

**SHURE**

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MICROPHONES AND ELECTRONIC COMPONENTS

AREA CODE 312/328-9000 • CABLE: SHUREMICRO

DATA SHEET MODEL 430SL "COMMANDO"**OMNIDIRECTIONAL CONTROLLED MAGNETIC PAGING MICROPHONE**

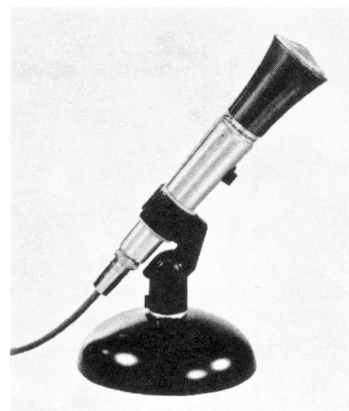
General: The Model 430SL "Commando" Microphone is a pressure operated unit using the balanced armature controlled magnetic principle. This microphone features high output, smooth response, extreme ruggedness and ability to withstand severe moisture and temperature conditions. The Model 430SL is a dual impedance unit. It features a built-in switch to control both the microphone circuit and external relay or control circuit. The switch is a press-to-talk locking or non-locking type unit. The Model 430SL Microphone is furnished with the S38B Desk Stand and A25B Swivel Adapter, ideal complement for placement of microphone on table top, desk top, or other flat surfaces. The A25B Swivel Adapter also fits conventional floor stands equipped with $\frac{5}{8}$ "-27 thread. The A25B Swivel Adapter permits tilting the microphone through 90° from vertical to horizontal making it simple to aim the microphone at the sound source. The microphone comes equipped with a 15 foot (4.6 m) 3-conductor (1 conductor shielded) non-removable cable.

Applications: The Model 430SL Microphone is designed for public address, call systems and is especially suited to background music page systems. The Model 430SL is also very suitable for mobile and fixed station use in Police, Fire, Utility, Forestry and Transportation Services including radio, telephone or amateur use and similar applications.

The Model 430SL connected low impedance is recommended for use where long cable lengths are required or when encountering severe hum disturbances due to high impedance operation. The Model 430SL Microphone, when connected for low impedance operation, may be fed into a standard low impedance amplifier or into an amplifier with high impedance input. In the latter case, Shure Model A95A Line Matching Transformer is available for coupling the low impedance line to the input of high impedance amplifiers. The Model 430SL is shipped connected high impedance and has high output and may be used with practically all installations where only a moderate length up to 50 feet (15.2 m) of cable is required. Applications requiring low impedance operation require a change of connections from high impedance to low impedance. (See paragraph on impedance selection.) The microphone is unusually rugged and is practically immune to severe moisture and temperature conditions.

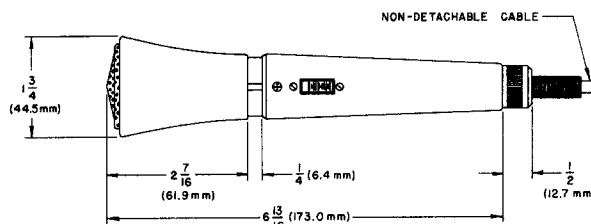
Connections: The Model 430SL Microphone may be connected directly to a 50-250 ohm line, or high impedance input. See paragraph on IMPEDANCE SELECTION. In the low impedance position the microphone may be connected directly to a standard low or medium impedance input amplifier. The low impedance position is recommended where long cable lengths are required or under conditions of severe hum disturbance. To achieve maximum freedom from hum disturbance, a high quality, 3-conductor (1 conductor shielded) cable (such as supplied with the microphone) should be used. The permissible cable length is practically unlimited, since neither response nor level is appreciably affected. For use with a high impedance amplifier, the Shure Model A95A Line Matching Transformer is available for coupling the low impedance line to the amplifier input. The double winding primary of the transformer permits coupling a 50-250 ohm line to the high impedance input. If additional lengths of cable are desired with the use of the 430SL, a 3-conductor (1 conductor shielded) cable is required to extend both the relay and microphone circuits.

If the relay circuit is not used, a single conductor shielded cable may be used to extend only the microphone circuit. The Model 430SL comes equipped with a push-to-talk locking or non-locking switch. It is a double pole single throw leaf-type switch which controls both the microphone circuit and an external relay or control circuit (See Fig. B). Connect all leads to the proper terminals of the equipment. (See equipment manual.) When switch button is released in the non-locking position (Normal "off" Position), the switch controls



the microphone by shorting out the hot lead of the microphone cartridge and attached hot lead of the shielded conductor to shield or ground. At the same time, it disables the external relay or control circuit by presenting an open circuit.

In certain amplifiers, the grid bias is obtained by having a grid leak between grid and cathode. When such amplifiers are used with any controlled magnetic or dynamic-type microphone, it may be necessary to include a coupling condenser between the microphone and the input grid. (See Equipment Manual). The condenser should be .01 mfd or larger. When used near a radio transmitter, use the minimum length of cable consistent with placement requirements. The shield and the chassis should be securely grounded to a water pipe or similar ground to eliminate shock hazard to the user.



OVERALL DIMENSIONS

FIGURE A

Impedance Selection: Model 430SL is shipped connected as a high impedance unit. To change to low impedance:

1. Remove the three #2-32 Phillips Head screws holding the bottom chrome base to the upper part of the microphone.
2. Gently, pull down the bottom chrome base approximately one inch.
3. Reach in with long-nose pliers or tweezers, and remove the pin jack (white lead) from the terminal marked "H." Install this pin jack on terminal pin marked "L." (See Figure C.)
4. Position switch bracket so that mounting hole is aligned with clearance hole of base. Screw in long #2-32 screw (temporarily), securing switch bracket firmly.

5. Re-assemble in part by inserting microphone into base, until it butts against long screw. (This is to insure the flat portion of microphone slips underneath switch bracket.) The assemblage, thus far, should be held together firmly in one hand.
6. With other hand, remove the long #2-32 screw and complete total insertion of microphone into base by pressing microphone into base. Position microphone so that mounting holes of microphone are aligned with clearance holes in base.
7. Re-insert long #2-32 screw into bracket hole and install remaining short #2-32 screws in place. Tighten all screws securely.

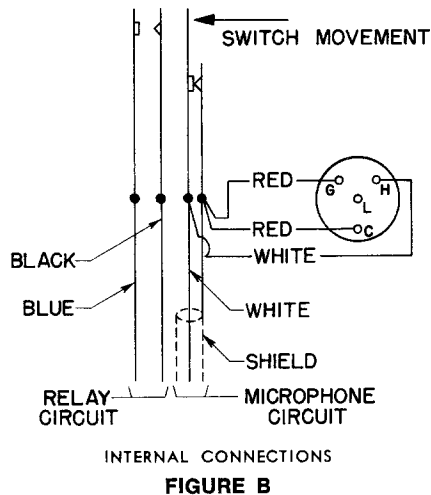


FIGURE B

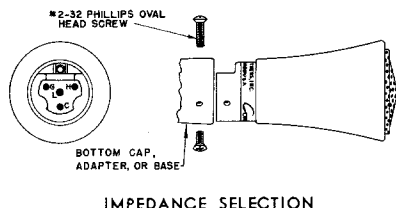


FIGURE C

Operation: The Model 430SL has a built-in switch to control the operation of the microphone and equipment. The switch is a push-to-talk locking or non-locking unit. For momentary contact, depress switch button and release. For locking, depress switch button and slide upward. In some applications, the locking feature is not desired and may be eliminated in the following manner:

1. Remove the three #2-32 Phillips Head screws holding chrome base to the microphone.
2. Gently pull chrome base away from microphone with wires attached to provide partial clearance of switch blade assembly.
3. Gently move switch blade assembly downward and outward from chrome base to clear switch button. DO NOT DISCONNECT SOLDERED LEADS.
4. Remove switch button and re-insert into slot in switch blade so that the locking shoulder of the button is toward bottom of slot in switch blade.
5. Insert switch blade assembly with button in place into hole of base. Position switch bracket so that mounting hole is aligned with clearance hole of base. Screw in long #2-32 screw (temporarily), securing switch bracket firmly.
6. Re-assemble (in part) by inserting microphone into base until it butts against long screw. (This is to insure that flat portion of microphone slipped underneath switch bracket.) The assemblage thus far should be held together firmly in one hand.
7. With other hand, remove the long #2-32 screw and complete total insertions of microphone into base, by pressing microphone into base. Position microphone for alignment of mounting holes to that of clearance holes in base.
8. Re-insert long #2-32 screw into bracket hole, and install remaining short #2-32 screws in place. Tighten all screws securely.

No special precautions beyond ordinary care is necessary in the operation of the 430SL Microphone. It will operate efficiently and dependably under all ordinary conditions in hot or 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.

ARCHITECT'S SPECIFICATIONS

The microphone shall be Shure Model 430SL or equivalent. A balanced armature Controlled Magnetic type microphone with a frequency range of 60 to 10,000 Hz. This unit shall have an omnidirectional polar characteristic. The microphone shall be dual impedance having rated impedance of 150 ohms and 15,000 ohms.

The microphone output shall be:

- High —52 dB (0 dB = 1 volt per microbar)
- Low —52 dB (0 dB = 1 milliwatt per 10 microbars)

The microphone rating Gm (sensitivity) at 1,000 Hz shall be within 3 dB of the following levels:

- Low Impedance Connected —145 dB
- High Impedance Connected —143 dB
- EIA Standard SE-105, August, 1949

The microphone shall be provided with an "On-Off" switch, a swivel adapter adjustable through 90° from vertical to horizontal, and a 15 foot (4.6 m) three-conductor (one conductor shielded) cable attached to the microphone. The microphone swivel adapter shall mount on a stand having a 5/8"-27 thread. The overall dimensions shall be 7 3/8" (187.3 mm) in length and 1 3/4" (44.5 mm) in diameter.

FURNISHED ACCESSORIES

- Swivel Adapter: Model A25B positive action swivel to fit 5/8"-27 stand thread.
- Switch Locking Plate: for keeping switch in "On" position.
- Desk Stand: Model S38B

OPTIONAL ACCESSORIES

- Line Matching Transformer Model A95A
- Quick Disconnect Isolation Unit Model A45

REPLACEMENT COMPONENTS

- Controlled Magnetic Cartridge Model R4M

Guarantee: This Shure product is guaranteed in normal use to be free from electrical and mechanical defects for a period of one year from the date of purchase. Please retain proof of purchase date. This guarantee includes all parts and labor.

Shipping Instructions: Carefully repack the unit and return it prepaid to the factory. If outside the United States, return the unit to your dealer or Authorized Shure Service Center for repair. The unit will be returned to you prepaid.

SPECIFICATIONS

Frequency Response Characteristics:

Smooth and uniform from 60 to 10,000 Hz. Free from undesirable peaks.

Polar Pattern:

Omnidirectional.

Voltage Sensitivity:

	IMPEDANCE	HIGH	150 to 250 ohms
1,000 Hz. response	—52 dB*	—73 dB*	
Open circuit voltage level			
Power level into 200 ohm		—52 dB**	
EIA Microphone Rating	—143 dB***	—145 dB***	
Gm (sensitivity)			

*0 dB = 1 Volt per Microbar

**0 dB = 1 Milliwatt per 10 Microbar

***EIA Standard SE-105 August, 1949

Cable:

Non-detachable 15 foot (4.6 m) 3-conductor (1 conductor shielded)

Finish:

Satin chrome and black.

Dimensions:

See Figure A.

Net Weight:

1 Pound (Microphone only with 15 foot cable).

Packaged Weight:

2 7/8 Pounds (964 grams)