

SHURE**MICROPHONES AND ELECTRONIC COMPONENTS**

AREA CODE 312/328-9000 • CABLE SHUREMICRO

DATA SHEET**MODELS 410, 410S,
510C AND 510S
"HERCULES"**

High-Impedance Controlled Magnetic Microphones

General: Model "410" and "510" series Controlled Magnetic Microphones are pressure operated magnetic units using the Balanced-armature Controlled Magnetic principle. The microphones have high impedance, high output, smooth response and a semi-directional pickup characteristic. The stability of these microphones is assured by unique control of the reluctance of the magnetic system. High impedance is obtained without the use of a transformer. The Model "510" and "410" series microphones have a sturdy die-cast case.

The models 510C and 510S are suitable for placement on a table top, desk top, or other flat surface; they fit conveniently in the palm of the hand for use as a hand microphone. The microphones are provided with a stand adapter having a $\frac{5}{8}$ "-27 thread which fits the conventional floor stand. The adapter attaches to the base of the microphone by using the #8-32 machine screw provided. Model 510S has a built in switch to control the microphone circuit. Model 510C has no switch.

The Models 410 and 410S microphones have an adapter with a $\frac{5}{8}$ "-27 thread assembled to the microphone and are especially designed to be used with a flexible gooseneck mounting or customized installation where a concealed cable is desired. The model 410S has a built in switch to control the microphone circuit. Model 410 has no switch.

Each of the microphones in the "410" and "510" series is provided with a 7-foot (2.1m) fabric-covered, single conductor, shielded cable.

Applications: Models "410" and "510" series microphones provide the ruggedness, the clear reproduction, and the high output needed in many applications. These microphones may be used in fixed and mobile public address systems (including carnivals, circuses, parking lots, paging systems, etc.), communications, dictating machines, portable recording machines, home recording, language lab systems and high quality inter-communication. These microphones are unusually rugged and are practically immune to severe moisture and temperature conditions—which makes them especially ideal for use in tropical and coastal areas.

Also, the Models "410" and "510" series microphones may be used in applications requiring a soft speaker or receiver.

Connections: The microphones may be used with any public address amplifier or other amplifier with an input impedance of 100,000 ohms or more.

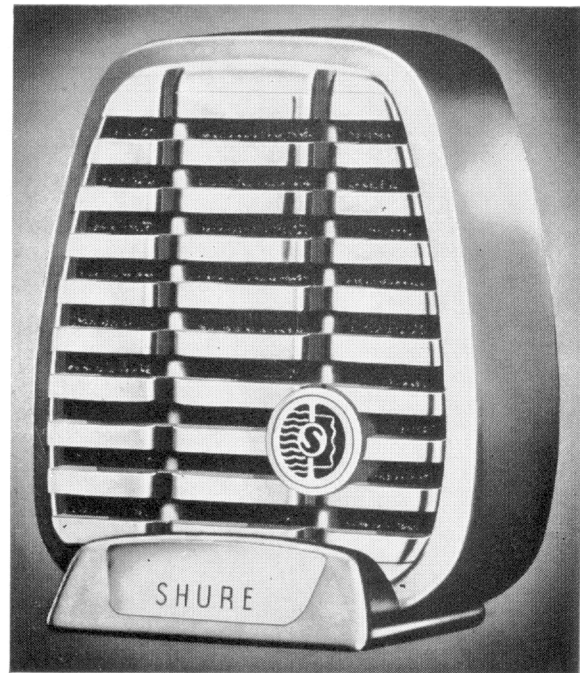
The inner or "hot" conductor of the cable should be connected to the grid of the first tube in the amplifier across a load resistance of 100,000 ohms or more. The shield should be connected to the chassis or amplifier ground. The shield, chassis or amplifier ground should be securely grounded to a water pipe or similar ground to prevent shock hazard during operation of the amplifying system. Cable lengths longer than 25 feet (7.6m) will be accompanied by some loss of high frequency response.

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. The condenser should be .01 mfd. or larger.

Operation: The Models 410S and 510S "Hercules" Controlled Magnetic Microphones have a built-in switch to control the microphone circuit. The switch is a press-to-talk locking or non-locking switch, having long-life phosphor-bronze blades with fine silver contacts. For momentary contact, depress switch button and release. For locking, depress switch button and slide button upward.

In some applications the locking feature is not desired and may be eliminated in the following manner: Remove the two 4-40 oval head self-tapping screws at the rear of the microphone and remove rear cover. Remove the two 5-40 oval head machine screws at the side of the microphone (beneath switch button) and remove the switch blade assembly. **DO NOT DISCONNECT SOLDERED LEADS.**

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. Insert switch button through hole in case and re-assemble the switch blades to the microphone and replace back



cover. All machine screws used in assembly must be securely tightened.

No special precautions beyond ordinary care are necessary in the operation of the Models "410" and "510" series microphones. They will operate satisfactorily under ordinary conditions in hot, humid, and cold climates. To retain the field strength of the permanent magnet and to maintain alignment of the structure, dropping or other severe mechanical shocks should be avoided.

SPECIFICATIONS

	MODELS 410 and 410S	MODELS 510 and 510S
Length	4 $\frac{3}{32}$ (104mm)	3 $\frac{3}{32}$ (81.8mm)
Width	2 $\frac{1}{8}$ (68.3mm)	2 $\frac{1}{8}$ (68.3mm)
Thickness (body)	1 $\frac{7}{8}$ (36.5mm)	1 $\frac{7}{8}$ (36.5mm)
Finish	Gray	Metallic Green
Net Weight (with 7' (2.1m) cable)	1 lb. (454g)	$\frac{7}{8}$ lb. (397g)
Shipping Weight	1 $\frac{1}{2}$ lb. (680g)	1 $\frac{1}{2}$ lb. (680g)

Voltage Sensitivity: 52.5 db below 1 volt per microbar when loaded with 100,000 ohms or more. This is equivalent to 2.3 millivolts r.m.s. per microbar across 100,000 ohms or more.

Microphone rating $G^m = -142$ db.

RTMA Standard 105, August, 1949.

Frequency Response: 100 to 7000 c.p.s.

Recommended Load Impedance: 100,000 ohms or more.

Guarantee: Each microphone is guaranteed to be free from electrical and mechanical defects for a period of one year from date of shipment from the 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 case is opened.