2. SPECIFICATIONS OF CS-50

Enclosure                      Bass-reflex type
Speakers
  Woofers                   12 in. (30cm) cone type
  Tweeter                   3 in. (7.7cm) cone type
Input Impedance              8Ω
Frequency range              45 to 20,000 Hz
Sensitivity                  96.5dB/W at 1m distance
Maximum input power          50W
Crossover frequency
  Lows... Highs             4,200 Hz
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**
     - Woofer: blue lead wire to (+), white lead wire to (−).
     - Tweeter: red lead wire to (+), white lead wire to (−).
   - **Model CS-50**
     - Woofer: blue lead wire to (+), white lead wire to (−).
     - Tweeter: red lead wire to (+), white lead wire to (−).
   - **Model CS-60**
     - Woofer: blue lead wire to (+), white lead wire to (−).
     - Mid-range: green lead wire to (+), white lead wire to (−).
     - Tweeter: 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.

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. Un solder 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.
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 Service  | SXB-037-O       |
        | 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)

SPEAKER CABLE
(D51-007-0)
SERVICE PAD
(<11-048-A>)

PACKING CASE ASS'Y
CS-40
(SHK-017-0)
CS-50
(SHK-026-0)
CS-60
(SHK-022-0)