

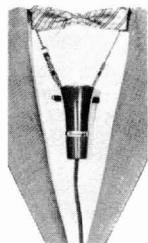
**SHURE**

MICROPHONES AND ELECTRONIC COMPONENTS

® AREA CODE 312/328-9000 • CABLE: SHUREMICRO

DATA SHEET**MODELS 415, 420, 425, AND 430 "COMMANDO" SERIES**

MODEL 415



MODEL 420



MODEL 425



MODEL 430

OMNI-DIRECTIONAL CONTROLLED MAGNETIC MICROPHONES**GENERAL**

The Commando Series Microphones are designed for voice reproduction and are ideal for tape recording, fixed or mobile public address systems, amateur communications, and similar uses. The microphones are pressure operated units using the balanced armature controlled magnetic principle. They feature high output, smooth response, extreme ruggedness and ability to withstand severe moisture and temperature conditions.

Model 415 is a high-impedance microphone for connection to amplifiers, mixers or tape recorders with high-impedance microphone inputs.

The Models 420, 425 and 430 are dual-impedance microphones with the option of low-impedance for connection to microphone inputs rated at 25 to 200 ohms, or of high-impedance for connection to high-impedance microphone inputs.

Model 415 can be used as a handheld unit or can be stand-mounted with the furnished A25B swivel adapter. The A25B has standard $\frac{5}{8}$ "-27 threads and is adjustable through 90° from vertical through horizontal. The Model 415 has an attached 2.1m (7 ft) single-conductor shielded cable.

Model 420 is designed specifically for applications requiring a small wearable microphone. It is furnished with a detachable lavalier cord and clip assembly and a small-diameter, extremely flexible, attached 6.1m (20 ft) two-conductor shielded cable. Model 420 allows the wearer full use of both hands used as a lavalier microphone or can be used as a handheld microphone removed from the lavalier assembly.

Model 425 has a $\frac{5}{8}$ "-27 threaded base permitting easy gooseneck mounting. It is furnished with a small-diameter attached 2.1m (7 ft) two-conductor shielded cable. This microphone is also available with an attached gooseneck in a 6 in. length as Model 425-G6, in a 12 in. length as Model 425-G12, and in an 18 in. length as Model 425-G18.

Model 430 is supplied with a detachable 4.6m (15 ft) two-conductor shielded cable with an Amphenol MC2M connector on the microphone end. It has a press-to-talk locking or non-locking switch and can be used handheld or stand-mounted in the furnished A25B swivel adapter.

ARCHITECTS' SPECIFICATIONS

The microphone shall be Shure Model (415, 420, 425, 430) or equivalent balanced armature controlled magnetic type microphone with a frequency response of 60 to 10,000 Hz. This unit shall have an omnidirectional polar characteristic. The microphone shall be dual impedance (except Model 415—high impedance only) with a rated impedance of 150 ohms for connection to microphone inputs rated at 25 to 200 ohms and High for connection to high-impedance microphone inputs. The microphone output shall be:

Low	- 54 dB
(0 dB = 1 milliwatt with 10 microbars)	
High	- 55 dB
(0 dB = 1 volt per microbar)	

MODEL 415 — The microphone shall be provided with a swivel adapter adjustable through 90° from vertical to horizontal and suitable for mounting on a stand having a $\frac{5}{8}$ "-27 thread. The microphone shall be provided with a 2.1m (7 ft) single-conductor shielded cable. The overall dimensions shall be 173.0 mm (6-13/16 in.) in length and 44.5 mm (1 $\frac{3}{4}$ in.) in diameter.

MODEL 420 — The microphone shall be provided with a lavalier cord and clip assembly for use as a wearable microphone. The microphone shall be provided with a 6.1m (20 ft) two-conductor shielded cable. The overall dimensions shall be 93.7 mm (3-11/16 in.) in length and 44.5 mm (1 $\frac{3}{4}$ in.) in diameter.

MODEL 425 — The microphone shall be provided with an adapter having a $\frac{5}{8}$ "-27 thread. The microphone shall be provided with a 2.1m (7 ft) two-conductor shielded cable. The overall dimensions shall be 118 mm (4-21/32 in.) in length and 44.5 mm (1 $\frac{3}{4}$ in.) in diameter.

MODEL 430 — The microphone shall be provided with an On-Off switch and a swivel adapter adjustable through 90° from vertical to horizontal and suitable for mounting on a stand having a $\frac{5}{8}$ "-27 thread. The microphone shall be provided with a detachable 4.6m (15 ft) two-conductor shielded cable with an Amphenol MC2M connector on the microphone end. The overall dimensions shall be 177 mm (7 in.) in length and 44.5 mm (1 $\frac{3}{4}$ in.) in diameter.

IMPEDANCE SELECTION

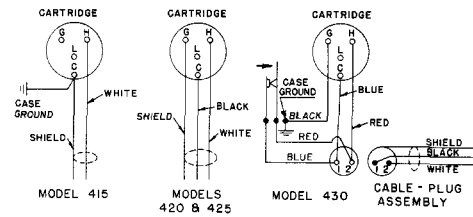
The dual-impedance Models 420, 425, and 430 are shipped connected for high-impedance operation.

To change Models 420 and 425 to low impedance:

1. Remove the three Phillips Head screws holding the bottom cap or adapter to the microphone.
2. Gently pull down the cap or adapter.
3. Reach in with longnose pliers or tweezers and remove the pin jack (WHITE lead) from the terminal marked "H". (See Figure A.) Install this pin jack on terminal pin marked "L".
4. Reassemble bottom cap or adapter to microphone, making sure that the cable strain relief is well seated in the bottom cap and that the screws are tightened securely.

To change Model 430 to low impedance:

1. Remove the two Phillips Head screws located below the nameplate and a third of the way around from the switch.
2. Loosen the screw between the switch and the nameplate just enough to pull off the top part of the microphone. This screw should remain attached to the switch bracket inside the chrome base of the microphone.
3. Reach in with longnose pliers or tweezers and remove the pin jack (RED lead) from the terminal marked "H". (See Figure A.) Install this pin jack on terminal pin marked "L".
4. Reassemble the bottom chrome base to the upper part of the microphone. Position switch bracket so that top part of microphone slides easily into chrome base. Tighten all screws securely.



INTERNAL CONNECTIONS
FIGURE A

CONNECTIONS

Model 415 — high impedance only: The WHITE lead is the "hot" cable conductor for connection to high-impedance inputs; the shield is connected to the chassis or amplifier ground.

Models 420, 425, and 430 — dual impedance: For balanced-line low-impedance connections, the BLACK and WHITE leads are the "hot" conductors; the shield is connected to the chassis or amplifier ground. For unbalanced low-impedance or high-impedance connections, the WHITE lead is the "hot" conductor; the BLACK lead and shield are connected to the chassis or amplifier ground.

The low-impedance connection is recommended where long cable lengths are required or under conditions of severe hum disturbance. The permissible cable length is practically unlimited since neither response nor level is appreciably affected. Shure Model A95 Series Line Matching Transformers are available for use in those cases where a low-impedance microphone line is desirable but the associated amplifier has a high-impedance input. These transformers provide a proper impedance match between a 25 to 200 ohm microphone line and a high-impedance input and are available with various input and output connectors.

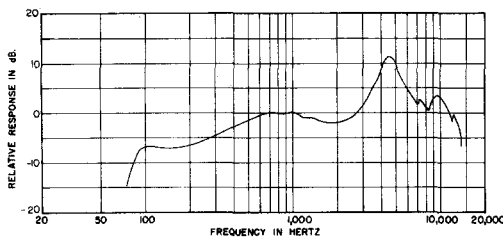
SPECIFICATIONS

Type

Controlled Magnetic

Frequency Response

60 to 10,000 Hz (See Figure B)



FREQUENCY RESPONSE
FIGURE B

Impedance

Model 415 — Microphone impedance is high for connection to high-impedance microphone inputs.

Models 420, 425, 430 — LOW: Microphone rating impedance is 150 ohms (200 ohms actual at 1kHz) for connection to microphone inputs rated at 25 to 200 ohms. HIGH: Microphone impedance is "High" for connection to high-impedance inputs. Microphones wired for high impedance as supplied.

Output Level (at 1,000 Hz)

	IMPEDANCE	
	High	Low
Open Circuit Voltage*	-55 dB 1.78 mV	-75 dB .18 mV
Power Level**		-54 dB

*0 dB = 1 volt per microbar

**0 dB = 1 milliwatt with 10 microbars

Polar Pattern

Omnidirectional

Case

Model 415 and 430—Impact-resistant polystyrene and die casting. Model 420—Impact-resistant polystyrene. Model 425—Impact-resistant polystyrene and brass

Finish

Models 415-425-430—Non-reflecting gray and chrome
Model 420—Non-reflecting gray

Cable

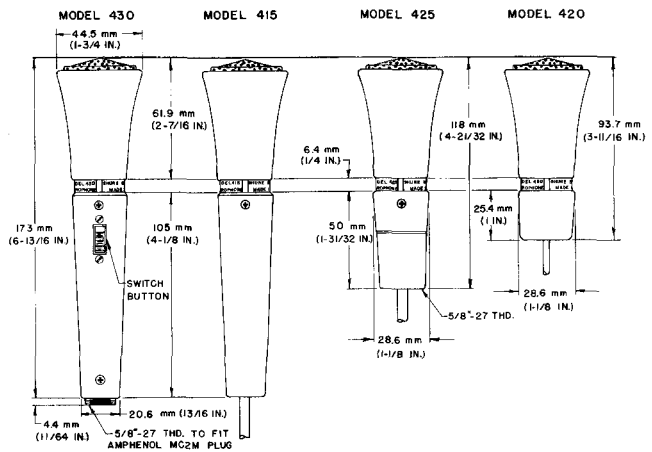
Model 415—2.1m (7 ft) non-detachable single-conductor shielded
Model 420—6.1m (20 ft) non-detachable two-conductor shielded
Model 425—2.1m (7 ft) non-detachable two-conductor shielded
Model 430—4.6m (15 ft) two-conductor shielded with Amphenol Type MC2M connector on microphone end

Switch

Models 415-420-425—None. Model 430—Press-to-talk switch—normally closed

Dimensions

See Figure C



OVERALL DIMENSIONS
FIGURE C

Net Weight

Model 415—227 g (1/2 lb) Models 420-425—113 g (1/4 lb)
Model 430—454 g (1 lb)

FURNISHED ACCESSORIES

Model 415—Model A25B Swivel Adapter. Model 420—Model A34L Lavalier Cord and clip assembly. Model 430—Switch locking plate for keeping switch in On position, Model A25B Swivel Adapter.

OPTIONAL ACCESSORIES

Model S38B or S33B Desk Stand for Models 415 and 430; Model A34L Lavalier Assembly for Models 415 and 430; Model A95 Series Line Matching Transformers for Models 420, 425, and 430. Model A45 Quick Disconnect Isolation Unit for Model 415 or 430 mounted on A25B Swivel Adapter.

REPLACEMENT PARTS

Model R4M Controlled Magnetic Cartridge for Models 415, 420, and 430, Model R4A for Model 425, Model C57 Cable and Plug Assembly for Model 430; Model 90B415 Switch Assembly for Model 430.

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.