

# *Service Manual*

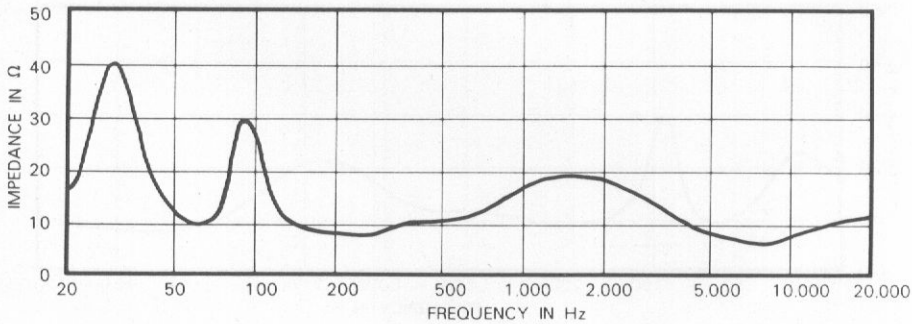
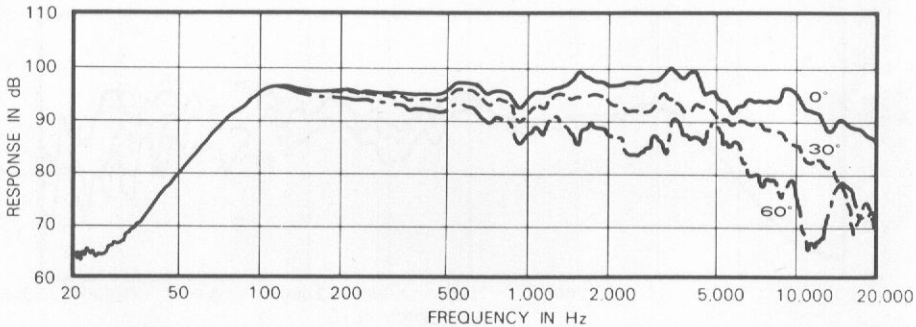
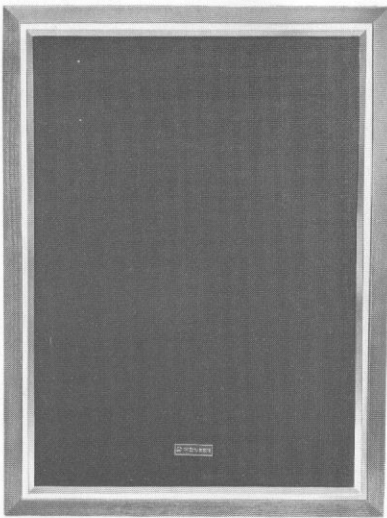
## SPEAKER SYSTEMS

**CS-50**

# 2. SPECIFICATIONS OF CS-50

Enclosure	Bass-reflex type
Speakers	
Woofer	12 in. (30cm) cone type
Tweeter	3 in. (7.7cm) cone type
Input Impedance	8Ω
Frequency range	45 to 20,000Hz
Sensitivity	96.5dB/W at 1m distance
Maximum input power	50W
Crossover frequency	
Lows . . . Highs	4,200Hz
External dimensions	22-13/32(H) x 16-1/2(W) x 11-13/32(D) in.
	569(H) x 419(W) x 290(D) mm
Weight	28lb 10oz (13kg)

NOTE: Specifications and the design subject to possible modification without notice due to improvements.



## 4. REPLACEMENT OF SPEAKER UNIT

### 4-1 SPEAKER REPLACEMENT

- 1 Remove rear enclosure panel.
- 2 Loosen 4 nuts holding the speakers in place.
- 3 Pull lugs off speaker terminals. Be careful not to lose the terminals. (Fig. 1)
- 4 Make connections to new speakers as follows:

#### Model CS-40

Woofers: blue lead wire to (+), white lead wire to (-).

Tweeters: red lead wire to (+), white lead wire to (-).

#### Model CS-50

Woofers: blue lead wire to (+), white lead wire to (-).

Tweeters: red lead wire to (+), white lead wire to (-).

#### Model CS-60

Woofers: blue lead wire to (+), white lead wire to (-).

Mid-range: green lead wire to (+), white lead wire to (-).

Tweeters: red lead wire to (+), white lead wire to (-).

- 5 Install speakers firmly and securely.
- 6 Tighten nuts in cross-wise pattern (Fig. 2) to assure balanced stress.

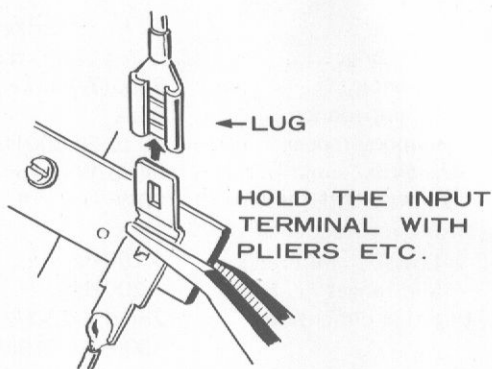


Fig. 1

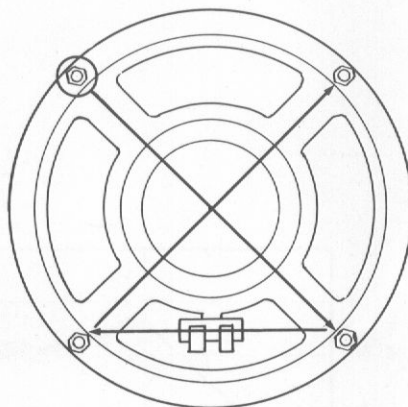


Fig. 2

### 4-2 NETWORK REPLACEMENT

- 1 Remove rear enclosure panel.
- 2 Take off all lead wires from network. Mark lead wires with tags, etc. to assure correct re-connection afterwards.
- 3 The network is held in place by all self-tapping screws and by adhesive. Remove screws, carefully break adhesive to remove network.
- 4 Affix new network with adhesive and screws. Secure firmly to prevent vibrations.
- 5 Connect again lead wires to network, observing markings made in step 2 above.

### 4-3 REPLACEMENT OF INPUT TERMINALS

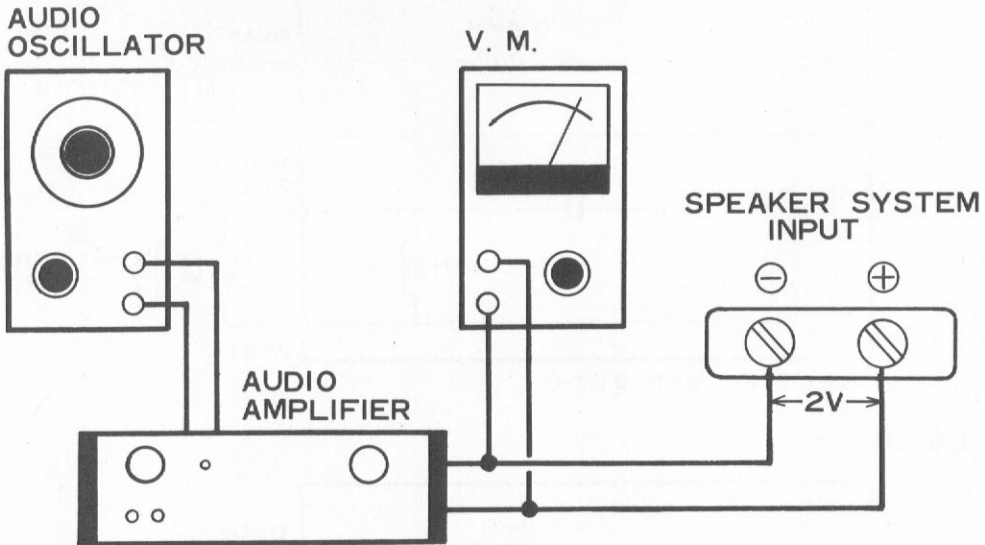
- 1 Remove rear enclosure panel.
- 2 Remove all screws holding terminal board on rear panel.
- 3 Unsolder lead wires from terminals. Replace terminals then re-solder lead wires: blue lead wire to (+) side, white lead wire to (-) side.

NOTE: The input terminal of the CS-60 is incorporated with the network.

## 5. OPERATIONAL CHECKS OF SPEAKER SYSTEM

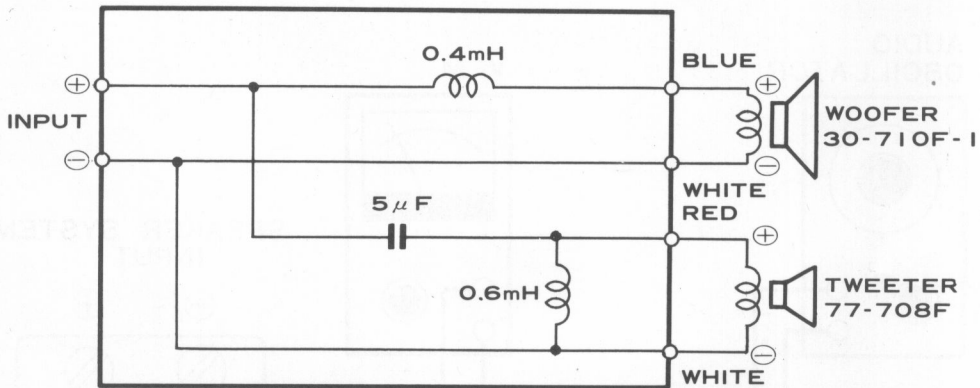
- 1 Connect the test equipment (audio oscillator, amplifier, and voltmeter) arranged as shown in the below illustration.
- 2 Be sure that the tweeter produces proper sound when the INPUT terminals are fed with a 10kHz/2V-sine wave which is generated from audio oscillator and amplified by audio amplifier.
- 3 Be sure that the mid-range produces proper sound when the INPUT terminals are fed with a 2kHz/2V-sine wave which is generated from audio oscillator and amplified by audio amplifier.
- 4 Be sure that the woofer produces proper sound when the INPUT terminals are fed with a 400Hz/2V sine wave which is generated from audio oscillator and amplified by audio amplifier.
- 5 Be sure that each of speakers (tweeter and woofer) produces well-balanced sound when the INPUT terminals are fed, in a range from 40 to 20,000Hz, with each of sine waves which is generated from audio oscillator and amplified by audio amplifier.

NOTE: As the CS-40 and CS-50 are composed of two way systems, there is no need to have the equipment test for the mid-range shown in the item 3.



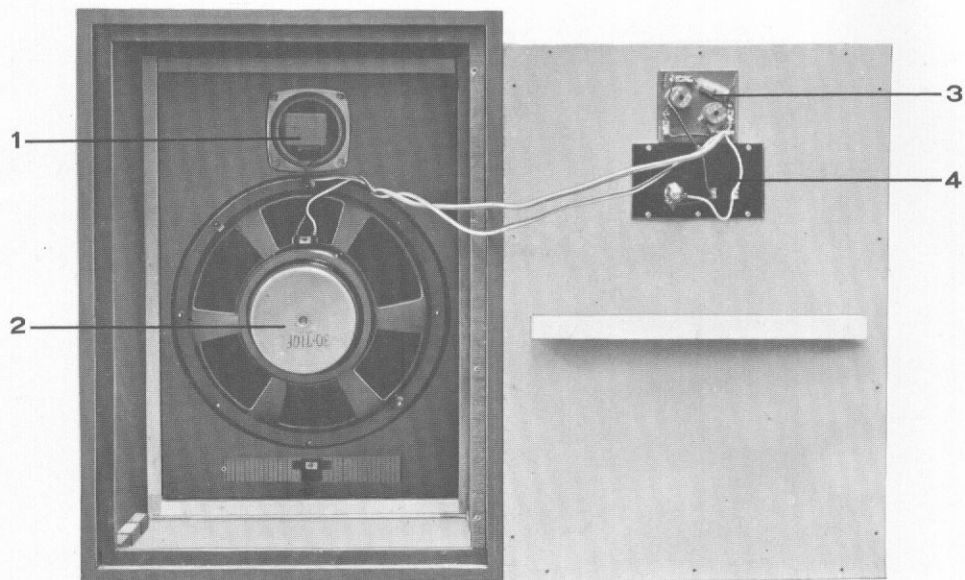


## 6-2 CS-50



NETWORK SWN-017-0

7-2 CS-50



Key No.	Description	Part No.	
1	Tweeter	77-708F	
2	Woofer	30-710F-1	
3	Network	SWN-017-O	
4	Input terminal assembly	SXB-037-O	
	Service pad	E11-048-A	
	Speaker cable	D51-007-O	
	Operating guide	SRB-022-O	
	Packing case assembly	SHK-026-O	

# 8. PACKING METHOD

OPERATING GUIDE  
CS-40  
(SRB-016-0)  
CS-50  
(SRB-022-0)  
CS-60  
(SRB-017-0)

