

**SHURE**

222 HARTREY AVE., EVANSTON, ILL. 60204 U.S.A.

MICROPHONES AND ELECTRONIC COMPONENTS

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

DATA SHEET**MODELS 540 AND 540S SONODYNE II SERIES 2****OMNIDIRECTIONAL DYNAMIC MICROPHONES**

General: Models 540 and 540S "Sonodyne II" are pressure dynamic microphones with an adjustable frequency response and an omni-directional pickup pattern.

The "Sonodyne II" is very versatile in application and is ideal for all types of voice and music reproduction. The microphone is highly recommended for tape, wire, and disc recording, fixed or mobile public address, paging systems, amateur communications and general communication service.

When used vertically (microphone pointing straight up), the performers may be placed around the microphone without any direction discrimination.

Models 540 and 540S have a swivel which permits tilting, so the microphone can be aimed at the source of sound. Model 540S has a built-in ON-OFF switch to control the microphone circuit—an integral part of the microphone; the switch is a slide-to-talk locking type switch.

Additional features are:

1. Adjustable high frequency response (See Figure E).
2. Adjustable low frequency response (See Figure E).
3. Dual Impedance.
4. Built to withstand hard usage and great temperature variations.

The 15 foot (4.6 m) high quality shielded two conductor cable is supplied with microphone plug equivalent to the Amphenol 91-MC3M plug attached.

The Models 540 and 540S Microphones are dual impedance for connecting into microphone inputs rated at 25 to 200 ohms or into high impedance microphone inputs.

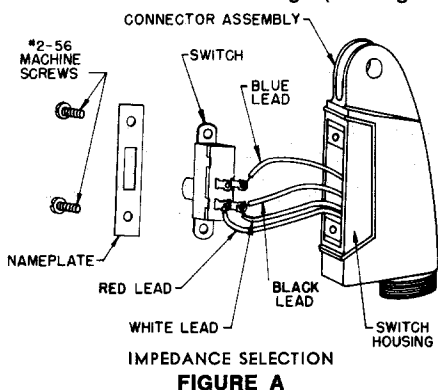
The low impedance connection is recommended where long cable lengths are required or under conditions of severe hum disturbance. The permissible cable length is practically unlimited, since neither response nor level is appreciably affected. For use with high impedance amplifiers, Shure Model A95A Line Matching Transformer is available for coupling the low impedance line to the amplifier input. The Shure Model A95A transformer permits coupling a 25-200 ohm line to the high impedance input.

Impedance Selection:

Models 540 and 540S are shipped connected as high impedance units. To change to low impedance:

MODEL 540S:

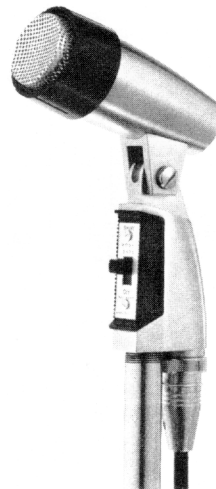
1. Remove the two No. 2-56 screws holding the switch to the connector and switch housing. (See Figure A).

**FIGURE A**

2. Remove the nameplate and take the switch out of the switch housing.
3. Disconnect the black lead (See Fig. A) from its terminal and solder this black lead to the switch terminal which has the red lead connected to it.
4. Disconnect the blue lead from its terminal and solder this blue lead to the unused switch terminal (See Fig. A).
5. Re-assemble switch and nameplate to switch housing. Tighten screws securely.

MODEL 540 (No Switch):

1. Remove the two No. 2-56 screws holding the nameplate and cover to the connector assembly.

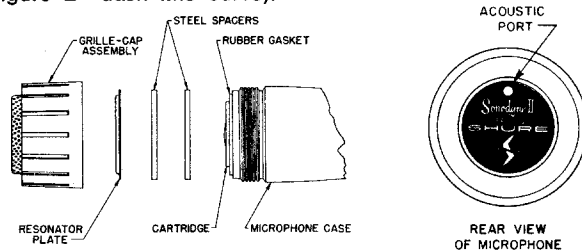


2. Remove the nameplate and cover and take the colored leads out of the connector assembly.
3. Disconnect the black lead from the white lead and insulate or tape the end of the white lead.
4. Connect (solder) the black lead to the red lead and insulate or tape the connection.
5. Replace leads inside of connector assembly and re-assemble nameplate and cover.

Response Selection:

The Models 540 and 540S "Sonodyne II" feature an adjustable frequency response at the high and low frequencies. The microphones are supplied having the EXTENDED high frequencies and the EXTENDED low frequencies (See Figure E—solid line curve).

For some applications, such as paging systems, base stations, ham radio, etc., it may be desirable to have more emphasis of the middle high frequencies (Figure E—dotted line curve) and/or a "roll off" of the low frequency response (Figure E—dash line curve).

**RESPONSE SELECTION
FIGURE B**

To modify the high frequency response, proceed as follows:

1. Holding microphone in a vertical position, unscrew (turn counterclockwise) and remove the microphone cap and grille assembly (See Figure B).
2. Remove the perforated aluminum resonator plate used for extended response and substitute the 18 hole resonator plate (supplied) and add one spacer. These are used for middle high frequency emphasis.
3. Re-assemble the cap and grille to the microphone case making sure that the microphone cartridge is properly seated and that the cap and grille assembly is tightened securely.

To modify the low frequency response, proceed as follows:

1. Locate the threaded hole at the back of the microphone (See Figure B).
2. Remove the headless No. 4-40 set screw in the threaded hole using a small screwdriver. The opening of this acoustic port produces the sharp roll-off of the low frequency response (See Figure E—dashed line curve).

SPECIFICATIONS

Type:

Dynamic

Diaphragm:

Shure Duracoustic

Frequency Response:

50 to 13,000 Hz. Provisions for alternate response: Rapid roll-off above 6,000 Hz. and/or below 400 Hz. (See Figure E)

Polar Pattern:

Omnidirectional

Microphone Rating Impedance:

Dual; 150 ohms for connecting into microphone inputs rated at 25 to 200 ohms and 40,000 ohms for connecting into high impedance microphone inputs. (See general copy under "Impedance Selection".)

Output Level:

1,000 Hz. response

Model 540 Series Low Impedance

Open Circuit Voltage 76.5 db* (.149 mv)

Power Level 56.0 db**

EIA Microphone Rating

Gm (sensitivity) -148.0 db***

Model 540 Series High Impedance

Open Circuit Voltage 53.5 db* (2.13 mv)

EIA Microphone Rating

Gm (sensitivity) -150.0 db***

*0 db = 1 volt per microbar

**0 db = 1 milliwatt with 10 microbars

***0 db = EIA Standard SE-105, August 1949

Cable:

15-foot (4.6 m) two-conductor shielded with Amphenol MC3M type microphone plug on the microphone end.

Case:

Chrome-plated die-cast and black "Armo-Dur."

Dimensions:

See Figure D

Switch:

Model 540 None

Model 540S Built in "ON-OFF" switch to control microphone circuit. The switch is an integral part of the receptacle assembly and is a slide-to-talk type switch.

Swivel:

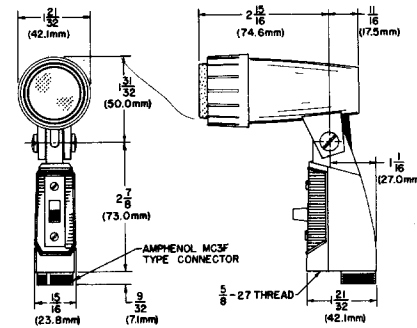
Self-adjusting "Positive Action" with 5/8"-27 stand thread.

Net Weight (less cable):

15 ounces (425 grams)

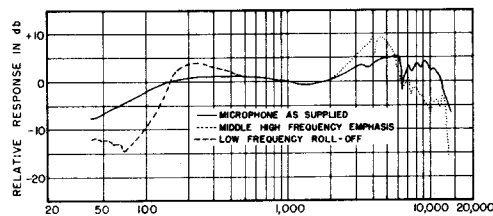
Packaged Weight:

2 pounds, 6 ounces (1077 grams)



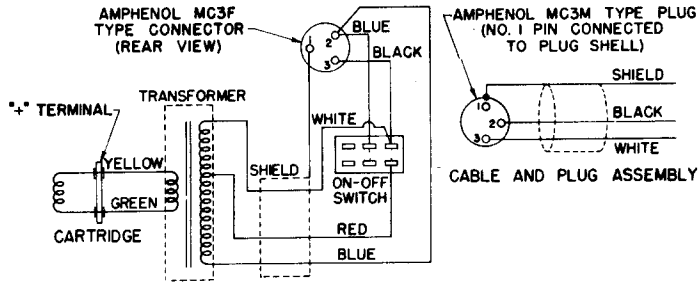
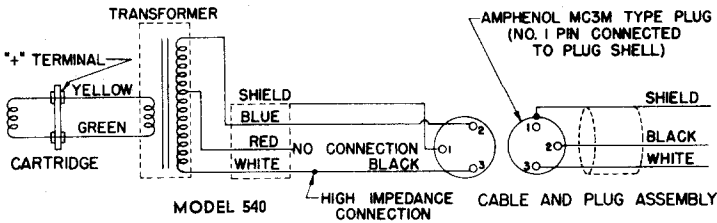
OVERALL DIMENSIONS

FIGURE D



FREQUENCY RESPONSE IN HERTZ

FIGURE E



MODEL 540S
INTERNAL CONNECTIONS
FIGURE C

Important: Shure Microphone Cables are selected after exhaustive tests to insure superior performance in microphones because of low capacities, superior shielding properties and unusually long life under severe use.

Cables with plastic insulation should not be subjected to excessive soldering-iron heat. Carefully clean and tin the conductors and the connections to which the conductors are to be soldered. The soldering operation can then be done with a minimum of heat, thereby avoiding any possibility of damage to the cable.

ARCHITECT'S SPECIFICATIONS

The microphone shall be Shure Model 540S (540) or equivalent. A moving coil type microphone with a frequency range of 50 to 13,000 Hz. Its response shall be adjustable to allow limiting the high and low frequency characteristics when desired. The unit shall have an omnidirectional polar characteristic. The microphone shall be a dual impedance microphone with rated impedance of 150 ohms for connecting into microphone inputs rated at 25 to 200 ohms and high for connecting into high impedance microphone inputs.

The microphone output shall be:

25-200 ohm impedance: -56.0 db
(0 db = 1 milliwatt per 10 microbars)

High impedance: -53.5 db
(0 db = 1 volt per microbar)

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

Low impedance -148.0 db

High impedance -150.0 db

EIA Standard SE-105, August 1949

The microphone shall be provided with an adjustable swivel with a built-in "On-Off" switch to control the microphone circuit. The Model 540 shall have no switch. It shall have a detachable cable connector capable of connection to a two-conductor shielded cable. The microphone shall mount on a stand having 5/8"-27 thread. The overall dimensions shall be 5 1/8" (130.2 mm) in height, 1 2 1/32" (42.1 mm) in diameter, and 4" (101.6 mm) in depth.

FURNISHED ACCESSORIES

Resonator plate and spacer for changing response.

OPTIONAL ACCESSORIES

Line Matching Transformer A95A
Vibration-Isolation Stand S39A
Desk Stand S37A
Quick-Disconnect Isolation Unit Model A47

REPLACEMENT COMPONENTS

Dynamic Cartridge Model R50
Switch Model RK64S
Cable and Plug Assembly Model C55

Guarantee: This 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.