

OMNIDIRECTIONAL DYNAMIC MICROPHONE

GENERAL

The Model 540SH SONODYNE® II is a dual-impedance omnidirectional dynamic microphone with response tailoring capability at both the low and midrange-to-high frequencies.

As supplied with its extended low and high frequency response, the microphone is excellent for both music and voice in public address and recording. In addition, its tailored response provides highly intelligible speech reproduction in communications and paging applications.

The 540SH microphone is designed for stand mounting and has an On-Off switch on the integral positive-action swivel mount. Solderless impedance change, a strong detachable cable with a professional three-pin audio connector, rugged construction, all make the SONODYNE II a very versatile microphone.

Microphone Features:

- Excellent reproduction of voice and music
- Omnidirectional pickup pattern, picks up sound all around
- Response tailoring at both low and midrange-to-high frequencies
- Solderless impedance change
- Built-in On-Off switch, an integral part of the attached, positive-action swivel assembly
- Rugged professional three-pin audio connector on the microphone
- Strong, detachable cable especially selected for effective shielding from hum pickup
- Can be used indoors or outdoors, dependable under all operating conditions



Polar Pattern

Omnidirectional

Impedance

Dual. Microphone rating impedance is 150 ohms (230 ohms actual) for connection to microphone inputs rated at 19 to 300 ohms and "High" for connection to high-impedance microphone inputs. Wired for low impedance as supplied. To change impedance, see sections on Impedance Selection and Connections.

Output Level (at 1,000 Hz)

	IMPEDANCE	
	Low	High
Open Circuit Voltage*.....	-79.0 dB (.112 mV)	-55.0 dB (1.78 mV)
Power Level**	-58.5 dB	
	*0 dB = 1 volt per microbar	
	**0 dB = 1 milliwatt per 10 microbars	

Phasing

Positive pressure on diaphragm produces positive voltage on pin 2 when connected for low impedance, on pin 1 when connected for high impedance. (See Figure 4.)

Switch

Built-in On-Off switch, integral part of swivel mount

Cable

4.6m (15 ft) two-conductor shielded, with professional three-pin female audio connector*

*Designed to mate with Cannon XL series, Switchcraft A3 (Q.G.) Series, or equivalent connector

Case

Black and silver finish metal and black ARMO-DUR®

Dimensions

See Figure 2

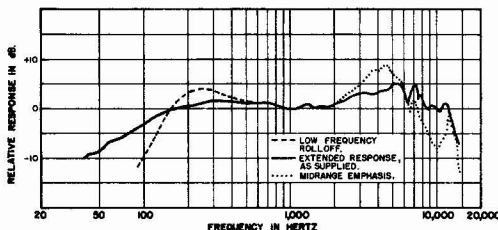
SPECIFICATIONS

Type

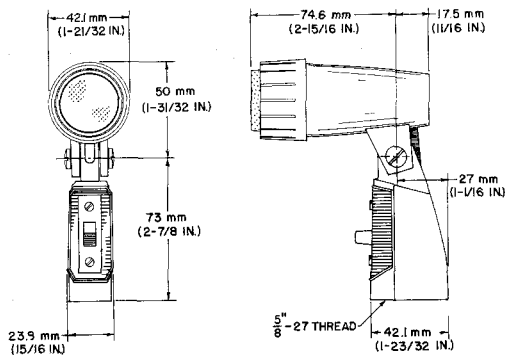
Dynamic

Frequency Response

50 to 13,000 Hz. Provision for low-frequency rolloff and midrange emphasis (see Figure 1)



TYPICAL FREQUENCY RESPONSE
FIGURE 1



OVERALL DIMENSIONS
FIGURE 2

Net Weight (less cable)
425 grams (15 oz)

Packaged Weight
1.07 kg (2 lb, 6 oz)

RESPONSE SELECTION

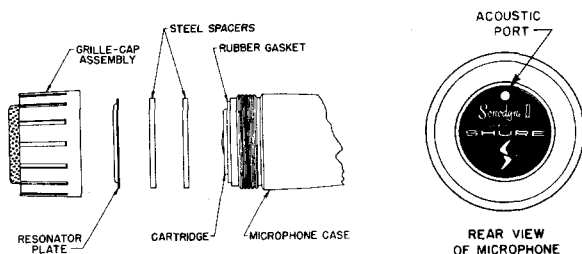
The Model 540SH SONODYNE® II frequency response can be tailored for low-frequency rolloff or midrange emphasis as shown in Figure 1. Both the rolloff and emphasis are desirable if the microphone is used for voice communication or in a paging system, since the tailored response enhances intelligibility of the speaking voice. The microphone is supplied with the extended low and midrange response shown in the solid line curve of Figure 1. To modify the microphone response proceed as follows.

A. Provide midrange emphasis:

1. Hold the microphone in a vertical position; unscrew (turn counterclockwise) and remove the microphone grille-cap assembly (see Figure 3).
2. Remove the perforated aluminum resonator plate (used for extended response); substitute the 18-hole resonator plate (supplied), and add one spacer (for a total of two).
3. Reassemble the grille-cap to the microphone, making certain that the cartridge is properly seated. Tighten securely.

B. Provide low-frequency rolloff:

1. Locate the threaded hole at the back of the microphone (see Figure 3).
2. Use a small screwdriver to remove the headless No. 4-40 set screw in the threaded hole. Opening the acoustic port produces the low-frequency rolloff shown in Figure 1.



RESPONSE SELECTION
FIGURE 3

IMPEDANCE SELECTION

The Model 540SH is supplied connected for low-impedance operation. 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 by long cables. Shure Model A95 Series Line Matching Transformers are available for use when 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 19 to 300 ohm microphone line and a high-impedance input and are available with various input and output connectors.

To change the Model 540SH to high impedance, proceed as follows.

1. Remove the two screws that hold the switch.
2. Gently pull the switch and its plastic housing forward out of the swivel taking care not to break any leads.
3. With a long-nose pliers, lift upward and disconnect the 2-terminal black plastic impedance selection socket from the back of pin 3 of the audio connector. Take care not to break leads while performing this operation.
4. With the long-nose pliers, replace the impedance selection socket with pin 3 of the audio connector inserted in socket terminal "H". Press the plastic socket firmly in place.
5. Reassemble the switch housing, switch, and switchplate in the swivel taking care not to pinch any leads.
6. Fasten securely with the two previously removed screws.

CONNECTIONS

When using the microphone in low-impedance, the BLACK and WHITE cable leads are the "hot" conductors for balanced-line connections; the shield is connected to the chassis or amplifier ground.

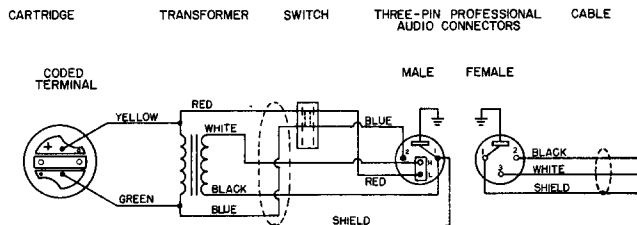
When using the microphone in high impedance, the WHITE cable lead is the "hot" conductor; the shield is connected to the chassis or amplifier ground. The BLACK cable lead should be insulated.

PHASING

To test two microphones and/or their cables for proper phasing, connect them to an amplifier and talk or sing into them while holding them three or four inches apart. The sound from the speakers should be the same when talking into either microphone or directly between them if they are in phase with each other. If the sound drops drastically, or if a dead spot is found when talking between the two microphones, either the microphones or their cables (low impedance only) are out of phase. All cables and microphones should be tested in this manner to insure that they are in phase with each other.

To change the phase of a low-impedance microphone cable, either use a Shure A15PRS Phase Reverser or interchange the wires connected to pins 2 and 3 of the connector. To change the phase of a microphone,

the microphone cartridge leads must be interchanged (see Figure 4). This should be performed by your dealer, the Shure Factory Service Department, or other qualified service personnel.



INTERNAL CONNECTIONS
FIGURE 4

FURNISHED ACCESSORIES

- Resonator Plate 53A487
- Spacer 53A629A
- Lockplate 90NR1371

OPTIONAL ACCESSORIES

- Line Matching Transformer A95 Series
- Desk Stand S33B, S37A, S38B, S39A, or S40A
- Quick Disconnect Adapter A47

REPLACEMENT PARTS

- Cartridge R50
- Cable C59

ARCHITECTS' SPECIFICATIONS

The microphone shall be a moving coil (dynamic) type with a frequency response of 50 to 13,000 Hz. The microphone shall have provision for adjusting the low frequencies and the middle-to-high frequencies. The unit shall have an omnidirectional polar characteristic. The microphone shall be a dual-impedance unit with a rated impedance of 150 ohms for connection to microphone inputs rated at 19 to 300 ohms and "High" for connection to high-impedance microphone inputs. Impedance change shall be solderless at the microphone connector.

The microphone output shall be:

- Low Impedance -58.5 dB
(0 dB = 1 milliwatt per 10 microbars)
- High impedance -55.0 dB
(0 dB = 1 volt per microbar)

The microphone shall be equipped with a built-in On-Off switch and an integral swivel assembly suitable for mounting on a stand with a 5/8"-27 thread. The microphone shall be provided with a detachable 4.6m (15 ft) two-conductor shielded cable with a professional three-pin female audio connector* at the microphone end. The overall dimensions of the microphone shall be 123 mm (4-27/32 in.) in height, 42.1 mm (1-21/32 in.) in width, and 92.1 mm (3-5/8 in.) in depth.

The microphone shall be the Shure Model 540SH or equivalent.

* Designed to mate with Cannon XL series, Switchcraft A3 (Q.G.) series, or equivalent connector.

GUARANTEE

This Shure product is guaranteed in normal use to be free from electrical and mechanical defects for a period of one year from date of purchase. Please retain proof of purchase date. This guarantee includes all parts and labor. This guarantee is in lieu of any and all other guarantees or warranties, express or implied, and there shall be no recovery for any consequential or incidental damages.

SHIPPING INSTRUCTIONS

Carefully repack the unit and return it prepaid to:
 Shure Brothers Incorporated
 Attention: Service Department
 1501 West Shure Drive
 Arlington Heights, Illinois 60004
 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.