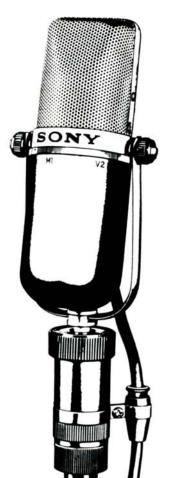
C-37P VARIABLE-DIRECTIVITY CONDENSER STUDIO MICROPHONE Operating Instructions



SONY Corporation, in its constant effort to develop new design and construction techniques, has successfully developed the new world standard for professional condenser microphones.

The SONY Model C-37P meets the stringent demands for broadcast and studio applications where an extremely high quality variable-directivity microphone is required.



FEATURES

Excellent response

The C-37P covers the entire audio frequency range with smooth frequency response and uniform directional characteristics. The use of the unique intermodulation distortion circuit in the FET preamplifier, plus very wide dynamic range and remarkably low inherent noise level assure unexcelled performance.

Unique powering system

The C-37P can be phantom powered from an external DC power supply voltage (DC 48-54 V) without any additional conductors and cables. The phantom power system is an internationally accepted standard which permits complete interchangeability of microphones, regardless of type.

Variable directivity

Uni- or omni-directional characteristics are easily selected by switch.

TABLE OF CONTENTS

SPECIFICATIONS													3
Specifications													
Performance Characteristics				• •			×	٠		•			3
OPERATING INSTRUCTIONS													6
Power Connection													
Microphone Cable Length Adjust	m	en	t.								•		7
Directivity Select Switch													7
Function Select Switch													
Pad Switch													7
Windscreen and Shock-mounting													
TECHNICAL INFORMATION					•								8
Phantom Power System													8
FET Pre-amplifier Circuit													
BLOCK DIAGRAM												•	9

SPECIFICATIONS

Specifications

Type: C-37P Variable Directivity Condenser Microphone

Pre-amplifier: Hybrid IC

Microphone Cable: Approx. 0.2 in. (5.2 mm) dia. 2-conductor

shielded cadmium bronze cable, 20 ft (6.0

m)

Connector: CANNON XLR-3-12C, male type Mounting Thread: USA model — NS 1/4 - 27

general model - PF 1/2 "-14

Dimensions: 1% (47 mm) dia. \times 7% 6" (201mm); refer to the

illustration at the right.

Weight: Approx. 1 lb 2 oz (500 g) without cable

Supplied Accessories: For USA model

Screw driver
Microphone cover
Carrying case
For general model
Screw driver
Microphone cover

Carrying case

Stand adaptor (PF $\frac{1}{2}$ "-14 to NS $\frac{3}{6}$ "-27)

Recommended Power Supply: SONY Model AC-148A

Performance Characteristics

Frequency Response: Refer to Fig. 1 for uni-directional chara-

cteristic; refer to Fig. 3 for omni-direc-

tional characteristics.

Low-cut characteristics: Refer to Fig. 1.

Output Level:

Position of the Pad Switch	Output Impedance	Effective Output Level (dBm) ¹	Open Circuit Output Level (dB) ²				
[0]	250Ω	-49.8	-50 (3.16 mV)	-141.8			
[-8 dB]	250Ω	-57.8	-58 (1.25 mV)	-149.8			

Note: (1) $0 \text{ dBm}=1 \text{ mW}/10\mu \text{ bar}$, 1,000 Hz

(2) $0 dB=1 V/10\mu$ bar (deviation $\pm 2 dB$), 1,000 Hz

(3) EIA Standard SE-105

Directivity Characteristics: Refer to Figs. 2 and 4.

Output Impedance: $250\Omega \pm 20\%$ (balanced)

Power Supply: Standard operating voltage DC48-54 V (internal impedance of 3.4 k Ω ; Current drain less than 2.5 mA)

Noise Level:

S/N ratio greater than 50 dB (1,000 Hz, 1 μ bar)

Inherent noise less than 24 dB SPL (0 dB = $2 \times 10^{-4} \mu$ bar) Wind noise*¹ less than 40 dB SPL

Induction noise of external magnetic field*2 5 dB SPL/m gauss

- *1 Wind noise is the value measured by applying a wind velocity of 6.6 ft/second from all directions to the microphone. The mean value is taken and converted to the equivalent input sound level. (0 dB = $2 \times 10^{-4} \mu$ bar)
- *2 The external magnetic field induction noise is measured with the microphone placed in the alternating magnetic field of 50 Hz, 1 milligauss. The maximum noise value is taken and converted to the equivalent input sound level. (0 dB = $2 \times 10^{-4} \mu$ bar)

Maximum sound pressure input level*3: 154 dB SPL

*3 This is the maximum input level which produces less than 1% wave distortion at the output with 1,000 Hz, and less than 1% intermodulation distortion at the output signal with 70 Hz-7 kHz.

Dynamic Range: Approx. 130 dB

Acceptable Preservation Temperature: -4°-140°F (-20°-60°C)

Proper Operating Temperature: 32°-140°F (0°-60°C)

Design and specifications subject to change without notice.

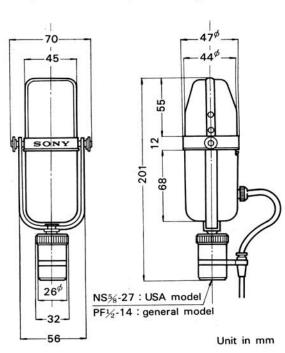


Fig. 1: Frequency Response Characteristics (uni-directional)

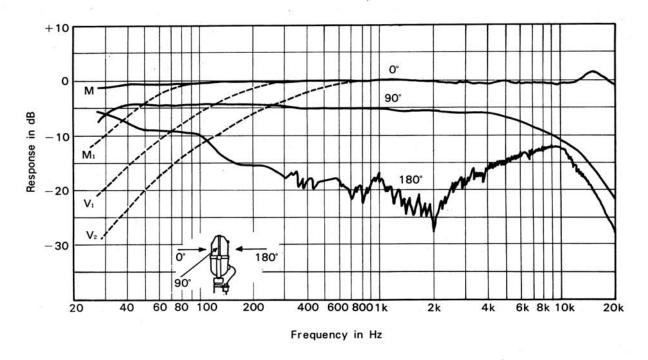


Fig. 2: Directivity Characteristics (uni-directional)

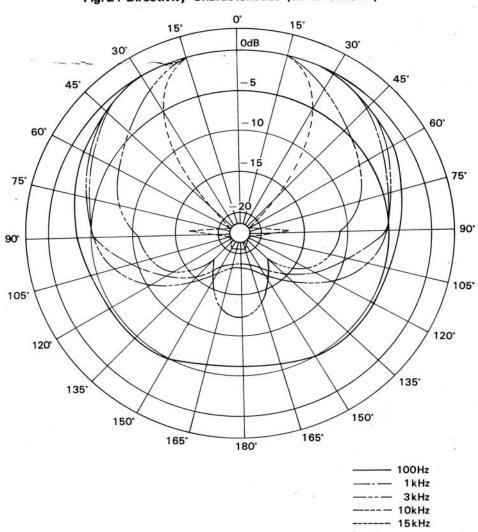


Fig. 3: Frequency Response Characteristics (omni-directional)

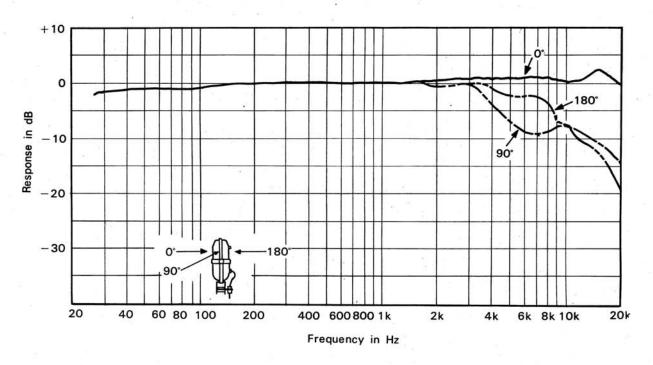
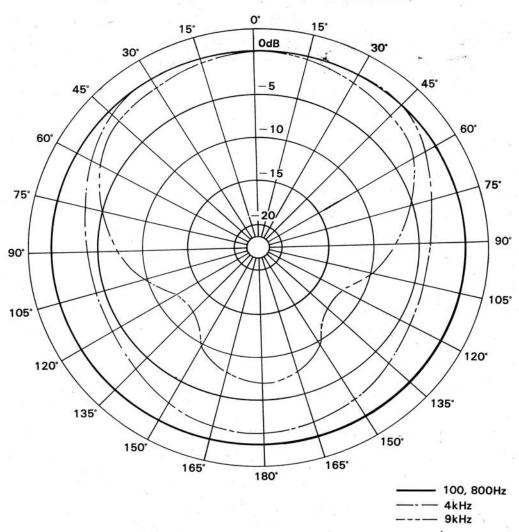
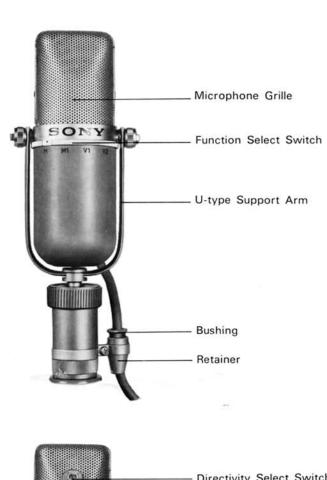


Fig. 4: Directivity Characteristics (omni-directional)



OPERATING INSTRUCTIONS

Operating the C-37P requires no special knowledge, but this manual should be read carefully so that the microphone's full capabilities may be realized.



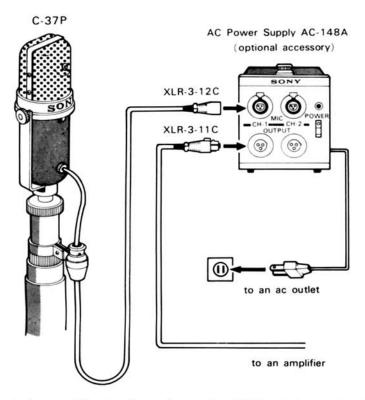


Power Connection

The C-37P can be operated from an external power supply voltage using the SONY AC-148A Power Supply (or equivalent). Refer to the illustration below and the "Phantom Power System" section on page 8.

Optional accessory Power Supply AC-148A

The optional SONY Model AC-148A power supply will directly power any two microphones with phantom power capability (DC 48-54 V). The AC-148A will power up to twelve microphones when adapted for studio use. Refer to the operating instructions of the AC-148A for set-up and operating procedures.



Due to the use of Phantom Power System, the C-37P must have balanced output connections. Therefore, use balanced-type cable for extending cable between the power supply and the C-37P.

Microphone Cable Length Adjustment

When the microphone angle is changed, adjust the microphone cable to its proper length.

- 1. Pull out the bushing from the retainer.
- 2. Adjust the cable length.
- Reinsert the bushing into the retainer.



Directivity Select Switch

Directivity of the C-37P may be switched from cardioid to omnidirectional by setting the directivity select switch (located on the rear cage) to either the "U" or "N" position with the supplied screwdriver. The "U" represents the uni-directional (cardioid) characteristics; the "N", the non-directional (omnidirectional) characteristics.

Note: To avoid undesirable microphone output noise caused when the directivity select switch is moved, reduce the microphone amplifier level or select the directivity pattern before connecting the microphone.



Function Select Switch

The function select switch has four functions

SYMBOL	FUNCTION
М	Flat (full range) frequency response
l√l,1	Slight low frequency attenuation
V1	Low frequency attenuation
V2	Severe low frequency attenuation (roll-off)

M, M1, V1, V2 can be selected to provide the best frequency response characteristics for the specific sound pickup circumstances. Refer to the Fig. 1 on page 4.



Pad Switch

To prevent overload of the impedance translator resulting from the pickup of extremely high level sound sources, the pad switch (located on the center-rear of the microphone) reduces the output level of the microphone capsule by approx. 8 dB. This allows even the highest sound levels encountered in practice to be reproduced without distortion.

In general, set the switch to [0] position. When the recording

of high sound level is necessary, set the switch to [-8 dB] position. The output level of the microphone is reduced by approx. 8 dB.



Windscreen and Shock-mounting

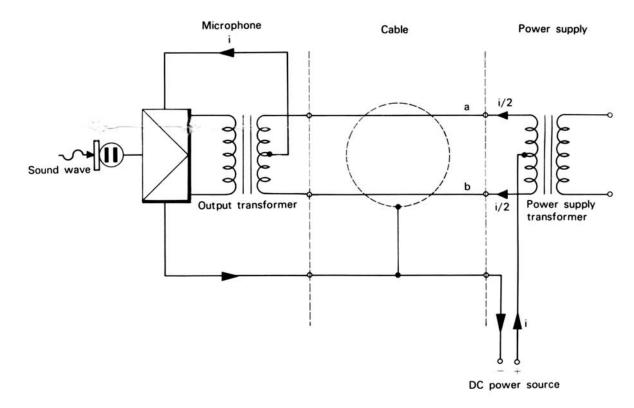
The microphone grille is equipped with a windscreen which surrounds the capsule. The capsule is fully shock-mounted to eliminate the pickup of vibrations transmitted through the microphone stand.

TECHNICAL INFORMATION

Phantom Power System

The C-37P utilizes the standard phantom power (DC 48-54 V) system. The phantom power system consists of a DC power source, the standard two-conductor shielded microphone cable and center-tap transformer of the C-37P. The SONY AC Power Supply Model AC-148A 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 signal. Then, this voltage is fed to the center-tap of the microphone transformer. (Refer to the illustration below.) The negative potential is sent through the shield. The phantom powering DC voltage is completely isolated from the audio signal of the microphone, and has no adverse effect on the signal. This powering system offers the following advantages.



Interchangeability with other types of microphone

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-37P.

Simplified microphone set-up

Once the powering system is set-up, the C-37P is as convenient to use as any dynamic or ribbon microphone.

FET Pre-amplifier Circuit

The FET circuit of the C-37P assures extremely low intermodulation and total harmonic distortion. This circuit provides superior linearity and dynamic range. Intermodulation distortion remains less than 1% at the sound pressure levels up to 154 dB SPL*, and total harmonic distortion remains less than 1% at 1 kHz. This circuit has an equivalent inherent noise level of less than 24 dB SPL. Accordingly, an extraordinary dynamic range of 130 dB is obtained.

All circuit components are mounted on an epoxy-tetron printed board which is completely moisture-proof and is protected by a dust cover. This assures stable operation even in the most humid operating conditions.

* 70 Hz and 7 kHz; 4:1 Ratio. Applied to input of impedance translator at a level which is equivalent to capsule output at 154 dB SPL.

BLOCK DIAGRAM

