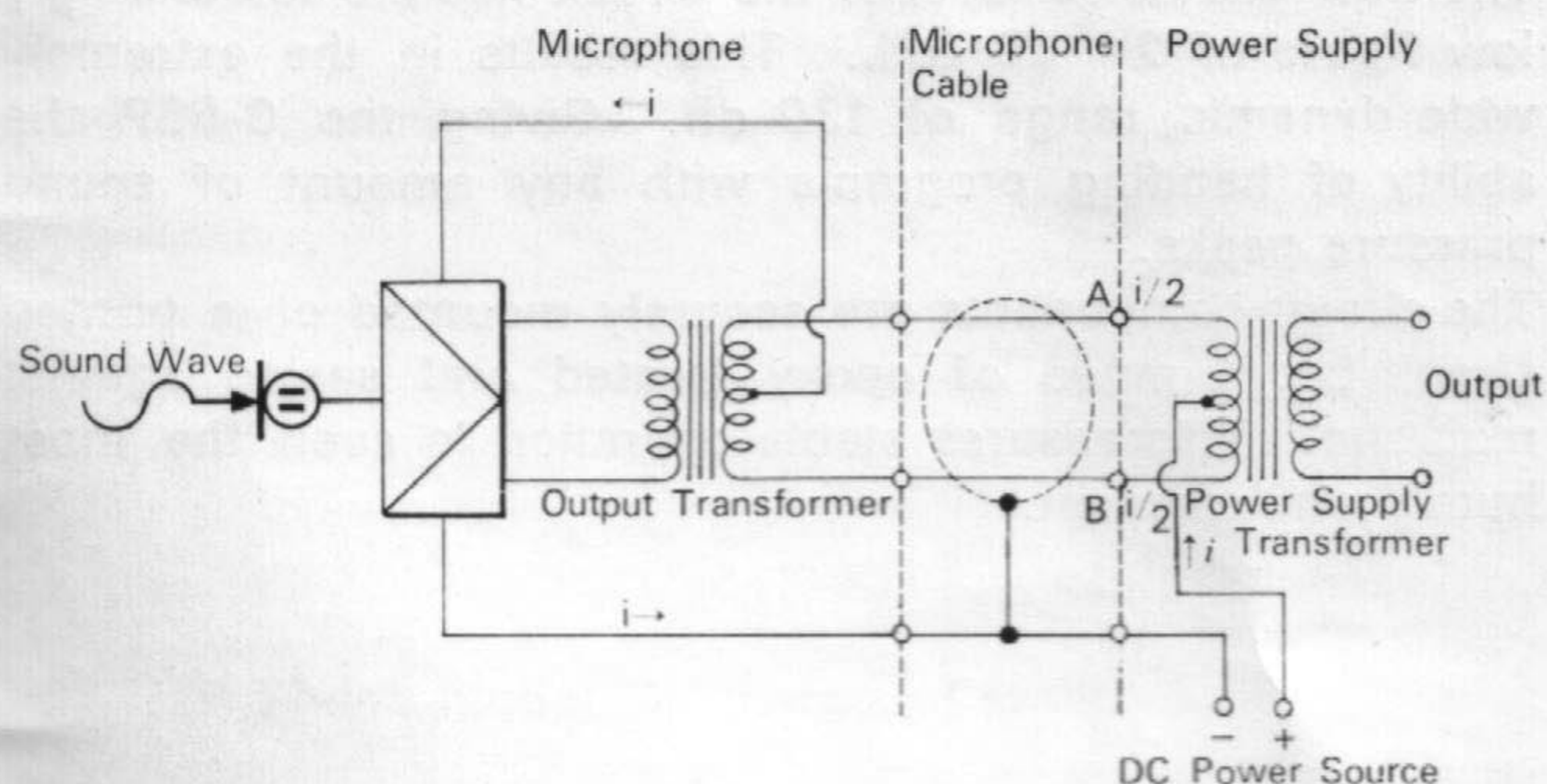
The capsule is housed in a metallic grill which has a wind shielding device, effectively eliminating the effect of wind noise and breathing. The capsule is held in suspension to absorb most of the harmful vibration transmitted through the microphone cable, floors, etc.



TECHNICAL INFORMATION

Phantom Power System

The C-55P is designed for phantom powering. The phantom power system consists of a DC power source, the standard two-conductor microphone cable, and the center-tap transformer of the C-55P (SONY Power Supply AC-148 A is recommended as an optional accessory).



In this form of powering, the supply current (positive potential) is fed to the center tap of the power supply transformer, and is conducted symmetrically via the A and B conductors whose original function is to carry the microphone output signals. Then this voltage is fed to the center tap of the microphone transformer. (See illustration above.) The negative potential is sent through the shield, back to the powering source. The powering DC voltage is completely isolated from the output signal of the microphone, so that it does not affect the signal.

This powering system offers following conveniences:
Interchangeability with other types of microphones

The outlet of the power supply transformer may be connected to any other type of microphone.....condenser, dynamic, ribbon, etc.....without causing noise interference or deterioration of the signal, since no voltage difference occurs between the A and B conductors. Improper polarity connections of A and B conductors will not affect operation of the C-55P.

Simplified microphone set-up

Once the power supply and matching transformer are set-up, the C-55P is as convenient to use as any dynamic or ribbon microphone. There are no complicated power supply connections and no need to worry about a battery failure while the microphone is in use. In permanent or semi-permanent studio installations the phantom power system will be preferable to battery operation.

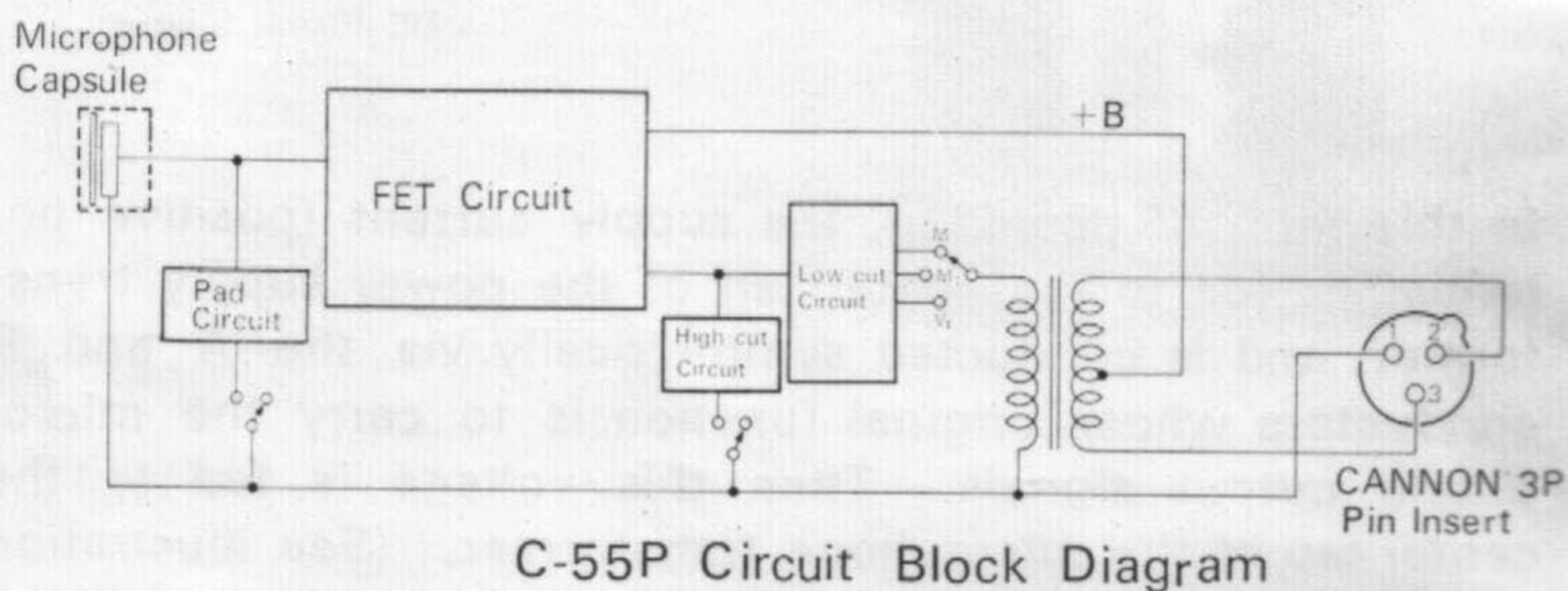
FET CIRCUIT

SONY CORPORATION's semi-conductor division has developed a junction type silicon field effect transistor (FET) specifically for use in condenser microphone.

The FET is part of a source-follower the gate circuit of which has an impedance of approximately 400 megohms; Thus, the electromotive force of the capsule is transmitted with very high fidelity without distortion.

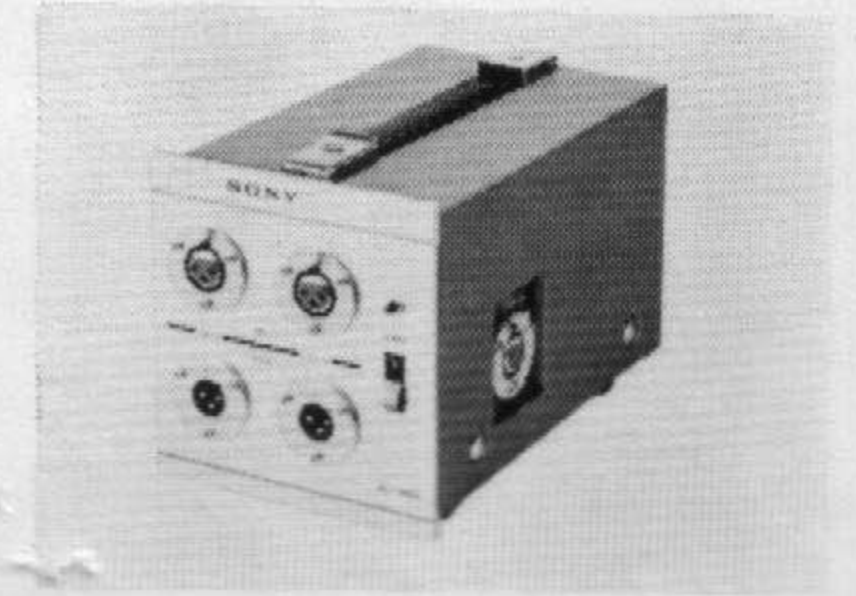
The inherent noise level of the circuit has the astoundingly low figure of 24 dB SPL. This results in the extremely wide dynamic range of 130 dB. Giving the C-55P the ability of handling programs with any amount of sound pressure peaks.

The circuit components are securely mounted on a printed circuit board made of epoxy treated and sealed against moisture. This assures stable operation in even the most humid environment.



RECOMMENDED OPTIONAL ACCESSORIES

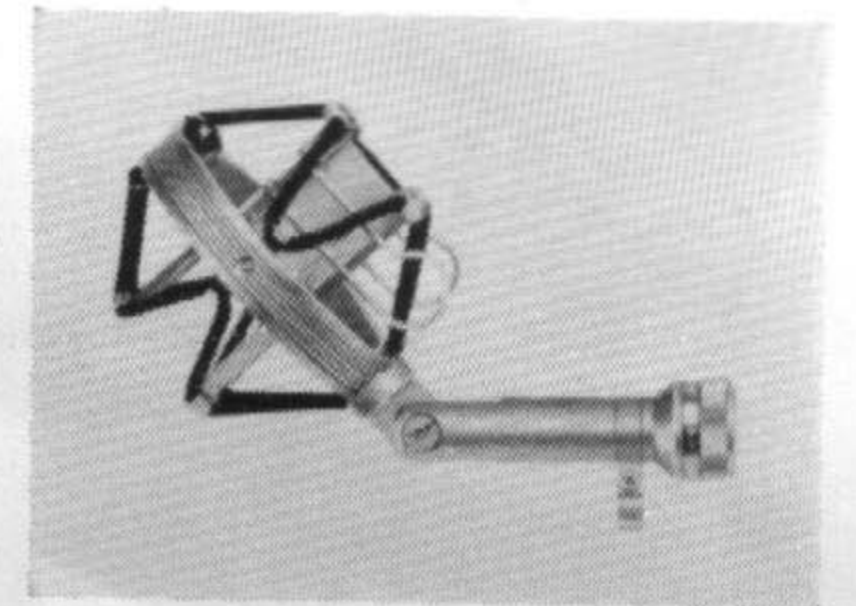
AC-148A Power Supply



A-4 Microphone Stand



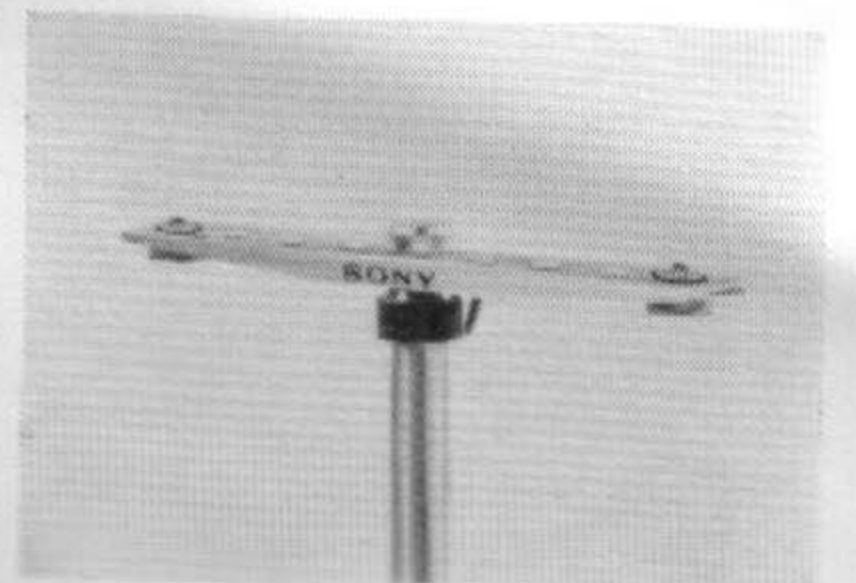
CRS-3P Shock Mount Suspension Cradle



B-101 Boom-Stand



SAD-19P Stereo Arm



SC-18 Carrying Case

