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MICROPHONES and ACOUSTIC DEVICES

**SUBJECT:**

# Data Sheet

DECEMBER 1954

**MODEL "530" SLENDYNE MICROPHONE****OMNI-DIRECTIONAL DYNAMIC  
Dual-Impedance**

**General:** The Model "530" Microphone is a slender moving coil microphone, built to provide wide-range reproduction of music and voice and featuring an omni-directional pickup pattern. The microphone has complete versatility and reliability for outdoor and indoor use and may be used in the following manner:

1. Mounted in swivel adapter on a conventional floor or desk stand.
2. Quick disengage feature permits the microphone to be removed from the swivel adapter for use as a hand, audience participation, interviewer microphone, etc.
3. Equipped with adjustable lavalier cord and belt clip, the microphone may be used as a wearable unit by lecturers, broadcast announcers, etc.
4. Readily accessible impedance switch permits quick change from the high impedance setting common in P.A. work, to the low impedance setting for use with long lines, broadcast equipment, etc.
5. When equipped with the accessory switch adapter Model A500 (separately available), the unit will serve in applications where an "ON-OFF" switch is necessary at the microphone.

The smooth frequency response and attending faithful reproduction is largely due to a newly designed diaphragm attached to a sensitive coil suspended in a magnetic structure. The use of high efficiency magnetic materials and specially designed magnetic circuits has made it possible to develop this small microphone and still achieve maximum operating efficiency.

The microphone is ruggedly built to withstand hard usage and is unaffected by temperature and humidity variations. The 20 foot broadcast-quality, shielded, two conductor cable is supplied with an XL-3-11 Cannon microphone plug.

The "530" meets the most exacting requirement for maximum quality and minimum size. A self adjusting swivel adapter is supplied with the microphone and permits the microphone to be tilted through 90° from vertical to horizontal, making it simple to aim the microphone at the source of sound.

An adjustable lavalier cord and a belt clip are supplied which facilitate the use of the microphone for public speakers and lecturers; teachers and instructors; demonstrators and all similar applications where freedom of both hands is necessary. The lavalier cord clips easily to the microphone, can be readily fastened around the wearer's neck, and quickly removed.

**Applications:** Model "530" is ideal for high quality public address, theater stage sound systems, and all recording applications where an omni-directional microphone may be desired. Model "530" is especially recommended for "interview" type use where the "hand-a-bility" of the microphone is important. The microphone may be used for either a single performer, a dialogue, a group, an orchestra—practically all individual and group applications. (For studio broadcasting, TV use, and similar applications where utmost in quality is desired, Model 525 Concert Line Studio Microphone is recommended. In reverberant locations where feedback might be a problem, or for distance pickup, a directional microphone, such as Model 300 Gradient (Bi-directional) or Model 333 Ultra Cardioid (Uni-directional) should be employed.)

**Installation:** The Model "530", when used with the swivel adapter, has a standard  $\frac{5}{8}$ "-27 thread and may be mounted on any conventional desk, banquet or floor stand. Adapter Stand Couplers are available at no charge for  $\frac{1}{2}$ " pipe thread or  $\frac{5}{8}$ "-24 thread. (Write Shure Brothers, Inc.) To avoid A.C. hum induction when long lines are used, care should be taken that the cable does not parallel A.C. power lines for long distances.

**Connections:** The Model "530" Microphone is a dual-impedance microphone. It may be connected directly to a 50-250 ohm line, or high impedance input. Selection of these impedances is accomplished by removing the impedance switch cover plate on the microphone and changing the position of the switch. The switch positions are marked "L" for low impedance (50-250 ohms) and "H" for high impedance (35,000 ohms). The center position of the impedance switch is the "OFF" position.

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The microphone cable plug is the Cannon XL-3-11 plug. The cable shield is connected to the No. 1 pin; the black conductor is connected to the No. 2 pin; and the white conductor to the No. 3 pin.

The No. 1 pin of the microphone receptacle is connected to the microphone case. Pins No. 2 and No. 3 are connected to the internal elements and the microphone may be used with a balanced line. In the low impedance position, the Model "530" may be connected directly to a standard low or medium impedance input amplifier (Fig. A-1). For use with high impedance amplifiers connect as shown in Fig. A-3.

The low impedance position is recommended where long cable lengths are required or under conditions of severe hum disturbance. To achieve maximum freedom from hum disturbance and internal cable noises, Broadcast quality two conductor shielded cable (such as supplied with the microphone) should be used. In this case, the shield of the cable must be connected to Pin No. 1 of the microphone plug. The two "hot" conductors should be connected to Pins No. 2 and No. 3. The permissible cable length is practically unlimited, since neither response nor level is appreciably affected. For use with high impedance amplifiers, Shure Model A86A Cable-Type Transformer is available for coupling the low impedance line to the amplifier input as shown in Fig. A-2. The double winding primary of the Shure Model A86A Cable-Type Transformer permits coupling a 50-250 ohm line to the high impedance input.

The high impedance position in the Model "530" microphone may be used with any high gain amplifier with an input impedance of 100,000 ohms or more (See Fig. A-3). To connect the amplifier plug to the two conductor shielded cable supplied with the microphone, connect the shield lead and the black lead together to the ground terminal of the amplifier plug, and connect the white lead to the "hot" terminal of the amplifier plug.

The maximum recommended length of cable between the microphone and the amplifier when used in the high impedance position is 25 feet. Longer cable may be used with a loss of approximately 3 db at 5,000 c.p.s. for each additional 25 feet of cable. In using longer cable, the two conductor shielded cable furnished with the microphone should be replaced with a single conductor shielded cable. When this is done, the shield of the cable must be connected to Pins 1 and 2 of the microphone plug and the center or "hot" conductor must be connected to Pin No. 3.

The shield, chassis or amplifier ground should be securely connected to a water pipe or similar ground to prevent shock hazard during operation of amplifying system.

When used with amplifiers using the grid leak type of bias at the input tube, it may be desirable to use .01 mfd. condenser between the microphone and the input grid circuit.

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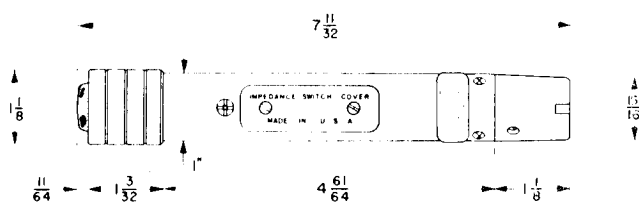
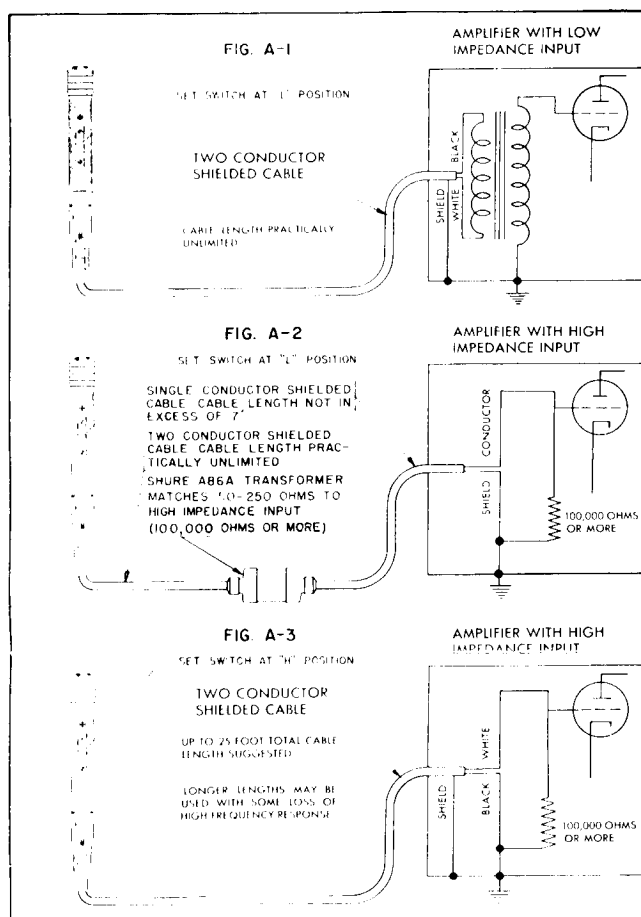


FIG. B

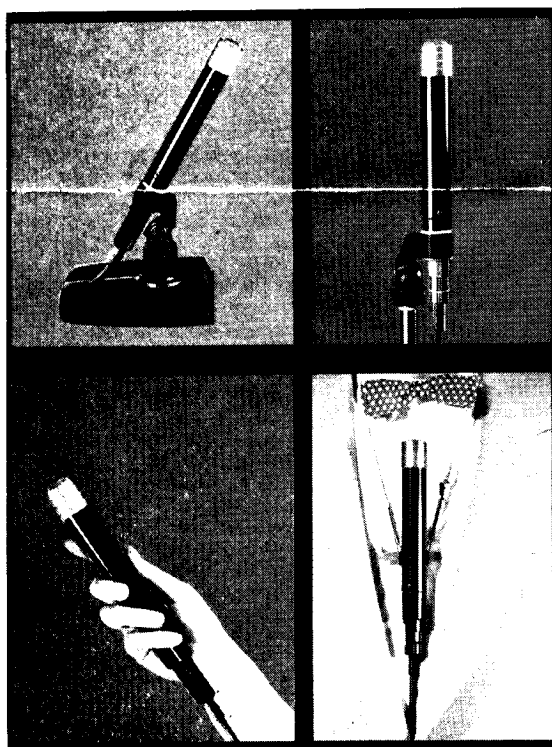


FIG. C

**Operation:** No special precaution beyond ordinary care is necessary in the operation of the Model "530" Microphone. It will operate efficiently and dependably under all ordinary conditions in hot and cold climates. To retain the full strength of the highly efficient permanent magnet and to maintain alignment of the structure, dropping or other severe mechanical shocks should be avoided.

The swivel adapter fits conventional floor stands, desk stands and the Shure S33B Desk Stand. The microphone may be easily removed from this adapter for use as a hand microphone. Additional versatility in the use of the microphone is obtained by using the lavalier cord in applications where freedom of both hands is necessary. Fig. C illustrates use of these accessories. An accessory "ON-OFF" switch Model A500 is available for ready installation in place of the "impedance switch cover." It requires no soldering or re-wiring.

## Specifications

### 1000 C.P.S. Response

#### Model 530 "L" Position

Open circuit Voltage Level	— 83 db*
Loaded with 150 ohms	— 90 db*
Power Level into 150 ohms	— 61 db**
RETMA Microphone Rating $G_M$ (Sensitivity)	— 154.7 db***

#### Model 530 "H" Position

Open Circuit Voltage Level	— 61 db*
Loaded with 100,000 ohms	— 63 db*
RETMA Microphone Rating $G_M$ (Sensitivity)	— 157 db***

(\*) 0 db = 1 volt per Microbar.

(\*\*) 0 db = 1 milliwatt with 10 Microbars.

(\*\*\*) RETMA Standard SE-105, August 1949.

### Recommended Load Impedance:

Model 530 "L" position 50-250 ohms.

Model 530 "H" position 100,000 ohms or more.

MODEL 530	
Code Word	RUDEF
Net Wt. Less Cable	1/2 lb.
Packaged Weight	2 7/8 lbs.
Cable	20 foot, Two-Conductor
Dimensions	See Fig. B
Finish	Black Anodize Body Gold Anodize Cap

**Guarantee:** Each microphone is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from factory, provided all instructions are complied with fully. In case of damage, return the microphone to the factory for repairs. Our guarantee is voided if the microphone is subjected to accident or abuse or if the case is opened.

## MODEL 530 Architect's Specifications

The microphone shall be a moving coil type microphone with a frequency range of 50 to 15,000 c.p.s. This unit shall have an omni-directional horizontal polar characteristic. The microphone shall be equipped with a two-position impedance change switch for adjusting the microphone rating impedance to 150 ohms or 40,000 ohms. The microphone rating  $G_M$  (sensitivity) at 1000 c.p.s. shall be within  $\pm 3$  db of the following levels.

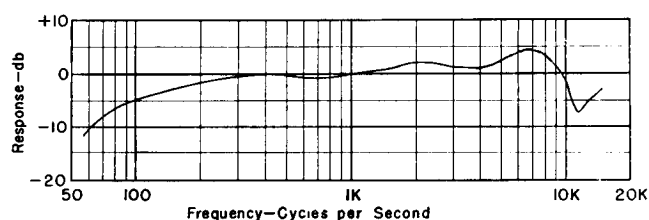
"L" Position of switch — 154.7 db

"H" Position of switch — 157 db

RETMA Standard SE-105 August 1949.

The microphone shall be provided with a swivel adapter adjustable through 90° from vertical to horizontal, a lavalier cord, a belt clip and a detachable Cannon cable connector capable of connecting to a two-conductor shielded cable.

The microphone swivel adapter will mount on a stand having 5/8"-27 thread. The overall dimensions shall be 7 11/32"  $\pm$  1/4" in length and 1 1/8" in diameter.



Response-Frequency Characteristic Model 530 Microphone

FIG. D